

Decision

Decision on the Strategic Innovation Fund: round 2 Alpha Phase

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Contact	Marzia Zafar, Deputy Director of Strategy & Decarbonization
Team:	Networks
Telephone	020 7901 7295
Email:	Marzia.Zafar@ofgem.gov.uk

The Strategic Innovation Fund (SIF) supports network innovation that contributes to the achievement of Net Zero, while delivering net benefits to energy consumers. It facilitates collaboration and coordination with other public funders of innovation and activities funded by Government to ensure funding gaps are avoided.

In May 2022, we¹ launched four Innovation Challenges for round 2 of the SIF to target innovation funding at strategic issues facing networks – supporting a just energy transition, preparing for a net zero power system, improving energy system resilience and robustness, and accelerating decarbonisation of major energy demands. Earlier this year we provided £4.7m in funding to 53 Projects for a 2-month Discovery Phase². We have now decided to fund 36 Projects across these four Innovation Challenges for the round 2 Alpha Phase.

We operate the SIF in partnership with Innovate UK. Ofgem is the decision maker in relation to Project Funding and its decisions on which Projects to fund are informed by the recommendations of Expert Assessors, who have assessed Projects against Eligibility Criteria set out in the SIF Governance Document.

¹ The terms 'we', 'us', 'our' refer to the Gas and Electricity Markets Authority. Ofgem is the office of the Authority.

² For more information on the successful round 2 Discovery Phase Projects please see:

<https://www.ofgem.gov.uk/publications/strategic-innovation-fund-round-2-discovery-projects-approved-funding>

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Introduction	5
1. Decision on Innovation Challenge: Supporting a Just Energy Transition	14
Update on the Innovation Challenge.....	14
Summary of our decisions.....	14
2. Decision on Innovation Challenge: Preparing for a Net Zero Power System.....	16
Update on the Innovation Challenge.....	16
Summary of our decisions.....	16
3. Decision on Innovation Challenge: Improving Energy System Resilience and Robustness	18
Update on the Innovation Challenge.....	18
Summary of our decisions.....	18
4. Decision on Innovation Challenge: Accelerating Decarbonisation of Major Energy Demands Projects	20
Update on the Innovation Challenge.....	20
Summary of our decisions.....	20
5. Next steps.....	22
Funding of selected Projects	22
Monitoring and evaluation of Projects	22
Future phases of Innovation Challenge	22
Annex 1: Application assessment - Innovation Challenge: accelerating decarbonisation of major demands.....	24
Carnot Gas Plant - Alpha	25
Net Zero Community Energy Hubs - Alpha	30
Integrated Hydrogen Transport Hubs	34
Planning Regional Infrastructure in a Digital Environment (PRIDE) (Alpha phase) ..	39
Full Circle	43
Local Energy Oxfordshire - Neighbourhoods (LEO-N).....	48
Heatropolis	51
Heat Risers	55
Inform	59
Park & Flex	63
Indus	67
Lightspeed.....	71

RetroMeter	75
Watt Heat.....	79
Resilient and Flexible Railway Multi-Energy Hub Networks for Integrated Green Mobility - Round 2	83
Tyseley Environmental Enterprise District (TEED) Alpha Phase	88

Annex 2: Application assessment - Innovation Challenge: improving

energy system resilience and robustness 93

Hydrogen Cost Reduction (HyCoRe)	94
NextGen Electrolysis – Wastewater to Green Hydrogen	97
HyNTS Supply Chain	101
Distribution Network Information Modelling (DNIM) - Alpha	105
SIF Blade start Demonstrator from offshore wind (SIF BLADE)	109
REACT.....	114
D-Suite	118
Scenarios for Extreme Events	122
Whole Energy System Resilience Vulnerability Assessment (WELLNESS).....	126
SF6 Whole Life Strategy	129
CommsConnect	133
Connectrolyser	137
Trinity	141
Digital Inspector.....	144
CRoDo+: Climate Resilience Demonstrator (extension to new climate risks)	148
NIMBUS	151
Looking-Glass - Alpha	156
SCOHL - SuperConductor OverHead Lines	161
REWIRE (REsidential Whole System Integrated REsilience)	165
Dynamic Networks.....	169
WARN - Weather Alerts and Risk analysis for Network operators	174

Annex 3: Application assessment - Innovation Challenge: preparing for a

net zero power system 179

HyNTS Waste Heat Recovery for Electrolysis	180
HyNTS Hybrid Storage	184
Artificial Forecasting	189
Flexible Queue Management (Alpha).....	194
Powering Wales Renewably.....	198
INSIGHT	202
Shifting Currents	206

Annex 4: Application assessment - Innovation Challenge: supporting a just energy transition 212

Hy-Fair - Alpha..... 213

VIVID - Vulnerability Identification Via informative Data 216

Net Zero Terrace 220

SHIELD - Smart Heat and Intelligent Energy in Low-Income Districts..... 224

Guidelight..... 227

Introduction

The Strategic Innovation Fund (SIF) is a funding mechanism within Ofgem's RIIO-2 network price control³ for the Electricity System Operator, Electricity Transmission, Gas Transmission and Gas Distribution sectors.

The SIF focuses on finding and funding ambitious, innovative Projects with the potential to accelerate the transition to Net Zero⁴ while delivering net benefits to energy consumers⁵. In order to mitigate the risk associated with the innovation process, the default approach is that innovation will be funded in three Project Phases (Discovery Phase, Alpha Phase and Beta Phase).

Each of the Phases focuses on different aspect of the innovation process. The Discovery Phase focuses on feasibility, defining the problem, the Project is trying to solve, and the value in solving it. The Alpha Phase focuses on experimental development, preparing and testing the different solutions to the Problem identified during the Discovery Phase, ahead of any future large-scale demonstrations. The Beta Phase focuses on building, operation and/or demonstration through the deployment of the solution to the Problem.

The first round of the SIF was launched in July 2021 with four Innovation Challenges focusing on strategic issues currently facing networks – whole system integration, data and digitalisation, zero emissions transport and heat. Round 2 of the SIF continues this focus on issues currently facing networks with four new Innovation Challenges – supporting a just energy transition, preparing for a net zero power system, improving energy system resilience and robustness, and accelerating decarbonisation of major energy demands. Earlier this year we awarded over £4.7m in funding for 53 Projects for the Discovery Phase of round 2. For the Discovery Phase, Projects had two months to focus on feasibility and could not request SIF Funding of more than £150,000 exclusive of VAT. As part of the Discovery Phase SIF Funding, we released a SIF Funding Decision⁶ outlining which Projects were being awarded SIF Funding for the Discovery Phase.

³ Further detail regarding the RIIO-2 network price control can be found here: [Network price controls 2021-2028 \(RIIO-2\) | Ofgem](#)

⁴ The UK Government and Welsh Government have both committed to reach net zero carbon emissions by 2050, while the Scottish Government has set a target date for net zero emissions by 2045.

⁵ Full details about the SIF can be found here: <https://www.ofgem.gov.uk/energy-policy-and-regulation/policy-and-regulatory-programmes/network-price-controls-2021-2028-riio-2/network-price-controls-2021-2028-riio-2-network-innovation-funding/strategic-innovation-fund-sif>

⁶ For more information on the successful round 2 Discovery Phase Projects, please see: <https://www.ofgem.gov.uk/publications/strategic-innovation-fund-round-2-discovery-projects-approved-funding>

Upon completion of the Discovery Phase, Projects had the choice of submitting an Application for the Alpha Phase, merging with another similar Project and submitting an Application, or not submitting an Alpha Phase Application. Following a consultation earlier this year, Projects from outside the SIF which had already completed activities similar to a Discovery Phase were also eligible for this Alpha Phase. However, no such Applications were received. Projects which had previously completed a Discovery Phase Project in round 1 of the SIF or were unsuccessful at the round 1 Alpha Phase were also eligible to apply to the round 2 Alpha Phase, so long as they aligned with the round 2 Innovation Challenges and met the specific requirements set out for the Alpha Phase. This Funding Decision is for the Alpha Phase of round 2 of the SIF, as a continuation of the four round 2 Innovation Challenges following the completion of the Discovery Phase. Projects in the Alpha Phase must start by 1 October 2023, end by 31 March 2024 and not request funding of more than £500,000, exclusive of VAT.

This document sets out our decisions on the Applications we received. In some instances, Projects which have been successful in the round 2 Alpha Phase assessment have also had Project-specific conditions set out⁷. The Project-specific conditions have been set out in each Project Directions for the round 2 Alpha Phase.

Alongside this document we are publishing the recommendations report from the Expert Assessors and the SIF Project Directions which have been accepted by the Projects selected for SIF Funding.

The SIF Governance Document includes information and details on the SIF, the role of UKRI, the purpose of this document, and how the SIF works⁸. Consistent with the SIF Governance Document, Applications were assessed based on the Eligibility Criteria in chapter 2 of the SIF Governance Document, the show and tell presentations referred to in paragraph 6.11 of the SIF Governance Document, and taking into consideration any additional and relevant information available. The Expert Assessors' assessment of the Applications formed the basis of the funding recommendations set out separately in the recommendations report and helped inform this decision document.

⁷ Project-specific conditions are implemented in the SIF Project Directions. Note that project-specific conditions within SIF Project Directions start as condition number 3. Project-specific condition 1 and 2 are common in all SIF Project Directions

⁸ For more information on the SIF Governance Document, please see: <https://www.ofgem.gov.uk/publications/updated-sif-governance-document>

Alpha Phase round 2 submissions

We received 49 Applications across the four challenges of this Alpha Phase by the closing deadline of 5 July 2023.

Of the 49 Applications received, we have approved the funding of 36 Alpha Phase Projects for a total of £16,091,304 of SIF Funding. The 36 approved Projects are outlined in Table 1 below.

Summary of Projects approved for SIF Funding

Table 1: Supporting a Just Energy Transition Projects Approved for Alpha Phase SIF Funding

Network type	Project title⁹	Lead applicant	SIF Funding requested (£)
Gas	Hy-Fair - Alpha	SOUTHERN GAS NETWORKS PLC	£463,201.00
Electricity	Net Zero Terrace	ELECTRICITY NORTH WEST LIMITED	£494,502.00
Electricity	VIVID - Vulnerability Identification Via informative Data	SCOTTISH AND SOUTHERN ENERGY POWER DISTRIBUTION LIMITED (SHEPD)	£448,525.00

⁹ Full Project descriptions are available below in Annex 1.

Electricity	Guidelight	UK POWER NETWORKS (OPERATIONS) LIMITED	£487,322.00
Electricity	SHIELD - Smart Heat and Intelligent Energy in Low-Income Districts	UK POWER NETWORKS (OPERATIONS) LIMITED	£475,123.00

Table 2: Preparing for a Net Zero Power System Projects Approved for Alpha Phase SIF Funding

Network type	Project title¹⁰	Lead applicant	SIF Funding requested (£)
Electricity	INSIGHT	SCOTTISH HYDRO ELECTRIC TRANSMISSION PLC	£227,093.00
Gas	HyNTS Waste Heat Recovery for Electrolysis	NATIONAL GAS TRANSMISSION PLC	£386,732.00
Electricity	Powering Wales Renewably	NATIONAL GRID ELECTRICITY SYSTEM OPERATOR LIMITED	£499,176.00

¹⁰ Full Project descriptions are available below in Annex 2.

Electricity	Flexible Queue Management (Alpha)	NORTHERN POWERGRID (NORTHEAST) LIMITED	£245,416.00
Electricity	Artificial Forecasting	NORTHERN POWERGRID (NORTHEAST) LIMITED	£467,838.00
Gas	HyNTS Hybrid Storage	NATIONAL GAS TRANSMISSION PLC	£375,369.00

Table 3: Improving Energy System Resilience and Robustness Projects Approved for Alpha Phase SIF Funding

Network type	Project title¹¹	Lead applicant	SIF Funding requested (£)
Electricity	SIF Black start Demonstrator from offshore wind (SIF BLADE)	SCOTTISH POWER ENERGY NETWORKS HOLDINGS LIMITED	£499,920.00
Gas	Hydrogen Cost Reduction (HyCoRe)	NORTHERN GAS NETWORKS LIMITED	£499,787.00
Electricity	REACT	SCOTTISH HYDRO ELECTRIC	£496,625.40

¹¹ Full Project descriptions are available below in Annex 3.

		TRANSMISSION PLC	
Electricity	D-suite	SP ENERGY NETWORKS: MANWEB PLC	£495,010.00
Electricity	Scenarios for Extreme Events	NATIONAL GRID ELECTRICITY SYSTEM OPERATOR	£457,899.00
Electricity	Whole Energy System Resilience Vulnerability Assessment (WELLNESS)	NATIONAL GRID ELECTRICITY TRANSMISSION PLC	£471,725.00
Electricity	SF6 whole life strategy	NATIONAL GRID ELECTRICITY TRANSMISSION PLC	£403,311.00
Gas	NextGen Electrolysis – Wastewater to Green Hydrogen	WALES & WEST UTILITIES LIMITED	£295,824.00
Electricity	CommsConnect	UK POWER NETWORKS (OPERATIONS) LIMITED (SPN)	£403,382.00
Electricity	Connectrolyser	UK POWER NETWORKS (OPERATIONS) LIMITED (EPN)	£498,483.00
Electricity	Trinity	UK POWER NETWORKS	£499,545.00

		(OPERATIONS) LIMITED (SPN)	
Gas	Digital Inspector	CADENT GAS LIMITED	£309,790.00
Electricity	CReDo+ Climate Resilience Demonstrator (extension to new climate risks)	UK POWER NETWORKS (OPERATIONS) LIMITED (EPN)	£497,856.00
Electricity	NIMBUS	SCOTTISH HYDRO ELECTRIC TRANSMISSION PLC	£499,873.00

**Table 4: Accelerating Decarbonisation of Major Energy Demands
Projects Approved for Alpha Phase SIF Funding**

Network type	Project title¹²	Lead applicant	SIF Funding requested (£)
Electricity	Full Circle	UK POWER NETWORKS (OPERATIONS) LIMITED (LPN)	£416,811.00
Electricity	Planning Regional Infrastructure in a Digital Environment (PRIDE)	NATIONAL GRID ELECTRICITY DISTRIBUTION (EAST MIDLANDS) PLC	£499,874.00

¹² Full Project descriptions are available below in Annex 4.

		(WESTERN POWER DISTRIBUTION PLC)	
Electricity	LEO-N	SOUTHERN ELECTRIC POWER DISTRIBUTION PLC	£481,159.00
Electricity	Heatropolis	UK POWER NETWORKS (OPERATIONS) LIMITED (LPN)	£483,374.00
Electricity	Heat Risers	UK POWER NETWORKS (OPERATIONS) LIMITED (LPN)	£489,735.00
Electricity	Inform	NORTHERN POWERGRID (NORTHEAST) PLC	£388,491.00
Electricity	Park & Flex	UK POWER NETWORKS (OPERATIONS) LIMITED (SPN)	£467,470.00
Electricity	Indus	UK POWER NETWORKS (OPERATIONS) LIMITED (EPN)	£496,757.00
Electricity	Lightspeed	UK POWER NETWORKS	£497,928.00

		(OPERATIONS) LIMITED (SPN)	
Electricity	RetroMeter	ELECTRICITY NORTH WEST LIMITED	£483,934.00
Electricity	Watt Heat	UK POWER NETWORKS (OPERATIONS) LIMITED (LPN)	£486,444.00

1. Decision on Innovation Challenge: Supporting a Just Energy Transition

Section Summary

This chapter contains Ofgem’s decision on Applications in response to the ‘supporting a just energy transition’ Innovation Challenge. We have decided to fund five Projects, with a total of £2,368,673 of SIF Funding being distributed. This consists of one gas Project and four electricity Projects.

Update on the Innovation Challenge

1.1. This Alpha Phase for round 2 is a continuation of the ‘supporting a just energy transition’ Innovation Challenge launched in May 2022 and for which round 2 Discovery Phase Projects were completed at the end of June 2023.

1.2. A total of five proposals were submitted to UKRI through the IFS portal in relation to this challenge for the round 2 Alpha Phase by the closing deadline of 5 July 2023.

1.3. Further information on the ‘supporting a just energy transition’ Innovation Challenge for the Alpha Phase of round 2 can be found on the IFS portal and in the Innovation Challenge brief.¹³

Summary of our decisions

1.4. We have decided to fund five Projects under the ‘supporting a just energy transition’ Innovation Challenge.

1.5. In total, subject to the fulfilment of conditions, we are awarding £2,368,673 of SIF Funding to gas and electricity SIF Projects under the ‘supporting a just energy transition’ – round 2 Alpha Phase of the Innovation Challenge.

1.6. These funded Projects are:

- Hy-Fair – Alpha

¹³ For more info on the Innovation Challenge please see: <https://www.ofgem.gov.uk/publications/strategic-innovation-fund-round-two-innovation-challenges>

- VIVID - Vulnerability Identification Via informative Data
- Net Zero Terrace
- SHIELD - Smart Heat and Intelligent Energy in Low-Income Districts
- Guidelight

Table 3: Summary of funded Projects - Innovation Challenge: supporting a just energy transition

Total number of Projects funded:	5
Gas Projects funded:	1
Gas Projects total funding:	£463,201.00
Electricity Projects funded:	4
Electricity Projects total funding:	£1,905,472.00
Total SIF Funding awarded (£):	£2,368,673.00

1.7. We have set out our assessment of individual Projects and our decisions in Annex 1.

2. Decision on Innovation Challenge: Preparing for a Net Zero Power System

Section Summary

This chapter contains Ofgem’s decision on Applications in response to the ‘preparing for a net zero power system’ Innovation Challenge. We have decided to fund six Projects, with a total of £2,201,624 of SIF Funding being distributed. This consists of two gas Projects and four electricity Projects.

Update on the Innovation Challenge

2.1. This Alpha Phase for round 2 is a continuation of the ‘preparing for a net zero power system’ Innovation Challenge launched in May 2022 and for which round 2 Discovery Phase Projects were completed at the end of June 2023.

2.2. A total of seven proposals were submitted to UKRI through the IFS portal in relation to this challenge for the Alpha Phase by the closing deadline of 5 July 2023.

2.3. Further information on the ‘preparing for a net zero power system’ Innovation Challenge for the Alpha Phase of round 2 can be found on the IFS portal and in the Innovation Challenge brief.¹⁴

Summary of our decisions

2.4. We have decided to fund six Projects under the ‘preparing for a net zero power system’ Innovation Challenge.

2.5. In total, subject to the fulfilment of conditions, we are awarding £2,201,624 of SIF Funding to gas and electricity SIF Projects under the ‘preparing for a net zero power system’ – round 2 Alpha Phase of the Innovation Challenge.

2.6. These funded Projects are:

¹⁴ For more info on the Innovation Challenge please see: <https://www.ofgem.gov.uk/publications/strategic-innovation-fund-round-two-innovation-challenges>

- INSIGHT
- HyNTS Waste Heat Recovery for Electrolysis
- HyNTS Hybrid Storage
- Artificial Forecasting
- Flexible Queue Management (Alpha)
- Powering Wales Renewably

Table 4: Summary of funded Projects - Innovation Challenge: preparing for a net zero power system

Total number of Projects funded:	6
Gas Projects funded:	2
Gas Projects total funding:	£762,101.00
Electricity Projects funded:	4
Electricity Projects total funding:	£1,439,523.00
Total SIF Funding awarded (£):	£2,201,624.00

2.7. We have set out our assessment of individual Projects and our decisions in Annex 2.

3. Decision on Innovation Challenge: Improving Energy System Resilience and Robustness

Section Summary

This chapter contains Ofgem’s decision on Applications in response to the ‘improving energy system resilience and robustness’ Innovation Challenge. We have decided to fund 14 Projects, with a total of £6,329,030 of SIF Funding being distributed. This consists of three gas Projects and 11 electricity Projects.

Update on the Innovation Challenge

3.1. This Alpha Phase for round 2 is a continuation of the ‘improving energy system resilience and robustness’ Innovation Challenge launched in May 2022 and for which round 2 Discovery Phase Projects were completed at the end of June 2023.

3.2. A total of 21 proposals were submitted to UKRI through the IFS portal in relation to this challenge for the Alpha Phase by the closing deadline of 5 July 2023.

3.3. Further information on the ‘preparing for a net zero power system’ Innovation Challenge for the Alpha Phase of round 2 can be found on the IFS portal and in the Innovation Challenge brief.¹⁵

Summary of our decisions

3.4. We have decided to fund 14 Projects under the ‘improving energy system resilience and robustness’ Innovation Challenge.

3.5. In total, subject to the fulfilment of conditions, we are awarding £6,329,030 of SIF Funding to gas and electricity SIF Projects under the ‘improving energy system resilience and robustness’ – round 2 Alpha Phase of the Innovation Challenge.

3.6. These funded Projects are:

- Scenarios for Extreme Events

¹⁵ For more info on the Innovation Challenge please see: <https://www.ofgem.gov.uk/publications/strategic-innovation-fund-round-two-innovation-challenges>

- SIF Black start Demonstrator from offshore wind (SIF BLADE)
- Hydrogen Cost Reduction (HyCoRe)
- REACT
- NIMBUS
- Digital Inspector
- NextGen Electrolysis – Wastewater to Green Hydrogen
- Whole Energy System Resilience Vulnerability Assessment (WELLNESS)
- SF6 Whole Life Strategy
- CommsConnect
- Connectrolyser
- CReDo+: Climate Resilience Demonstrator (extension to new climate risks)
- Trinity
- D-Suite

Table 5: Summary of funded Projects - Innovation Challenge: improving energy system resilience and robustness

Total number of Projects funded:	14
Gas Projects funded:	3
Gas Projects total funding:	£1,105,401.00
Electricity Projects funded:	11
Electricity Projects total funding:	£5,223,629.40
Total SIF Funding awarded (£):	£6,329,030.40

3.7. We have set out our assessment of individual Projects and our decisions in Annex 3.

4. Decision on Innovation Challenge: Accelerating Decarbonisation of Major Energy Demands Projects

Section Summary

This chapter contains Ofgem’s decision on Applications in response to the ‘accelerating decarbonisation of major energy demands’ Innovation Challenge. We have decided to fund 11 Projects, with a total of £5,191,977 of SIF Funding being distributed. This consists of zero gas Projects and 11 electricity Projects.

Update on the Innovation Challenge

4.1. This Alpha Phase for round 2 is a continuation of the ‘accelerating decarbonisation of major energy demands’ Innovation Challenge launched in May 2022 and for which round 2 Discovery Phase Projects were completed at the end of June 2023.

4.2. A total of 16 proposals were submitted to UKRI through the IFS portal in relation to this challenge for the Alpha Phase by the closing deadline of 5 July 2023.

4.3. Further information on the ‘accelerating decarbonisation of major energy demands’ Innovation Challenge for the Alpha Phase of round 2 can be found on the IFS portal and in the Innovation Challenge brief.¹⁶

Summary of our decisions

4.4. We have decided to fund 11 Projects under the ‘accelerating decarbonisation of major energy demands’ Innovation Challenge.

4.5. In total, subject to the fulfilment of conditions, we are awarding £5,191,977 of SIF Funding to gas and electricity SIF Projects under the ‘accelerating decarbonisation of major energy demands’ – round 2 Alpha Phase of the Innovation Challenge.

4.6. These funded Projects are:

- Full Circle

¹⁶ For more info on the Innovation Challenge please see: <https://www.ofgem.gov.uk/publications/strategic-innovation-fund-round-two-innovation-challenges>

- Planning Regional Infrastructure in a Digital Environment (PRIDE)
- LEO-N
- Heatropolis
- Heat Risers
- Inform
- Park & Flex
- Indus
- Lightspeed
- RetroMeter
- Watt Heat

Table 6 Summary of funded Projects - Innovation Challenge: accelerating decarbonisation of major energy demands

Total number of Projects funded:	11
Gas Projects funded:	0
Gas Projects total funding:	0
Electricity Projects funded:	11
Electricity Projects total funding:	£5,191,977.00
Total SIF Funding awarded (£):	£5,191,977.00

4.7. We have set out our assessment of individual Projects and our decisions in Annex 4.

5. Next steps

Funding of selected Projects

5.1. At the same time as issuing this decision, Ofgem is issuing the SIF Project Directions that Projects have accepted for the round 2 Alpha Phase and which include the terms that the Funding Party has to comply with as a condition of receiving SIF Funding.

5.2. Ofgem will shortly issue a SIF Funding Direction to specify the amount of money to be recovered from network customers, through their network charges, to fund the Eligible SIF Projects.

5.3. The expectation is for funded Projects to start on 1 October 2023, in accordance with the SIF Governance Document, its SIF Project Direction, and Innovation Challenge-specific requirements.

Monitoring and evaluation of Projects

5.4. All Projects receiving SIF Funding will be subject to review and, for this purpose, be allocated a monitoring officer who will be employed by UKRI.

5.5. During Project delivery, Ofgem, with the assistance of information gathered by the monitoring officer, will monitor Projects. The monitoring officer will review each Project's progress against the scope, timeline, deliverables, milestones, and budget agreed in the SIF Project Direction. Monitoring will support the identification of potential problems, and the assessment of whether Projects have met the conditions attached to progression to the next Project Phase. For further details on Project monitoring, see chapter 6 of the SIF Governance Document.

Future phases of Innovation Challenge

A timeline detailing how funded Projects will move through the SIF process is published in Table 9 below.

Table 7: Timeline for Round 1 Innovation Challenge

Round	Date	Item
Round 2	1 October 2023	Round 2 Alpha Phase begin
Round 2	31 March 2024	Round 2 Alpha Phase end
Round 2	Fall 2023	Round 2 Beta Phase Application open
Round 2	Spring 2024	Round 2 Beta Phase Application close

Round 2	Late summer / early Fall 2024	Round 2 Beta Phase begin
Round 3	September 2023	Round 3 Discovery Phase Application open
Round 3	November 2023	Round 3 Discovery Phase Application close
Round 3	March 2024	Round 3 Discovery Phase begin
Round 3	May 2024	Round 3 Discovery Phase end

Annex 1: Application assessment - Innovation Challenge: accelerating decarbonisation of major demands

Chapter 1 of this document provides detail about the scope of the Innovation Challenge: accelerating decarbonisation of major demands, as well as summarising the total number of Projects funded and total value of SIF Funding awarded for the Alpha Phase of round 1.

This annex details our assessment and decisions on Applications submitted in response to that Innovation Challenge. Our assessment of each Project is set out within:

- Pages 25 – 39 set out our assessment of each gas Project that has not been selected for funding, together with our decision. No gas Projects which submitted an Application to this Innovation Challenge was selected for funding.
- Pages 39 – 85 set out our assessment of each electricity Project that has been selected for funding, together with our decision.
- Pages 85 – 94 set out our assessment of each electricity Project that has not been selected for funding, together with our decision.

Gas Projects not selected for funding

Carnot Gas Plant - Alpha

Table 8: Project Costs

Cost type	Cost
Total eligible costs	£353,433.00
Total contribution	£54,073.00
Total SIF Funding requested	£299,360.00

Project description

The project is to develop the technical design for large scale energy storage and high efficiency gas use via Carnot Gas Plant, this will be integrated into a heat network to provide cross vector flexibility. Project aims to increase the energy efficiency and decarbonise flexible export via a novel Carnot battery coupled with a heat network. Flexibility provided by multiple modes of operation and improved efficiency helps reduce costs of connecting and operating decarbonised heat. The technology will support the wider grid by increasing the amount of flexibility by importing and exporting power depending on the requirements of the grid.

Summary of Expert Assessors' feedback

The Alpha Phase is interpreted to be focussed on developing a design for the gas turbine. The actual activities relating to heat decarbonisation within the Alpha Phase activities and deliverables does not seem to be material to the Alpha Phase activities. Although a narrative was provided for how system deployments of this solution could be used to decarbonise heat, the Project does not seem to be geared towards the Carnot turbine design.

The was reflected in the interview presentation, which was very technically focussed, as greater value could have been demonstrated with a focus on and articulation of the system benefits.

The assessors also had significant concerns that turbine manufacturers are not well engaged in the Project, and have shown relatively little interest in utilising and supporting the development of the gas turbine.

The scoping of the Project is currently focussed primarily on the engineering design, rather than capitalising on system integration to deliver benefits to energy network consumers. This was viewed by Expert Assessors as something that is more suitable to be delivered by private sector research and development investments, with involvement from the gas turbine manufacturers. A suitable SIF Project scope in future would give far more heavily on the system integration design, once the technical feasibility of the asset is demonstrated.

Overall, the Expert Assessors did not consider the Project to have met all the Eligibility Criteria and therefore have not recommended the Project be considered for SIF Funding.

Ofgem funding decision: SIF Funding not approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have addressed the Innovation Challenge, as its problem statement is focused on a cost-effective integration of flexible storage assets alongside heat decarbonisation, contributing to an efficient energy system design. The Project's innovative approach, employing Carnot turbine technology, is notable. This technology not only lowers CO₂ emissions but also channels waste heat into local heat distribution networks, presenting dual benefits in emissions reduction and heat utilisation.

However, we note that the primary focus of the Project leans more towards the technical design and demonstration of the turbine's performance. If the final turbine design is successfully deployed and paired with heat networks while offering system support services, it would directly address the Innovation Challenge. While we consider this to be the focus of the Alpha Phase based on what the Project has outlined, clearer articulation of this approach would have strengthened the Application.

Consequently, we consider the Project to have met this Eligibility Criteria.

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).

We note that the Project's scope has the potential to deliver efficient system integration of innovative net zero peaking plant designs, thereby enhancing the overall efficiency of electricity supply. Such integration could benefit electricity consumers and heat network customers alike.

Additionally, we recognize the Project's capability to offer net benefits to both gas and electricity consumers. This stems from anticipated reductions in electricity supply costs and the parallel decrease in gas consumption or heating costs, made possible by waste heat recovery and distribution.

Nevertheless, we note the concerns from the assessors about the potential emphasis on reducing individual site owners' gas-operated engine expenses. We agree and encourage the Project to investigate the distinction between the specific benefits of the heat network application and other methods of thermal storage utilizing low-cost electricity. A more comprehensive exploration of the heat network's advantages in comparison to other thermal storage solutions could provide a clear articulation of the benefits for consumers.

Overall, we consider the Project to have identified a clear net benefit to consumers but we note that this articulation could have been clearer.

Eligibility Criterion 3: Projects must involve network innovation.

We do not consider the Project to have met this Eligibility Criteria due to its primary emphasis on plant unit development, without a strong integration of innovative, network-centric approaches to system support through peaking plant load. The sector coupling aspects set out by the Project don't appear to be directly related to the operation of the regulated components of energy networks.

Like the assessors, we consider a key concern to be the Project's main focus on individual site applications of on-site generation. Although there is potential for cost reductions within the network and for its customers, the dominant emphasis on site-level generation means the majority of benefits may be accrued by those stakeholders during operation, rather than being channelled back to energy

network consumers. Without a clear direction towards network innovation in the Project's scope, we are not confident that the Project involves a sufficient level of network innovation within its objectives.

As a result, we do not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We acknowledge that the Project does not undermine the development of competitive markets. In fact, we consider the Project's approach to hold potential in developing investment opportunities that could pave the way for replication by other entities through knowledge sharing, even if this potential is more implied than directly articulated.

We see the Project's impact on competitive markets as beneficial, given its dedication to crafting a specialized solution that focuses on reducing emissions related to peak electricity demand within the electricity networks. The prospect of commercializing waste heat transfer into local district heating markets is apparent, though we believe this aspect could have been more emphasized in the Application.

However, we do highlight the importance of the Project evaluating potential alternative solutions in their cost-benefit analysis. As the energy landscape evolves, the rise of commercial thermal storage providers could influence market dynamics, underscoring the need for consistent monitoring of these changes.

Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We recognize the Project's innovative nature, especially the decoupling of the gas compression process from turbine generation, a feature that hasn't been commercially actualized yet. The introduction of the Carnot cycle further emphasizes the Project's novel approach. However, the Project's distinction as being the first of its kind in providing net zero peaking capability while simultaneously providing customer benefits through heat decarbonisation is less distinct.

Being an innovative Project, it inherently carries a certain level of risk, predominantly from the novel application of the Carnot cycle technology to a new scenario. While the integration of waste heat with heat networks has been previously investigated, we note the Alpha Phase's emphasis on the turbine design over system integration benefits to be where the innovation and novelty lay.

In summary, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We concur with the Expert Assessors that the Project has not sufficiently demonstrated a broad range of stakeholder participation. The lack of support or active interest from gas turbine manufacturers and operation companies raises concerns. Furthermore, the disproportionate presence of technology providers within the consortium during the assessment process and the limited involvement of the gas network, combined with the absence of an academic partner in design development, further highlights the shortfall in the range of stakeholders.

While we acknowledge the Project's planned dissemination activities and the intent for regular consultations with key industry organizations, which suggests an intent to align with industry needs, the lack of active participation and ownership by the complete consortium is notable at this stage of the Project.

As a result, we do not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We consider the Project to have met this Eligibility Criteria. We agree with the Expert Assessors that the Project aligns well with the target aims of decarbonisation and system cost reduction, which provides confidence that the Project is providing value for money. We also consider the Project's overall costs to be reasonable, thereby providing confidence that the Project is costed competitively.

We do however note the concern from the assessors that the much of the potential benefits from the Project will likely be for the technology developers, rather than

consumers. We also note that the activities set out in the Application did not entirely align with what was discussed during the interview, which could have been more clearly articulated.

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.

We agree with the Expert Assessors and do not consider the Project to have met this Eligibility Criteria as it does not provide confidence in its likely progression in the Alpha Phase.

While we note the methodology is strong, our concerns align with the assessors around the scope of the work. The Project proposes the delivery of full technical design within the Alpha Phase, which raises questions around the likelihood of this given the work required for heat network and system integration. We note the feedback from the assessors that they considered the scope of work for the Alpha Phase to exceed what is likely possible.

As part of this, we also agree with the assessors that the Project did not sufficiently communicate a plan for the development of system integration benefits and costs. The analysis provided in the Application lacked sufficient comparisons to other counterfactual approaches which could potentially offer more insight or a better path forward. This did not provide confidence in the Project’s capability of progressing in the Alpha Phase as it did not provide confidence in the proposed solution.

While we consider the Project to have presented a clear methodology with a reputable project management approach, we consider the scope of the planned activities and the lack of a clear pathway against counterfactuals to not give confidence in the Project’s capability of progressing in the Alpha Phase.

Net Zero Community Energy Hubs - Alpha

Table 9: Project Costs

Cost type	Cost
Total eligible costs	£552,215.00
Total contribution	£71,503.00

Total SIF Funding requested	£480,712.00
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Project description

The project will develop the technical design for large scale energy storage and high efficiency gas use via Carnot Gas Plant, this will be integrated into a heat network to provide cross vector flexibility. The aim is to increase the energy efficiency and decarbonise flexible export via a novel Carnot battery coupled with a heat network. Flexibility provided by multiple modes of operation and improved efficiency helps reduce costs of connecting and operating decarbonised heat. The technology will support the wider grid by increasing the amount of flexibility by importing and exporting power depending on the requirements of the grid.

Summary of Expert Assessors' feedback

The Expert Assessors did not recommend this Project be considered for SIF Funding because it did not meet all of the Eligibility Criteria. Although the Project was aligned with the aims of the Innovation Challenge, it was considered that the proposed solution was lacking a discernible focus. The evidence provided to support the business case was lacking, and there were technical uncertainties including role of hydrogen (in respect of the solution) and the role of the transmission system operator in respect of roll out. The approach of the Project therefore was not considered to demonstrate a potential to deliver a clear net benefit to consumers.

Additionally, the Expert Assessors considered the Project to lack involvement from key stakeholders, particularly transmission system operators and consumer representation. The assessors considered this lack of key stakeholder involvement to raise questions about the deliverability and effectiveness of the Project. Finally, while the Project plan was considered sensible in respect of its work packages at a surface level, the Expert Assessors were not confident there were clear outputs. The assessors also noted that the value proposition was unclear. Overall, the Expert Assessors did not recommend this Project be considered for SIF Funding.

Ofgem funding decision: SIF Funding not approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have met this Eligibility Criteria because it focuses on demonstrating alternative flexible heat network opportunities in less densely populated areas. The Project aims to create a system that will optimize the availability of decarbonized heat, aligning closely with the aims of the Innovation Challenge. As a result, we consider the Project to have addressed the Innovation Challenge and therefore to have met this Eligibility Criteria.

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).

The Project lacks a clear identification of potential net benefits to consumers. The Project's approach involves retrofitting using double network charging, resulting in high capital expenditure without sufficient justification in the Application. The complexity of the Project also raises concerns about its deliverability and the likelihood of achieving the stated net benefits. Furthermore, the Project's aims were not clearly focused and the wider impacts on consumers have not been fully developed. Therefore, we do not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We consider the Project to have met this Eligibility Criteria due to its focus on producing evidence for the viability of electric heat networks in communities and developing the supporting tools. While the majority of the innovation appears to lie beyond the network in local control systems and operations, the potential for broader system impacts, including guiding infrastructure development and influencing loads, indicates network innovation. Therefore, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We consider the Project to have met this Eligibility Criteria because it does not undermine the development of competitive markets. The outputs of the Project are considered to be replicable by other commercial entities, should they prove successful. We recognise that this replicability has the potential to stimulate market competition. Additionally, the dissemination of the Project's findings would make the solution widely available, further contributing to competition in the sector. Therefore, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

The Project's novel technological approach involves the innovative use of larger heat pumps combined with solid-state heat storage to support high-capacity heat provisions. We also recognise that the Project incorporates a range of uncertainties and interdependencies, which have been adequately captured in the risk register and lend the Project an element of risk. Therefore, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to lack key stakeholders in the consortium and to also lack a sufficient level of consumer engagement based on the Project's proposed solution. The Project lacks sufficient transmission involvement, and its interaction with the system operator is not sufficiently explained for us to have confidence that the Project includes sufficient participation from these stakeholders.

Furthermore, we agree with the assessors the absence of consumer representatives or meaningful engagement in the Project raises fairly significant concerns, especially given the critical nature of end-user uptake for the Project. We also note that the needs of potential users and the aims of the Project are only identified at a high level, without detailed alignment with the consortium's capabilities. As a result, we do not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We do not consider the Project to have met this Eligibility Criteria due to concerns about its value for money and cost competitiveness. The level of resource required for the Alpha Phase by some of the Project Partners is not sufficiently justified, resulting in higher-than-anticipated costs without sufficient justification.

Additionally, the current benefits case does not support a claim of value for money, and the evidence provided for the Project's cost-benefit analysis was considered to lack sufficient detail for us to have confidence in its value for money. For these reasons, we do not consider the Project to have met this Eligibility Criteria.

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.

We do not consider the Project to have met this Eligibility Criterion due to concerns about the robustness of its methodology and its capability to progress in a timely manner. We agree with the assessors and consider the Project to lack a focused direction. We also consider the activities set out for the Alpha Phase to be quite ambitious, especially given the multiple areas it proposes to explore within a six-month timeframe. This lack of focus and overly ambitious scope raised significant concern about the Project's ability to progress as planned and the Project did not provide sufficiently clarity in its accompanying documentation for this concern to be addressed. Therefore, we do not consider the Project to have met this Eligibility Criteria.

Integrated Hydrogen Transport Hubs

Table 10: Project Costs

Cost type	Cost
Total eligible costs	£496,559.00
Total contribution	£62,225.00
Total SIF Funding requested	£496,559.00

Project description

IHTH will reduce carbon emissions and benefit customers by co-locating electrolytic hydrogen refuelling stations and heat demand. By maximising the utilisation of all product streams from electrolysis (hydrogen, heat, oxygen), the LCOH can be minimised for transport customers across the GB network.

Transportation and residential sectors are difficult to decarbonise, with IHTH offering a solution where both sectors can be decarbonised simultaneously. At a minimum, the system represents a configuration where heat is captured from the electrolyser stack and utilised in heat networks. Amongst additional benefits, hubs could also eliminate grid reinforcement costs, reduce customer bills, and create local jobs.

Summary of Expert Assessors' feedback

The Expert Assessors did not recommend this Project be considered for SIF Funding because they did not consider it to have met all the Eligibility Criteria.

They considered this cross sector approach by the Project to have addressed the Innovation Challenge because it aims to develop a solution that will manage integrated energy demands across heat and transport. This solution was considered to have potential to deliver benefits to consumers in respect of cost savings, mainly derived from reduction in the cost of heat and have the potential to reduce the need for investment in geographical expansion and capacity increases, should the Project be successful and scaled. However, the assessors also noted that the potential benefits to consumers could have been more clearly articulated considering the dependency on the benefits on scaling the proposed solution.

The Project was considered to have both commercial and technological elements to the innovation and was considered to involve network innovation. The Expert Assessors commented on the Project team and stakeholders, noting that while the Project was considered to have participation from a sufficient range of stakeholders for the activities set out, there could have been stronger demonstration of involvement from the Project team as a whole, particularly by the local authority and heat network operator.

The Expert Assessors also considered the Project's costs to be high for the activities set out and noted concerns around the day rates and overall costs of the

some of the Project Partners. Additionally, it was noted that the scalability of the solution and the uncertainties around the potential for implementing the proposed solution were not sufficiently incorporated into the contributions of the Funding Party and the Project Partner, thereby limiting the assessors' confidence that the costs were reasonable for the activities set out. The Expert Assessors considered that, as a result of this, the Project did not demonstrate that it was costed competitively and delivering value for money. The assessors therefore did not consider it to have met Eligibility Criteria 7.

Ofgem funding decision: SIF Funding not approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have met this Eligibility Criteria because its technical approach is novel and directly addresses the Innovation Challenge. By aiming to develop a solution that manages integrated energy demands across heat and transport, the Project aligns well with the aims of the Innovation Challenge. The demand-side solution also holds potential for addressing network needs in areas like provision of flexibility and management of losses. As a result, we consider the Project to have met this Eligibility Criteria.

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).

The Project has clearly identified the potential to deliver a net benefit to both electricity and gas consumers. This was primarily identified to be in financial benefits, through its proposal to deliver heating at a lower cost and offer indirect financial benefits by reducing the costs of network reinforcement. We also recognise the potential for environmental benefits from carbon savings.

We also note the feedback from the Expert Assessors that these benefits are caveated with the Project's proposed solution being implemented widescale. While we note this feedback and agree that clearer benefits linked directly to the Project's core activities and a tiered outline of the benefits at deployment would have strengthened the Application, we nonetheless consider the Project to have clearly identified potential to deliver a net benefit to consumers. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

The Project involves network innovation because its aims to develop a solution that could reduce the need for network reinforcements. This would be achieved both directly, by managing loads on the networks, and indirectly, by providing additional flexibility to the network. The innovative aspect lies in harnessing demand nodes and linking them with heat networks, which goes beyond the business-as-usual approach in network management. While we note the feedback from the Expert Assessors that inclusion of renewable generation in the Project could have strengthened its involvement of network innovation, we consider the Project's overall approach as set out to involve network innovation. As such, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

The Project does not undermine the development of competitive markets. We also do not consider the Project's focus area for its proposed solution to have the potential to undermine the development of competitive markets. Furthermore, like the Expert Assessors, we note positively the Project's plan to make all its findings and data publicly available. Together, these provide confidence that the Project's proposed solution will not undermine the development of competitive markets as other solutions could be developed, potentially using the data generated and disseminated by the Project. Therefore, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We consider the Project's proposed activities for the Alpha Phase to be innovative and novel with elements of risk. The Project's approach is ambitious, with an innovative and novel aim to integrate various components within the hubs as well as multiple revenue streams. This demonstrates an innovative and novel approach by the Project. The Project also incorporates an element of risk, as there are uncertainties surrounding the policy and regulatory landscape for hydrogen and heat networks. Furthermore, the low commercial readiness level of the proposed solution adds an additional layer of risk. Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

The Project includes participation from a sufficient range of stakeholders for the activities set out for the Alpha Phase. We note positively that the Project consortium includes a diverse set of stakeholders which encompasses gas, electricity and heat network operators, technical and commercial solution design experts, as well as local authorities. This wide variety of stakeholders in the Project provides assurance that the Project is well-rounded and has the necessary expertise and resources involved. Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We do not consider the Project to have met this Eligibility Criteria. Similar to the Expert Assessors, there are several areas where the Project did not provide sufficient clarity or justification for the Eligibility Criteria to be met.

First, we note the feedback from the Expert Assessors that the Project includes day rates which are higher than industry norms and that one Project Partner with these high day rates would receive the majority of the SIF Funding requested. The Project does not provide sufficient justification as to why these high day rates are required for the Project and it therefore does not provide confidence that the Project is providing value for money or is costed competitively. Furthermore, we also note that the Project's low technology readiness and large potential benefits for one Project Partner is not sufficiently reflected in the contributions from the

Project team, which also does not provide confidence that the Project’s costs are costed competitively. A greater reflection of the risks and potential benefits in the contribution from this Project Partner would have strengthened the Application.

Second, we agree with the feedback from the Expert Assessors that the lack of details for scalability of the proposed solution, despite the net benefits outlined relying on widescale deployment, did not provide sufficient confidence that the Project’s activities were reasonably costed.

As a result, we do not consider the Project to have met this Eligibility Criteria.

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.

We consider the Project to have presented a well thought through and robust methodology which gives confidence in its timely progression in the Alpha Phase. We note positively the inclusion of a proven project management approach and a detailed project plan and Gantt chart, along with well-defined work packages that highlight interdependencies. The risk register and identified mitigation options are sufficiently clear for the Alpha Phase. As a result, we consider the Project to have met this Eligibility Criteria.

Electricity Projects selected for funding

Planning Regional Infrastructure in a Digital Environment (PRIDE) (Alpha phase)

Table 11: Project Costs

Cost type	Cost
Total eligible costs	£558,491.00
Total contribution	£58,617.00
Total SIF Funding requested	£499,874.00

Project description

Planning Regional Infrastructure in a Digital Environment (PRIDE) Alpha phase, aims to develop both technical and organisational solutions to integrated planning and connection of decarbonised heat and transport demand, that reduces overall

cost and timescales. The project focusses on using data and digital demand planning, across multiple levels of the energy system, to facilitate, manage and integrate multiple demands across heat, transport and energy demand reduction. PRIDE will produce a whole systems digital planning tool and regional governance structure to support local authorities to produce more Local Area Energy Plans at lower cost, and that serve energy network planning needs.

Summary of Expert Assessors' feedback

Overall, the Expert Assessors recommended this Project be considered for SIF Funding. The Expert Assessors considered the Project to have met all the Eligibility Criteria and they considered it to have the potential contribute to the efficient utilisation of local area plans and local decarbonisation efforts, directly aligning with the aims of the Innovation Challenge.

The assessors considered the Project to have identified a critical weakness with local area plans, and the lack of efficiencies with the usage of datasets therein. The Project has a clear path towards solving this problem with the digital twin solution proposed. While the benefits portion of the Application could have been more developed, and the Application could have elaborated on different use cases, there are clear benefits evident for consumers, which the assessors also considered to support the value for money being offered by the Project.

There is demonstration of collaboration between private and public sector and strong indication of stakeholder engagement. Additionally, while there was not a clear route to market at this stage, the Project team have addressed how this will form part of Alpha Phase delivery and already demonstrate an understanding of the potential barriers to wider roll out across other licence areas, demonstrating a genuine vision to other local authorities benefiting from this solution. This gave the assessors confidence in its likelihood of progression in a timely manner.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have met this Eligibility Criteria because it addresses the Innovation Challenge by potentially enabling better utilization of Local Area Energy Plans. This, in turn, facilitates place-based decarbonisation, which is in alignment with one of the aims of the Innovation Challenge. Furthermore, the potential to reduce speculation on demand requirements and enhance solution location planning seeks to improve investment decision-making, further enabling decarbonisation. Therefore, we consider the Project to have addressed the Innovation Challenge and therefore consider it to have met this Eligibility Criteria.

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).

We consider the Project to have met this Eligibility Criteria because it has identified a potential to deliver net benefits to consumers by utilizing a digital solution to optimize local area plans. This approach is expected to enhance decision-making in local areas and further facilitate the successful implementation of broader decarbonisation projects. This could lead to financial benefits for consumers via cost savings and social benefits with more informed and resilient network planning.

However, we also note and agree with the feedback from the assessors that more detailed insights regarding the specific benefits it aims to deliver and the precise scenarios where these benefits will be realized would have strengthened the Application. As part of this, we note the Project-specific condition recommended by the assessors.

Overall, however, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We consider the Project to have met this Eligibility Criteria due to its emphasis on Local Area Energy Planning (LAEP) and the incorporation of a digital solution. The enhanced efficiency in using LAEPs has the potential to deepen the understanding of network capacity and lead to more optimised network planning incorporating both new and existing infrastructure. Furthermore, the Project's proposed solution,

which aims to fortify collaboration between the private and public sectors in delivering decarbonisation solutions and preparing the market for investments, is indicative of network innovation that surpasses traditional business-as-usual methods. Therefore, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We consider the Project to have met this Eligibility Criteria as it does not hinder the evolution of competitive markets. While the Project has detailed its plans for dissemination activities during the Alpha Phase, we concur that offering clearer insights into the Project's activities could have further enhanced the Application. We also recognize and appreciate the Project's emphasis on incorporating competitive elements, which promotes the development of competitive markets for its suggested solution. Hence, we determine that the Project has met the Eligibility Criteria 4.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We consider the Project to have met this Eligibility Criteria due to its innovative, novel, and ambitious approach. The elements of risk associated with the Project stem partly from its objective of being adopted by various local areas, each presenting unique licence and data governance challenges. Additionally, the concept of digital twinning combined with the integration of LAEPs, being relatively new to the market, underscores the inherent innovation within the Project. The collaborative approach with the public sector also marks a novel aspect of the proposed solution.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to have met this Eligibility Criteria given its evident engagement with customer representatives and network companies which aligns with the Alpha Phase activities set out. Beyond this, the Project has showcased interactions with a broader spectrum of the energy sector, such as associations with HS2 and EV chargers, and also stakeholders from the water industry. We consider this level of engagement to be appropriate for the outlined Alpha Phase

activities. While we acknowledge that the depth of stakeholder engagement could be enriched by incorporating more activities that focus on understanding other and existing work in this realm, we still consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We consider the Project to have met this Eligibility Criteria. The overall cost of the Project appears reasonable given the activities planned and aligns with the intricacy of the digital solution that is slated for development. We commend the Project Partners for their decision to incorporate day rates that are lower than the typical rates, instilling confidence in the competitive costing of the Project.

We do concur with the observation from the assessors that the Project could have earmarked a more substantial portion of its budget for stakeholder engagement. Such an allocation would not only have been beneficial in integrating existing works in this domain but would also potentially enhance the value for money presented by the Project. However, overall, we consider the Project to have met this Eligibility Criteria.

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.

We consider the Project to have met this Eligibility Criteria. The governance and planning associated with the Project present a thorough and robust approach to project management and execution. We take note of the Project team's decision to employ the agile methodology for delivery, providing confidence in the Project's ability to advance promptly. The synergy between the Project team and the delineated activities further strengthens our belief in the Project's capability to progress efficiently during the Alpha Phase. As a result, we consider the Project to have met this Eligibility Criteria.

Full Circle

Table 12: Project Costs

Cost type	Cost
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Total eligible costs	£467,199.00
Total contribution	£50,388.00
Total SIF Funding requested	£416,811.00

Project description

The Full Circle project is changing the way we heat our homes and businesses. By recovering waste heat from distribution network transformers, we can create a more efficient and sustainable heating system that is accessible to everyone.

This innovative project is developing a new industry-leading framework that will make it easier for heat network developers, property developers, and Energy Service Companies (ESCOs) to make use of this untapped resource of waste heat from transformers. This new framework will provide the certainty and support that businesses need to invest in waste heat recovery to improve efficiency of heat networks.

Summary of Expert Assessors' feedback

The Project was considered by the Expert Assessors to have met each of the Eligibility Criteria, and they have therefore recommended it be considered for SIF Funding. They considered the Project's focus to be directly aligned with the Innovation Challenge, and noted that the Project's approach while conceptually simple, demonstrates an innovative and novel approach to network innovation. While they noted that a clearer explanation of the innovation route and approach by the Project would have strengthened the Application, they considered it to have met the Eligibility Criteria. They also noted positively the wide involvement of stakeholders, and when considered with the Project's plan, had confidence that the Project would be capable of progressing in a timely manner. Finally, they considered the Project to demonstrate value for money with its open procurement approach and considered it to be costed competitively against industry norms.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have met this Eligibility Criteria because it addresses the Innovation Challenge through its innovative approach of capturing waste heat from distribution transformers. The introduction of a waste heat recovery system not only optimizes an often overlooked energy source but also potentially extends the lifetime of transformers. This approach directly aligns with the Innovation Challenge's aim of demonstrating coordination between energy efficiency and local energy planning activities to both reduce costs and enhance consumer experience for decarbonisation. We therefore consider the Project to have addressed the Innovation Challenge and consider it to have met this Eligibility Criteria.

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).

We consider the Project to have met this Eligibility Criteria due to its identification of potential net benefits for both gas and electricity consumers. At the core of this is the Project's use of waste heat recovery and distribution, which could offer heating solutions at a reduced cost to consumers. We recognize the potential of the Project to bring savings, both through decreased costs of delivered heat and possible reductions in Distribution Use of System charges, by utilizing increased transformer efficiency. We acknowledge the feedback from the assessors suggesting that the net benefit, as presented in the current model, could be more explicitly detailed in practice. Nonetheless, we consider the Project to have clearly identified the potential to deliver a net benefit to consumers and therefore consider it to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We note the Project's focus on novel methods within the energy networks, especially its exploration into harnessing waste heat produced by distribution transformers. By aiming to redirect this heat into local heat networks, the Project has the potential to enhance their efficiency and provide economic benefits. The

potential for DNOs to generate revenue and possibly extend the life of transformers due to reduced operating temperatures underscores its innovative approach.

The intertwined relationship proposed between District Heating Networks (DHNs) and electricity distribution networks is also noted positively as it could result in the optimisation of both entities' performance. We consider the Project's holistic approach, which delves into the synergies between DHNs and DNOs not extensively explored in GB, as a clear demonstration of network innovation. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We do not consider the Project to undermine the development of competitive markets. The Project's proposed solution is geared towards enhancing the efficiency of current network systems without hindering the progression of competitive markets. The primary objective is not the introduction of new technologies but rather the optimization of existing systems. Despite the emergence of external district heat solutions using varied technologies, we do not perceive the Project as a threat to their commercial viability. In fact, such initiatives might eventually become beneficiaries of the waste heat generated by this Project, thereby resulting in the development of new competitive markets. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We recognize the innovative and novel nature of the Project, particularly its approach to repurpose transformer losses by harnessing waste heat and integrating it into local district heating systems. This method, which does not require alterations to existing transformers and potentially extends their lifespan due to reduced operating temperatures, is innovative and novel for GB. While we are aware that similar initiatives have been undertaken internationally, the Project's focus within GB has the potential to inspire innovative collaborations between DNOs and ESCOs, thereby demonstrating its innovative and novel approach. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

The Project demonstrates proactive and diverse engagement with a broad spectrum of stakeholders for the Alpha Phase. The well-orchestrated dissemination events, which cater to a wide audience, ranging from local governing entities to property magnates, speak to its wide range of stakeholder involvement and the opportunity to involve additional stakeholders. We note positively the varied stakeholder composition, which leverages the expertise of local authorities, district heat network operators, and other participants equipped with the requisite skills for the Alpha Phase. As a result, we consider the Project to have participation from a sufficient range of stakeholders for the Alpha Phase activities. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

The Project's overall costs and projected benefits convincingly demonstrate value for money. Furthermore, we note that the costs associated with the Project Partners are suitably matched with the activities and are in line with industry standards, thereby providing confidence that the Project is costed competitively. We also recognize the Project's proposed value proposition in the balance between its funding requirements and the anticipated revenue channels, coupled with the extended lifespan of transformers. We therefore consider the Project to have met this Eligibility Criteria.

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.

The Project presents a well-planned and detail Project plan and accompanying documentation, particularly evident in the Gantt chart. This provides confidence in the Project's potential to progress in a timely manner in the Alpha Phase. With a solid foundation established during the Discovery Phase, the methodology presented is coherent and comprehensive, showcasing well-organized work package sequences and clear accountabilities. We therefore consider the Project to have met this Eligibility Criteria.

Local Energy Oxfordshire - Neighbourhoods (LEO-N)

Table 13: Project Costs

Cost type	Cost
Total eligible costs	£534,619.00
Total contribution	£53,460.00
Total SIF Funding requested	£481,159.00

Project description

Project Local Energy Oxfordshire - Neighbourhoods (LEO-N) addresses the accelerating decarbonisation of major energy demands challenge by developing an innovative approach to creating an enabling environment for homes, businesses and communities to transition to Net Zero, at pace and scale. Currently, there is no clear route to guide consumers, nor is there the infrastructure to support the transition at local level. Working with all the key actors, LEO-N will build on earlier local energy projects by adopting a systems innovation approach, to develop the tools, commercial arrangements and supporting local governance structures to drive the Net Zero transition at pace.

Summary of Expert Assessors' feedback

The Expert Assessors considered all the Eligibility Criteria to have been met and have recommended the Project be considered for SIF Funding. Overall, the Expert Assessors considered the Project and its 'system of systems' approach to have the potential to deliver additional locally embedded net zero flexibility services, which they considered to be directly aligned with the Innovation Challenge.

The Expert Assessors also noted positively how the Project builds upon key learnings from previous innovation projects, noting the network innovation element is clear. The Expert Assessors considered there to be clear potential net benefits to consumers identified through delivering a framework for better local energy management, particularly if the framework is able to be delivered on a national scale. They also noted that, should the proposed solution be scaled nationally, these benefits will be extend to a range of different types of consumer, including vulnerable consumers, small businesses and low income homes. The assessors also

considered the Project to have sufficient participation from stakeholders for the activities set out, noting positively the planned dissemination activities. They also considered the Project to provide value for money with its reasonable overall costs and to be costed competitively with day rates which were aligned with industry norms.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have met this Eligibility Criteria because it offers a comprehensive approach to delivering additional net zero flexibility services. The approach not only reaches out to less affluent households and small businesses, but also builds on the success of previous innovation projects. The Project provides a well-justified strategy for managing the increased energy demands that come with the rollout of distributed energy resources, aligning closely with one of the aims of the Innovation Challenge. Therefore, we consider the Project to have addressed the Innovation Challenge and consider it to have met this Eligibility Criteria.

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).

We consider the Project to have met this Eligibility Criteria because it has clearly identified the potential to deliver a net benefit to electricity consumers through the integration of flexibility. The approach taken by the Project could systemically deliver locally embedded flexibility, which is a key component of net zero transition. While we note the feedback from the assessors that there were concerns about the applicability of the Project's outputs to other regions, we consider these concerns to be mitigated by the Project's plan to engage follow-on regions as first followers and to further examine regional suitability during the Alpha Phase. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We consider the Project to have met this Eligibility Criteria because it involves network innovation through its examination of integrating FutureFit, Smart Community Energy System (SCES), and Local Net Zero Coordination (LNZC). These elements are aimed at optimizing the use of the network to deliver Net Zero goals both fairly and efficiently. The creation of a digital platform for better management of flexibility involves systems and network innovation beyond business-as-usual. This innovation is considered necessary for designing a residential decarbonization approach that takes into account network constraints. Therefore, we conclude that the Project has met Eligibility Criterion 3.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We consider the Project to have met this Eligibility Criteria because it aims to deliver a framework for improved local energy management without undermining the development of competitive markets. The framework is designed to be in line with existing legislation and regulation, and we do not consider it hinder future competitive markets from emerging. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We consider the Project to have met this Eligibility Criteria due to its innovative, novel, and risky nature. The Project involves multiple parallel workstreams, which present a level of risk but also the possibility of highly beneficial outcomes. Its focus on combining these workstream outputs in a way that has never been demonstrated before adds to its innovative and novel qualities.

Additionally, the Project has the potential to develop the groundwork for new processes and commercial models necessary for residential decarbonization, given network constraints. It also has the potential to offer planning models that could help Distribution Network Operators (DNOs) make strategic infrastructure upgrades. If successful, this could pave the way for wider rollouts of locally based flexibility projects and open new avenues for using locally generated energy to

alleviate local grid constraints. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to have met this Eligibility Criteria due to its inclusive approach to stakeholder participation. The Project includes a diverse set of participants who are actively involved in its activities, encompassing both the private and public sectors. Additionally, we note the Project's substantial plans for dissemination activities, which will help in bringing awareness to additional stakeholders about the proposed solution. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We consider the Project to have met this Eligibility Criteria because it demonstrates value for money and is costed competitively. The allocation of funds among the Project Partners is reasonable, and the day rates for activities are appropriately priced in comparison to industry standards. We also appreciate the Project team's clarification about spending in Project LEO, the precursor to this Project, which assures us that the activities are not duplicative and offer value for money. The Project's clear articulation of potential benefits further adds to our confidence that it represents good value for money.

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.

We consider the Project to have met this Eligibility Criteria due to its robust methodology and clear approach to Project management and governance. Despite the complexity of having several parallel workstreams in the Alpha Phase that need to converge by the end of the Project, we are confident that the delivery methodology is well-equipped to support this approach. Therefore, we conclude that the Project has met Eligibility Criterion 8.

Heatropolis

Table 14: Project Costs

Cost type	Cost
Total eligible costs	£537,089.00
Total contribution	£53,715.00
Total SIF Funding requested	£483,374.00

Project description

The operation of low carbon heat networks is poised to transform the way we heat our homes and buildings as we embrace less reliance on fossil fuels for heating. Today there is a disconnect between DNO planning and heat network design. Left unmanaged, this will affect the planning and operation of the electricity network, and ultimately be costly for consumers.

Heatropolis is a ground-breaking multi-stage framework, set to unlock better outcomes between heat and electricity networks. Intelligent heat network design and operation will deliver significant flexibility and electrical load reduction to lessen the need for costly reinforcement by DNOs.

Summary of Expert Assessors' feedback

The Project was considered to be a well thought through and planned Project which the assessors had confidence would be able to progress in a timely manner. The assessors also noted the wide variety of stakeholders in the Project team, bringing in diverse expertise and capabilities. The Project's costs were considered to be delivering value for and costed competitively, with clear potential net benefits for consumers also identified. The assessors considered the Project to be innovative and novel, and noted the clear network innovation in its proposed combined approach between electricity networks and district heating while managing peak heat demand.

Overall, the Expert Assessors considered the Project to have met each of the Eligibility Criteria and have recommended it be considered for the SIF Funding.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We note the feedback from the assessors regarding the Project's potential in showcasing reduced emissions from significant infrastructure developments in heat networks, especially with its pivotal design centred around the infrastructure venture at Kings Cross. The Project's intention to circumvent barriers to decarbonising district heat networks without a significant surge in the peak electrical load on the main network is considered aligned with the aims of the Innovation Challenge. Given this alignment, particularly in demonstrating coordination between flexibility and planning activities, we consider the Project to have met this Eligibility Criteria because it showcases ways to reduce costs and enhance consumer experience for decarbonisation.

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).

We observe that the Project's primary aim is to manage network loads in areas with prevalent constraints through the innovative control of the heat network. Such a strategy not only offers clear benefits to the consumer, especially when compared with the current reinforcement costs put forth by network stakeholders, but it also holds the potential for significant cost savings. We note positively the Project's clear identification of the possibility of curtailing carbon emissions and its estimation of a £35m of cost savings by 2050, which could then result in savings for electricity consumers via reduced standing charges. Therefore, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We recognize the Project's innovative endeavours in network development, especially with its central aim of creating a heat network in tandem with the electricity network at a significant infrastructure location. The ambition to craft a strategy that can be mirrored for subsequent infrastructure initiatives, allowing networks to manage load without over-dependency on infrastructural enlargement,

is particularly noteworthy. The emphasis on flexibility and replicability is indeed a strong indication of the Project's commitment to network innovation. Examining the unexplored domain of using machine learning to balance peak electrical loads arising from decarbonized district heating networks, especially to enhance demand response, is considered to demonstrate network innovation. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We consider the Project to be oriented towards creating outputs which aim at shaping commercial arrangements that are not just advantageous but are also designed to stimulate a competitive environment. Its commitment to extensively disseminating these arrangements the Project proposes developing gives us confidence that the competitive markets will be developed rather than undermined. Furthermore, we acknowledge the current absence of DSO services to encourage district heat network operators' adoption of smart optimization. The Project's emphasis might result in new service offerings addressing this need. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We recognize the Project's innovative and novel approach in proposing an innovative strategy to derive the essential technical and commercial solutions for a viable business case concerning heat networks. The system integration proposed is considered to demonstrate an innovative approach. Additionally, the inherent risks associated with the Project are evident given the current limited comprehension of the potential repercussions of decarbonised district heating networks on the electricity networks. This Project's proposed solution could further explore and shed more light on this aspect, which we note to be a part of its innovative and novel approach. Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

The Project includes participation from a diverse and appropriate range of stakeholders. Central to the Project are entities with relevant knowledge and expertise for the proposed activities, including a heat network optimization company and a heat system installer. This robust core is further enhanced with subcontractors tailored to the specific needs of the Project. Additionally, the planned engagement with the Camden Borough Council stands as a commendable initiative. Taking these facets into account, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

The Project presents value for money and is competitively priced, backed by a clear breakdown of costs paired with a well-thought-out Project plan. We perceive the outlined costs as rationalized and aligned with expectations for the activities set out. The appropriateness of the costs concerning the slated activities, combined with the contributions presented by the Project team, further amplifies the value proposition. Consequently, we consider the Project to have met this Eligibility Criteria.

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.

We regard the Project as well-structured and coherent, supported by a transparent and comprehensive breakdown of costs alongside a well-structured Project plan and accompanying documentation. The Project team has relevant expertise for the activities set out, which, when combined with the Project's well thought through and robust methodology, gives confidence in the Project's likely progression. We also note positively the Project's robust Project management framework and the active involvement from the site stakeholders, which add to this confidence. Given these aspects, we consider the Project to be well thought through with a robust methodology, thereby meeting this Eligibility Criteria.

Electricity Projects not selected for funding

Heat Risers

Table 15: Project Costs

Cost type	Cost
Total eligible costs	£544,201.00
Total contribution	£54,466.00
Total SIF Funding requested	£489,735.00

Project description

Heat Risers investigates an underexplored but significant barrier to heat decarbonisation which is currently driving an unjust energy transition. Multiple occupancy buildings make up a quarter of dwellings in UK Power Networks' areas. That's more than one million households in need of a sustainable, cost-effective pathway to a low carbon home.

This project offers a whole systems opportunity to overcome specific connection barriers that obscure the path to full heat decarbonisation in these buildings and lead to a situation where some tenants are left with no choice but to remain on fossil-fuel heating systems due to building infrastructure limitations.

Summary of Expert Assessors' feedback

The Expert Assessors considered the Project to have met each of the Eligibility Criteria and therefore have recommended it be considered for SIF Funding. They considered the Project to have addressed the Innovation Challenge with its focus on accelerating the decarbonisation of heating in a significant fraction of the UK's building inventory. The assessors noted that the Project builds upon its work from the Discovery phase and considered the Project to have set out a clear and robust methodology for the Alpha Phase. They considered the Project team to be sufficient with the activities set out and that the Project's costs across the Project Partners demonstrates value for money and that it is costed competitively. They considered the Project's focus to involve network innovation with its innovative, novel and risky proposal to bring together and define the roles of a variety of stakeholders through its Alpha Phase activities. Its commitment to maintain an open source format for its learnings also gave confidence to the assessors that the Project will not undermine the development of competitive markets.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have met this Eligibility Criteria because it targets a significant barrier of heating decarbonisation in a large portion of the UK's buildings. The emphasis on the challenge of transitioning multi-occupancy buildings, which currently rely on distributed gas heating systems, is in line with the Innovation Challenge aim of demonstrating coordination with local energy planning activities that aim to reduce costs and enhance consumer experience during decarbonisation. Moreover, by not solely focusing on the technical aspects but also prioritizing a just and equitable transition, the Project aligns with the aims of the Innovation Challenge. Therefore, we consider the Project to have met this Eligibility Criteria.

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).

We consider the Project to have met this Eligibility Criteria due to its potential to expedite the deployment of decarbonised heating solutions, particularly in targeted segments. By supporting this transition to low carbon heating, there's a clear potential for both carbon emission reductions and financial savings for participating consumers. While a large part of these benefits seems to directly cater to the involved consumers, it is also evident that the Project carries a broader ambition to aid those on distributed gas systems, ensuring they are not left behind. As a result, we consider the Project to have clearly identified the potential to deliver a net benefit to consumers and we therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We note the Project's innovative approach, particularly in addressing the complexities related to improving shared network infrastructure within multi-occupancy buildings. The Project proposes examining areas that might previously have had ambiguous lines of responsibility among different stakeholders. Such areas have considerable consequences for costs linked to the broader network's reinforcement and operation. Given the Project's concentration on establishing these roles while progressing, we consider the Project's focus to involve network innovation. Therefore, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We do not consider the Project to undermine the development of competitive markets but instead note its potential for stimulating new competitive markets. This is evidenced by the Project's plan to freely share any developed intellectual property. Furthermore, the introduction of any solutions by the Project Partners through competitive markets ensures fairness and promotes healthy competition. Taking into account these factors we encourage the Project team to continue to disseminate their findings broadly. Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We recognize the Project's innovative nature and the associated risks, especially in its concentration on an intricate focus area marked by currently ambiguous responsibilities. The proposed solution of the Project hints at potential innovations in various sectors, including novel coordination mechanisms and funding structures. Venturing into focus areas that have not been previously scrutinized or deeply explored, coupled with the multifaceted nature of the involved stakeholders, emphasizes the risks and spotlights the Project's innovative approach. Based on these attributes, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to have a broad range of stakeholders involved, noting that this provides confidence that the Project has captured holistic representation

from the entire supply chain linked with the proposed solution. This composition, encompassing network operators, heating system specialists, and parties working closely with households and property owners, helps to ensure that diverse viewpoints and all-encompassing solutions can be developed by the Project. We concur with the assessors that the addition of more GDNs could have further strengthened the Project's comprehensive approach. However, given the present stakeholder participation set out for the Alpha Phase, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We note that a significant proportion of the costs, especially those linked with the major partner, Baringa, have been determined through open procurement. This approach ensures transparency and instils confidence in the competitive costing of the Project. The costs attributed to other partners, grounded in relatively lower day rates, further attest to this and provide confidence in the reasonable costing of the Project. Moreover, when evaluating the total costs in relation to the complexity of the challenge addressed and the potential benefits put forward for the proposed solutions, we consider the Project to put forward value for money. As a result, we consider the Project to have met this Eligibility Criteria.

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.

We note the systematic approach laid out by the Project, which instils confidence in its ability to progress in a timely manner in the Alpha Phase. The detailed project plan, supplemented by a Gantt chart and an clear risk assessment, attests to the Project's robust planning. The commitment to applying project management practices throughout the Project's lifecycle provides further confidence in its potential for timely progression. While a more intricate elaboration on the methodology beyond the closer examination of the proposed solution could have enhanced the Application, we nonetheless consider the Project to have met this Eligibility Criteria.

Inform

Table 16: Project Costs

Cost type	Cost
Total eligible costs	£449,341.00
Total contribution	£60,850.00
Total SIF Funding requested	£388,491.00

Project description

The Inform Alpha proposal is to develop a Proof Of Concept (POC) self-serve online connection tool for HV sites wishing to decarbonise their heating systems through electrification. It will include innovative optioneering functionality, considering how energy efficiency measures, flexible connections and on-site energy storage can be used to reduce necessary network reinforcement to facilitate a connection and therefore costs of connection. This will remove barriers to decarbonisation by suggesting ways to reduce connection costs and decrease connection times. At beta, it is intended to roll out the functionality throughout Northern Powergrid's licence areas, and fully automate all processes.

Summary of Expert Assessors' feedback

The Expert Assessors considered the Project to have met each of the Eligibility Criteria and have therefore recommended it be considered for SIF Funding. The Project was considered to demonstrate innovation, novel and risk elements while aligning with the aims of the Innovation Challenge. This Project presents a robust and well thought through Project plan and clearly defined milestones aimed at accelerating the integration of new low carbon technologies onto the grid. The proposal is commendable, addressing a genuine market need, supported by a participation from a wide list of stakeholders sufficient for the activities set out.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have met this Eligibility Criteria because it focuses on supporting the decarbonisation of large electricity demands. This aligns closely with the aim of the Innovation Challenge, which seeks to integrate energy efficiency with flexibility to reduce the costs associated with connecting and operating decarbonized heat and transport demands. Furthermore, the Project offers potential solutions to current challenges in network connections for major energy users. Therefore, we consider the Project to have addressed the Innovation Challenge and consider it to have met this Eligibility Criterion.

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).

The Project identifies multiple potential net benefits for electricity consumers, including reduced socialized network connection costs and expedited connection requests for customers with decarbonization plans. This represents both cost and time efficiencies for consumers. Additionally, the Project's innovative approach could benefit major energy users by potentially accelerating new network connections, thus easing their transition process. The software proposed by the Project also has potential to assist industrial customers in their decarbonization efforts. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

The Project proposes the development of a new tool which offers a potential significant improvement over current practices, introducing a user-friendly portal for accessing network connection information. The software's feature that enables industrial entities, particularly industrial SMEs, to self-evaluate potential site upgrades without extensive network modifications further exemplifies its innovative approach to network issues. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We consider the Project to have met this Eligibility Criteria as it does not undermine the development of competitive markets. The Project's primary goals of

reducing customer connection costs and wait times do not undermine the development of competitive markets. Moreover, the Project aims to disseminate customer benefits and learnings, which could potentially stimulate additional competitive markets.

While we note the feedback from the assessors that the Project Partner 'EA Technology' is slated to receive a significant portion of the Project's SIF Funding and has undertaken similar projects in the past, we consider the Project to have the potential to accelerate the development of its proposed solutions which could then enable further innovations and competitive options. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We consider the Project to have met this Eligibility Criteria due to its innovative, novel, and risky nature. The Project proposes new methodologies and information for end-users, filling a gap in the current market landscape. Although there is an element of risk, particularly regarding the need for broad-based adoption and support from DNOs, these risks are commensurate with the potential benefits that could accrue to a large number of consumers. Given these, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to have met this Eligibility Criteria based on its inclusion of a diverse range of stakeholders. The participation of various entities such as a DNO, consultancies, software developers, local authorities, customers, the NHS, and decarbonization solution providers provides confidence that the Project has participation from a sufficient range of stakeholders for the Alpha Phase activities set out. Additionally, the Project's methodology, which includes stakeholder interviews, provides confidence that a wide array of feedback will be considered in its development.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

The proposed solution by the Project offers both economic and environmental benefits for consumers, aligning well with the activities set out in the Project's plan. The rates and overall costs have been assessed as appropriate and in line with industry norms. Additionally, the potential benefits of the Project are acknowledged and provide further confidence that the Project is providing value for money. We also consider the overall Project's costs to be reasonable, thereby providing further confidence that the Project is providing value for money. As a result, we consider the Project to have met this Eligibility Criteria.

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.

We consider the Project to have met this Eligibility Criteria due to its robust methodology and clear Project plan. The Project builds effectively on its Discovery Phase activities and findings, providing a strong foundation for progress in the Alpha Phase. Additionally, the experience of EA Technology in this domain enhances our confidence in the Project team's ability to advance in a timely manner. The accompanying documentation provided by the Project was also completed to a satisfactory level and gives further confidence that the Project will be capable of progressing in a timely manner in the Alpha Phase. As a result, we consider the Project to have met this Eligibility Criteria.

Park & Flex

Table 17: Project Costs

Cost type	Cost
Total eligible costs	£519,416.00
Total contribution	£51,946.00
Total SIF Funding requested	£467,470.00

Project description

Park & Flex aims to unlock the potential of V2X-enabled EVs in public car parks. This untapped resource will harness new technology and infrastructure to transform how flexibility services are provided. By collaborating with key

stakeholders, we are actively developing and testing real-world flexibility products and customer offerings.

Initial findings indicate these innovative propositions hold commercial promise in theory. Uncertainty exists with how much customers will embrace these, so we are developing a trial-ready customer proposition(s) for demonstration.

Park & Flex is changing the future of mobility and empowering customers to redefine the way they interact with EVs and public car parks.

Summary of Expert Assessors' feedback

The Project was considered by the Expert Assessors to have met each of the Eligibility Criteria and is therefore recommended it be considered for SIF Funding. The Expert Assessors considered the Project to be focused on a timely area of innovation, where its proposed solution could result in substantial changes to business as usual and benefits for consumers. The assessors considered the Project to be focused on an initiative where novel solutions and business frameworks can yield advantages, not just from an economic standpoint, but also from an environmental perspective. While they noted the potential challenges with the proposed solution, they also had confidence in the Project team and the Project's methodology that it will be capable of progressing in a timely manner. The assessors also considered the Project's overall costs to be providing value for money and to be costed competitively overall.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project's focus on developing business models that manage and integrate demand and flexibility associated with EVs in car parks to be directly

aligned with the Innovation Challenge. By integrating energy efficiency with flexibility, it aims to reduce the costs of connecting and operating decarbonised heat and transport demands. This approach not only promotes solutions to cater to various demands but also benefits network operators, carpark operators, and EV drivers, thus aligning with the objectives of the Innovation Challenge. We therefore consider the Project to have met this Eligibility Criteria.

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).

We note the feedback from the Expert Assessors and recognize the Project's clear potential to deliver a net benefit to electricity consumers. We see direct benefits as the Project aims to mitigate costs related to owning and operating EVs, particularly in terms of parking expenses. Indirectly, the Project offers value by increasing the flexibility available to network operators, potentially leading to reduced costs in maintaining the electricity grid and in network reinforcements. Furthermore, the approach of using EVs in carparks to provide low-cost flexibility services has the potential to provide significant benefits to power system operators, resulting in overall reduced system costs, which benefits consumers. The potential for value-sharing for EV users from the services they provide, leading to possible reductions in parking or charging expenses, further enhances its potential benefits. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We recognize that while the innovation proposed by the Project is not necessarily a novel technology, its envisioned application at a considerably larger scale presents a significant change. By examining models to increase flexibility available to network operators using EV carparks, the Project demonstrates innovation beyond conventional business practices. The potential for this larger scale application to offer short and medium-term services to the network and its operators and potentially avoid or delay network investments emphasizes its innovative approach. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We recognise the Project's commitment to transparency, highlighted in the Application in its intention to make all developed propositions and business models accessible to all market participants. This aligns closely with the standard Intellectual Property (IP) provisions in the SIF Governance document, reinforcing our confidence that the development of competitive markets will not be undermined.

The addition of a novel, scalable flexibility service not only has the potential to enrich the market landscape but also introduce a competitive element, potentially stimulating the development of new competitive markets. The design of the proposed solution also provides confidence that the benefits will be widely distributed among various stakeholders such as the EV owner, car park operator, charging system operator, and network operator, preventing any single entity from having an undue advantage. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We observe the Project's ambitious endeavour to develop commercial and business models specifically for EV charging within car parks. The nature of these models brings both innovation and associated market risks, particularly due to uncertainties about anticipated returns and the potential appeal of such innovative models. The uncertainty surrounding EV owners' perceptions and potential hesitations about adopting Vehicle-to-Grid (V2G) charging frameworks further accentuates the inherent risks. However, the Project's uniqueness lies in its comprehensive approach. While some components might be available in disparate forms, a unified solution that integrates these aspects, particularly from a commercial perspective and at the intended scale, is novel and innovative. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

The Project puts forward a collaborative approach, incorporating a wide variety of partners covering nearly all aspects of the carpark charging solution spectrum. The stakeholder engagement plan, which is geared towards integrating further stakeholders and viewpoints based on solution development, also provides

confidence that the Project will have participation from a sufficient range of stakeholders in the Alpha Phase. Engagements with the industry association for carparks, the Greater London Authority, and airports further bolsters the likelihood of realizing a feasible solution. Given these considerations, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We recognize the Project’s a high potential for return on investment, which provides confidence in the value for money compared to the Project’s costs. While some of the costs are somewhat higher than anticipated, their arising from an open competitive procurement process provides confidence in their competitive costing. Furthermore, we note that the overall costs, while slightly higher than anticipated, align appropriately with the activities set out. This gives us confidence that the Project’s costs are providing value for money and are costed competitively. Overall, we consider the Project to have met this Eligibility Criteria.

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.

The Project presents a robust methodology and its well thought through plan. We note the feedback from the assessors that the Project puts forward a structured approach, encompassing detailed work packages. The thorough detailing provides confidence in the Project’s capability of progressing in a timely manner in the Alpha Phase, ensuring that it adheres to its intended goals and mitigates potential setbacks. Furthermore, this attention to detail enhances our understanding of the interrelation between work modules and the associated risks set out in the Project. The adoption of recognised project management methodologies further amplifies the Project's potential for timely execution. Given these strong planning and methodological attributes, we consider the Project to have met this Eligibility Criteria.

Indus

Table 18: Project Costs

Cost type	Cost
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Total eligible costs	£551,953.00
Total contribution	£55,196.00
Total SIF Funding requested	£496,757.00

Project description

Dispersed industrial sites account for nearly 10% of UK carbon emissions, and there is no coordinated plan for decarbonising small to medium enterprises. Indus is developing a novel approach to decarbonising industrial heat by clustering industrial sites. This allows for shared infrastructure investment and co-location of renewables on site, and improved network planning.

Indus is establishing a network-led framework to support commercial development of zero carbon industrial parks. Through market testing with local authorities, industry stakeholders, and gas networks, this whole systems approach to accelerating decarbonisation of industrial sites is an innovative step forward in the fight against climate change.

Summary of Expert Assessors' feedback

The Project was considered by the Expert Assessors to be a strong proposal which addresses a significant and somewhat overlooked challenge in decarbonisation and aligns directly with the aims of the Innovation Challenge. The strategy and approach set out by the Project was considered to be innovative and which holds the potential for net benefits for consumers. The Project consortium was considered to be strong and to have the requisite skills for the activities set out. The potential ripple effects from the Project's proposed solution were not considered to undermine the development of competitive markets and instead could stimulating local supply chains thereby developing new competitive markets. The assessors also noted that the Project's overall costs are reasonable and costed competitively for the complexities set out in the Alpha Phase activities, which they considered to demonstrate value for money and that the Project is costed competitively.

The Expert Assessors considered the Project to have met each of the Eligibility Criteria and therefore have recommended it be considered for SIF Funding.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to put forward a new collaborative approach to tackle the challenges of industrial heat decarbonisation. By introducing a novel collaborative toolkit for industrial consumers, it aims to more effectively facilitate, manage, and integrate multiple demands and demand-side solutions. This aligns directly with the aim of the Innovation Challenge to develop an integrated planning approach for decarbonised heat and transport. We therefore consider the Project to have met this Eligibility Criteria.

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).

We note that the Project has clearly identified a net potential benefit to electricity consumers, showcasing potential cost savings of up to £33m by 2050. The primary benefit identified appears to be a significant reduction in costs, leading to financial benefits through minimized network reinforcement requirements and optimized connections for industrial consumers. Additionally, potential benefits through a decrease in energy consumption and the prospect of new revenue streams from the proposed solution further enhance its value proposition. Based on these points, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We recognise the Project's potential in introducing network innovation through its proposed solution. This solution presents a potential new role for DNOs and DSOs, emphasizing their leadership in the sphere of industrial heat decarbonisation and the coordination of demands to decrease network costs. Additionally, the success of the Project could pave the way for solutions that mitigate dispersed network

reinforcement by establishing industrial sites as low carbon energy hubs. Recognizing the innovative potential in developing collaborative connection approaches and the uncharted territory surrounding these endeavours, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We observe that the Project outcomes can potentially result in the creation of facilitation services, allowing industrial consumers to benefit from commercial net zero hubs. Furthermore, the Project's commitment to publishing its findings and ensuring that the IPR generated does not foster a restrictive environment is commendable. Though some additional insights regarding the interaction with competition, particularly in connections such as where Independent Connection Providers (ICPs) might introduce private networks for industrial net zero hubs, would have enhanced the Application, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We recognize the Project's novel approach to addressing an area of heat-decarbonisation which has not yet been examined in detail and its proposal of an innovative solution, which includes a whole system toolkit that focuses on a significant area of heat demand. The focus on facilitating shared energy infrastructure was also noted to demonstrate an element of risk in the Project. Given these observations, we consider the Project to be innovative, novel, and risky, and therefore consider it to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to have participation from a broad range of stakeholders, particularly noting the combination of Project Partners which bring the necessary expertise to the Project's activities in the Alpha Phase. Additionally, the proactive approach of utilizing an advisory board to vet the proposed solution with pertinent stakeholders was noted positively. We also note positively the expansive

stakeholder engagement across different channels. Based on this, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We note the Project's value proposition, which puts forward the potential for significant endeavours at a competitive cost with the potential for significant benefits. The proposed solution's potential to result in substantial cost savings for industrial consumers, coupled with the exploration of the economic risks of retaining the current path, notably rising reinforcement costs and possible stranded assets, provide us with confidence in its overall value for money. The allocation of the Project's overall costs, primarily dedicated to the labour costs across the Project Partners, was also considered reasonable and to give us confidence that it is costed competitively. Moreover, the potential environmental advantages, if realized across GB, further accentuates the Project's value for money. Given these considerations, we consider the Project to have met this Eligibility Criteria.

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.

The Project puts forward a well thought through and robustly planned approach, evident in the clear and robust methodology laid out in a comprehensive Project plan. This plan divides tasks into distinct work packages, providing a clear and easy to understand approach. Furthermore, the allocation of responsibilities and detailed milestones instils confidence in us regarding the Project's ability to advance in a timely manner in the Alpha Phase. This assurance is further solidified by the cohesive Project consortium and the clarity of roles within the work packages and overall Project plan. Based on these factors, we consider the Project to have met this Eligibility Criteria.

Lightspeed

Table 19: Project Costs

Cost type	Cost
Total eligible costs	£587,831.00
Total contribution	£89,903.00

Total SIF Funding requested	£497,928.00
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Project description

Lightspeed seeks to re-imagine how the UK rolls out on-street EV charging to facilitate the decarbonisation of transport. Almost 40% of UK households do not have off-street parking, and therefore the UK needs to rapidly accelerate the deployment of public charging infrastructure to meet consumer demand and government targets.

The project will develop a bidirectional lamppost-based EV charging solution for new and existing lampposts that can support both smart charging and V2X capabilities, while providing rapid EV charging without the need for major network upgrades. The solution will help ensure that DNOs are not a blocker to Net Zero.

Summary of Expert Assessors' feedback

The Project was considered to have addressed the Innovation Challenge and one of its key aims focused on the decarbonisation of transport. It presents a potential solution for delivering tangible benefits not only to EV owners, which could bolster the swift adoption of EVs, but also to the broader electricity network consumers. The assessors noted the network innovation in this proposed solution, and the elements of innovation, novelty and riskiness in its approach. They noted positively the wide stakeholder group set out for the Alpha Phase activities. They also noted positively the Project's overall costs, which were considered reasonable for complexity of the activities set out and to be costed competitively against industry norms. As a result, the Expert Assessors considered the Project to have met each of the Eligibility Criteria and the Expert Assessors have recommended it be considered for SIF Funding.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We note the Project's approach towards the integration and management of resources, specifically targeting a prominent demand-side barrier in the transport decarbonisation journey. By aiming to aid in the decarbonisation of a significant portion of the energy system, we consider the Project to be in line with the core objectives of the Innovation Challenge, especially its emphasis on integrated planning and connecting decarbonised heat and transport demand. This approach not only targets a reduction in overall costs but also aims to reduce timescales. We, therefore, consider the Project to have met this Eligibility Criteria.

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).

We recognize the potential benefits of the Project to electricity consumers. The direct cost savings presented to EV owners by reducing their energy charging expenses, and the indirect advantages to all electricity consumers, are considerable should the Project proceed to deployment. Introducing flexibility in the system and reducing the need for network reinforcements leads to overall cost savings for electricity consumers. The innovative approach of utilizing street lamps for low-cost flexibility services offers benefits to power system operators, which can subsequently lead to decreased system costs for end users. Furthermore, making vehicle charging more affordable and accessible brings an added layer of convenience. Given these considerations, we conclude that the Project has met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We note positively the Project's aim of examining the complexities of bidirectional charging for a significant portion of the anticipated EV fleet in GB. By potentially transforming the existing approach to EV charging, the Project showcases potential in efficiently managing peak loads, unlocking flexibility, and consequently managing network and operational costs effectively. We consider this to represent network innovation that goes beyond the standard business practices. The emphasis on storage, Demand Side Management (DSM), and Vehicle-to-Grid (V2G)

concepts further amplifies the scope for network innovation. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We note the Project's commitment to ensuring the promotion of competitive markets. By intending to release all learnings and IPR developed during the Alpha Phase to the public domain, we recognize the potential it holds for fostering the development of additional competitive markets. We also note the Project's approach towards the EV charging roll-out, ensuring it remains inclusive of potential solution providers thereby not undermining the development of competitive markets for charging solutions. This approach gives confidence that the Project does not undermine the development of competitive markets. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We recognize the innovative, novel, and risky nature of the Project. It puts forward an innovative approach and focus area, given the anticipated advancements required in both hardware and software, and the evolution of the underlying business model. Its novel approach is evident, as the proposed solution hasn't been extensively explored within GB. Furthermore, we acknowledge the inherent risks associated with the Project, spanning technical challenges, user experience considerations, and consumer engagement. Taking these into account, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

The Project puts forward proposed activities which includes participation from a diverse range of stakeholders relevant to the Alpha Phase activities. We note positively the involvement from various entities within the EV charging value chain, encompassing network operators, a local authority, a chargepoint manufacturer, and a flexibility market aggregator. Moreover, the Project's envisaged dissemination activities also supports the potential inclusion of even more

interested parties as it progresses. Given these observations, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

The Project’s overall costs are reasonable given the activities outlined, especially when factoring in the complexity associated with the proposed solution. While the budgetary allocations by the Project Partners align with industry standards, which gives us confidence that they are costed competitively, we share the sentiment from the assessors that greater financial contributions from the technology developer Project Partner could have strengthened the Application. This is especially when considering the potential financial gains they could accrue from the solution's potential deployment. Nevertheless, when considering the intricacies and complexities of the Project's activities, we consider the Project to be costed competitively and to provide value for money. Therefore, we consider the Project to have met this Eligibility Criteria.

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.

The Project puts forward a robust methodology, reinforcing our belief that it will progress in a timely manner in the Alpha Phase. The clarity and precision of the Project plan and accompanying Gantt chart are noted, showcasing a structured approach broken down into logical and easy to follow work packages. We also recognise that the Funding Party will manage the Project, which provides further confidence it its likely timely advancement. The outlined responsibilities across the Project Partners also provides further confidence in Project's capability of timely progression. Given these, we consider the Project to have met this Eligibility Criteria.

RetroMeter

Table 20: Project Costs

Cost type	Cost
Total eligible costs	£537,937.00
Total contribution	£54,003.00

Total SIF Funding requested	£483,934.00
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Project description

RetroMeter will provide and demonstrate a consistent methodology to accurately meter the energy and cost savings of retrofit energy efficiency measures, unlocking pay-for-performance financing, increasing uptake and leading to reduced costs for consumers and additional flexible services for the DNO.

Summary of Expert Assessors' feedback

The Expert Assessors considered the Project to have met all of the Eligibility Criteria and have recommended it be considered for SIF Funding. The Project was considered to be examining a timely challenge around heat decarbonisation and how DNOs can benefit from retrofitting and consequently pitch in with strategic funding. The assessors considered this approach to be innovative and novel, and to demonstrate network innovation beyond business as usual.

They noted a strength of the Project lies in its stakeholders and Project consortium, which should provide a wide array of feedback and consider opportunities for commercialisation. They also noted that the Project plan was well thought through to give them confidence that it will be capable of progressing in a timely manner and that the Project demonstrates value for money and that it is costed competitively.

While the Expert Assessors have recommended the Project be considered for SIF Funding, they also recommended that the Project focus beyond the development of new demand modelling activities, as there could be greater barriers to implementing its proposed solution as business as usual than just the development of the model.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

The Project is directly aligned with the Innovation Challenge of developing integrated approaches for planning and connecting low carbon technologies. The focus on retrofitting to decrease energy demand, particularly concerning heat demands within structures, is notable. By prioritizing advanced metering techniques, the Project aims to establish appropriate business strategies. This approach has the potential to address the need to accurately measure and, when possible, assign tangible value to energy efficiency improvements in the broad area of domestic heating. As a result of this, we consider the Project to have addressed the Innovation Challenge and consider it to have met the Eligibility Criteria.

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).

We consider the Project to have met the Eligibility Criteria based on its potential to deliver a net benefit to electricity consumers. The Project's focus on creating a sustainable funding model for retrofitting stands out as a promising approach with the potential to deliver a clear net benefit to electricity consumers. By potentially reducing heat demands, the Project could lower upfront costs for retrofits and low carbon heat pump systems. This focus is seen to offer the possibility of financial benefits, primarily through cost reduction. Therefore, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

The Project aims to address the key drivers that necessitate increased investment in networks stemming from the uptake of low carbon technologies. By exploring ways to measure and value demand reduction measures, the Project could potentially reduce the need for such investment. We also note the potential for the benefits of the Metered Energy Systems approach implemented by the Project to extend beyond its current Project scope, thereby providing further confidence that the Project involves network innovation. Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

The Project does not undermine the development of competitive markets. The focus on open-source solutions supports this assessment, as it encourages competitive market opportunities by facilitating market-based solutions for alternatives to network investment. While we note the feedback and recommendation from the assessors that the 'EP Group' does not gain an unfair advantage through their participation, we do not consider the scope for the Alpha Phase activities to represent an unfair advantage. We also echo the assessors' comment for the Project to keep this mind while the Project progresses through the Alpha Phase. Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

The Project is innovative, novel, and includes risky elements. The proposal to develop 'pay by performance' or similar funding models represents a novel and innovative approach in the GB energy sector. Its goal to establish an open-source standard for metering energy savings could indeed foster the development of competitive markets, which was also considered innovative and novel. Moreover, the Project incorporates elements of risk as it deviates from current methodologies, requiring new avenues of research, development and deployment. Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

The Project includes participation from a sufficient range of stakeholders suitable for the planned Alpha Phase activities. The Project engages with a broad spectrum of stakeholders from across the energy system, encompassing specialist expertise, commercial partners, and local community and user representatives. While we recognise the feedback from the assessors that the inclusion of a consumer representative body and additional DNOs could have further strengthened the Project, we consider the existing level of stakeholder engagement to be sufficient for the Alpha Phase activities set out. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

The Project presents the potential for widespread benefits and a standardized approach to energy-saving metering that could be universally adopted. We note that the overall costs are commensurate with the Project's complexity, indicating competitive costing and value for money. While one point was raised by the assessors regarding the higher funding for the Project Partner 'ESC', we consider it to be costed competitively as it is aligned with industry norms and is aligned with the Project's activities. Therefore, we consider the Project to have met this Eligibility Criteria.

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.

We consider the Project to have met Eligibility Criterion 8 due to its well-thought-out approach and strong likelihood of timely progression. The work packages, associated timing, and costs appear appropriate, and the Project consortium possesses the relevant skills for the activities planned. Additionally, we note the Project has clearly articulated and developed plans to mitigate the main risks involved. Given the strong Project team and well-planned approach, we have confidence that the Project will progress in a timely manner. Therefore, we consider the Project to have met this Eligibility Criteria.

Watt Heat

Table 21: Project Costs

Cost type	Cost
Total eligible costs	£540,489.00
Total contribution	£54,045.00
Total SIF Funding requested	£486,444.00

Project description

Watt Heat aims to accelerate the decarbonisation of heat and reduce costs by stimulating the market for flexibility through heat storage technologies. The project is investigating the potential of thermal storage to mitigate peak electricity load

from heat, capture low energy prices, and provide wider system and DSO flexibility.

The Alpha Phase will specify candidate DSO services, with a focus on enabling equitable customer access to incentives which support investment in thermal storage; understand how these might interact with wider market signals across a range of thermal storage technologies; and develop customer propositions and business models for the Beta phase.

Summary of Expert Assessors' feedback

The Project was considered by the Expert Assessors to have met all of the Eligibility Criteria and was therefore recommended it be considered for SIF Funding. They considered the Project's proposed solution to have directly addressed the Innovation Challenge. The Expert Assessors considered the Project's focus to be timely and to demonstrate network innovation with its innovative, novel and risky solution. They considered it to have the potential to stimulate additional competitive markets while also have participation from a sufficient range of stakeholders for the activities set out. Additionally, the Expert Assessors considered the Project to reasonable costs for the activities set out and also considered the discounted day rates by many Project partners to demonstrate that the Project is costed competitively. Its combination of a robust methodology, clear work plans, and forward-thinking approach, gave the Expert Assessors confidence in the Project's capability of progressing in a timely manner.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We note the Project's alignment with the aim of the Innovation Challenge, especially in its focus on the decarbonisation of major energy demands, particularly heat. The proposed solution seeks to mitigate the costs associated with heat

decarbonisation while also supporting the transition to sustainable energy. This is achieved by removing barriers to the inclusion of heat storage technologies. We consider the Project to have met this Eligibility Criteria because of its emphasis on supporting and accelerating the decarbonisation of heat, which we consider to have addressed the Innovation Challenge.

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).

We recognize the clearly identified potential of the Project to deliver net benefits to electricity consumers. The integration of thermal storage with low-carbon heating systems puts forward net financial benefits for consumers, especially through the potential reduction in electricity bills. We note the projected savings of £100 - £600 for those leveraging a Time of Use Tariff in conjunction with suitable heat storage technologies. Additionally, we also note the potential of the Project's proposed solution to enhance network benefits which would subsequently be passed on to consumers. The overarching objective of the Project, which is to bolster the uptake of low-carbon heat technologies by providing DSO system services, illustrates the potential benefits for consumers both in the short and long term. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We note the Project's emphasis on network innovation, particularly through its proposal to utilize thermal storage to manage and potentially ease the peak electrical loads arising from electrified heat. The potential benefits of this approach could be transformative for network operation and reinforcement by enhancing the visibility and deployment of thermal storage systems. Going beyond conventional practices, the Project introduces a potentially innovative approach to heat flexibility and its subsequent effects on networks. This could result in a revaluation of current connection processes to incorporate this newfound flexibility. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We acknowledge the Project's broad applicability to a range of heat storage solutions, highlighting its potential in the broader context of domestic heat decarbonisation. We note the involvement of a diverse set of equipment manufacturers and solution providers, which provides confidence that competitive markets will not be undermined.

Furthermore, the potential of the Project to result in or to stimulate new competitive markets, especially those centred on heat storage flexibility, is evident. We also note positively the Project's dedication to preserving open-access solutions, ensuring its findings and resulting products are widely available to all pertinent heat technology and flexibility providers. We therefore consider the Project to have met this Eligibility Criteria based on its potential to support and enhance competitive markets.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We recognize the Project's innovative, novel nature and its inherent risks. The Project's endeavour to explore how heat storage technologies can offer diversity to the electricity network is both novel and has accompanying risks due to the uncertainties with developing a novel solution. With limited existing data on optimizing these technologies for network services, the Project's approach necessitates a deep comprehension of this network area. The novel aspect is evident in the extensive range of technologies considered by the Project and the significant flexibility it puts forward. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We note the Project's inclusion of a diverse set of stakeholders, each bringing a unique set of experiences and skills pertinent to the Project's focus area. The addition of smaller innovative organizations within the Project consortium underscores our confidence in the Project's ability to engage the relevant stakeholders throughout the Alpha Phase. Though we agree with the assessors that a more detailed plan for engagement during the Alpha Phase might have enhanced the Application, we consider the Project to have met this Eligibility Criteria due to it have sufficient stakeholder involvement for the activities set out.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

The collaboration of Project Partners, each offering a varied range of expertise crucial for the outlined activities, enhances the Project's overall value proposition. Their lower than industry standard day rates was noted positively and provides further confidence that the Project is costed competitively and is providing value for money. We also note the potential benefits the proposed solution could bring and the potential for additional cost savings for electricity networks and consumers, which provides further confidence that it is costed competitively. Overall, we consider the Project to have met this Eligibility Criteria.

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.

The Project presents a comprehensive and well-defined methodology. The clearly laid out Project plan, in tandem with the detailed risk register, demonstrates a clear understanding of potential challenges and their respective mitigation strategies. The comprehensiveness between the various work packages and their integration with the Project Partners provides confidence of a well-planned strategy and likely progression in the Alpha Phase. The clear alignment between partners and their assigned work packages, coupled with transparent documentation, furthers our confidence in the Project's robust approach. Taking all these into account, we consider the Project to have met this Eligibility Criteria.

Electricity Projects not selected for funding

Resilient and Flexible Railway Multi-Energy Hub Networks for Integrated Green Mobility - Round 2

Table 22: Project Costs

Cost type	Cost
Total eligible costs	£541,020.00
Total contribution	£61,169.00
Total SIF Funding requested	£479,851.00

Project description

The project will develop a new concept called multi-energy hubs to address the challenges of decarbonizing the transport sector in the UK. The multi-energy hub is a modular microgrid that integrates local renewable sources, energy storage and different transport modes. The project will first be demonstrated in west coastal railway routes in Scotland, and then rolled out to other parts and transport sectors of the UK. The project is projected to bring significant benefits to both electricity and railway customers.

Summary of Expert Assessors' feedback

Whilst all Expert Assessors agreed that they liked the idea of the Project under the Innovation Challenge, they did not consider the Application to have met all the Eligibility Criteria and therefore the Expert Assessors have not recommended this Project be considered for SIF Funding.

The Expert Assessors liked that the project focused on the decarbonisation of railway operations and the electrification of rail at potentially lower costs for Network Rail and consumers. The proposal showed promise in providing net benefits to electricity consumers, but some additional benefits needed further examination.

The Expert Assessors agreed that the Project involves network innovation by integrating microgrids, storage, and local energy demand against the railway use case, although clarity was lacking in explaining the novelty of single energy hubs' interaction with the grid. The Application was considered innovative and risky due to its multi-energy hub approach with microgrids integrated into the rail network. However, the main risk factor lies in installing and demonstrating energy hubs at railway stations whilst meeting the requirements set by Network Rail, posing operational risk primarily to Network Rail, a subcontractor. The Expert Assessors agreed that Network Rail should be a Project Partner to show stronger partnership and buy in.

Stakeholder participation was deemed sufficient, with a well-rounded consortium with Costain and Ricardo providing a bridge to future phases, but uncertainties existed about some stakeholders' roles, especially the University of Leeds and in particular regarding commercialisation model development. The Project's value for money was questionable, as the scope remained unclear despite previous funding,

and the financial contribution from Network Rail and the wider rail sector who are likely to benefit was uncertain.

The Project's methodology was deemed insufficiently robust and lacked a clear pathway for the Alpha Phase and beyond. The Project's focus seemed to have shifted away from the end goal, with a broad scope that should concentrate on rail instead of ports and electricity consumers. The Project plan was considered unclear in places and lacked detailed information, and improvements were needed in the interview presentation and participation to provide greater understanding and articulation of the Project.

Ofgem funding decision: SIF Funding not approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

The Project address the Innovation Challenge because it focuses on decarbonizing railway operations and supports the electrification of the rail network. By creating energy hubs across the railway, the Project provides a pathway for incorporating renewable energy sources into an increasingly electrified system. This not only has the potential to reduce dependence on the grid but also allows for energy sharing across different modes of transportation that intersect at railway stations. This focus aligns with the aims of the Innovation Challenge and we therefore consider the Project to have met this Eligibility Criteria.

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).

While we note the shift in the Project's overall focus, the Project's broad scope still has identified the potential to deliver a net benefit to electricity consumers by reducing the costs associated with renewable energy curtailment and avoiding network reinforcement expenses. Additionally, it also has the potential to deliver a

social benefit to consumers through additional flexibility options. We also note the potential benefits for local communities and rail users as the Project proposes incorporating electric vehicle charging infrastructure and additional amenities. Despite the shift in the Project's overall focus, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We consider the Project to have met this Eligibility Criteria due to its innovative approach to network integration. The Project goes beyond business-as-usual approaches by exploring the symbiotic relationship between microgrids, storage solutions, and local energy demand, particularly in a railway context. While we acknowledge that greater clarity on how the individual energy hubs interact with the broader grid would have strengthened the Application, we also note that this could be further explored as part of its proposed Alpha Phase activities. Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

The Project does not undermine the development of competitive markets. The "plug and play" approach proposes allows for multiple technology solutions to be integrated, fostering a more competitive landscape. While we recognize that the long-term commercialization pathway could be elaborated further, we don't see the Project's primary focus on the rail sector as a hindrance to market competition. Similar to the assessors, we also acknowledge the potential for the Project's energy hub approach to lead to the development of additional competitive markets. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

The Project puts forward a novel and innovative multi-energy hub approach integrated into the rail network, managing interactions between local resources, existing grid infrastructure, and rail's traction load. This not only represents an innovative use of microgrids but also introduces new technology configurations with potential social and financial benefits.

We acknowledge the risk associated with ensuring the reliable operation of the energy hubs at railway stations. While the operational risk primarily lies with a subcontractor, in this case Network Rail, rather than a Project Partner, we still note the risks in the proposed solution. Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

The Project includes participation from a sufficient range of stakeholders for the Alpha Phase activities set out. It includes a diverse range of stakeholders with relevant expertise in electricity network operation, microgrids, and the rail industry. The Project's consortium is well-rounded, although we recognize that there is room for improvement in defining stakeholder roles and responsibilities. Specifically, the Application would have been strengthened with one of the primary stakeholders of the Project (Network Rail) being included as a Project Partner rather than as a subcontractor. However, overall, we consider the Project to have participation from a sufficient range of stakeholders for the Alpha Phase.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We do not consider the Project to have met this Eligibility Criteria, primarily due to the lack of clarity in its overall scope. We note this is in addition to the Project receiving significant funding through a SIF Discovery Phase and NIA activities. This lack of clarity in the Project's overall scope does not provide sufficient justification that the Project's costs are reasonable and costed competitively. Furthermore, the lack of clarity surrounding the level of input from the stakeholders and Project Partners does not give confidence that the Project's activities are reasonably costed. Additionally, while we note that the day rates and the split of costs among the consortium partners appear reasonable, a more in-depth breakdown would further substantiate the claim of value for money.

However, overall, we do not consider the Project to have met this Eligibility Criteria.

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.

We do not consider the Project to have met this Eligibility Criteria as it did not provide confidence in its capability to progress in a timely manner in the Alpha Phase. This is due to several reasons: the Project not sufficiently detailing its plan for the Alpha Phase and how this is informing the future transition of the Project; the Project’s original objective shifting to incorporate additional areas of focus, such as flexibility and electric vehicle charging, which were considered to detract from the original focus of the Project; an insufficiently clear scope and plan for the Alpha Phase given the funding already received by the Project; and an unclear communication of the Project team’s roles and responsibilities. Together these do not provide confidence in the Project’s likely progression in the Alpha Phase and, as a result, we do not consider the Project to have met this Eligibility Criteria.

Tyseley Environmental Enterprise District (TEED) Alpha Phase

Table 23: Project Costs

Cost type	Cost
Total eligible costs	£593,226.00
Total contribution	£119,893.00
Total SIF Funding requested	£473,333.00

Project description

The Tyseley Environmental Enterprise District Project seeks to accelerate the decarbonisation of neighbouring industrial and domestic customers by harnessing local low-carbon assets. The project includes a comprehensive assessment of opportunities in the Tyseley area, exploring the potential for supplying low-carbon heat demand through a heat network fuelled by the abundant 80-110GWh/year of waste heat in the vicinity. To facilitate the transition to market, a review of necessary changes to market structure and policy is planned, coordinating local and national requirements. While directly benefiting Tyseley, the project also serves as a test bed for nationwide decarbonisation initiatives in a unique setting.

Summary of Expert Assessors’ feedback

The Expert Assessors did not consider the Project to have met the Eligibility Criteria and therefore have recommended it not be considered for SIF Funding. They considered there to be some innovative features of the Project and understood the attractive location choice because of it including residential, industrial and commercial zones.

However, the Project did not meet all of the Eligibility Criteria 1, 2, 3, 5, 6, 7 and 8. The Expert Assessors noted that the Project included some innovative aspects, however more clearly defined roles of the networks including Cadent and National Grid were needed to justify where the innovation lies. The Project did show an attempt to conduct stakeholder engagement, and the Expert Assessors acknowledged that the Project had engaged with some key stakeholders as part of the Discovery Phase, however on further inspection the engagement plans for the Alpha Phase were not considered sufficiently robust.

The absence of the Heat Recovery Unit as a Project Partner was also considered to indicate a lack of buy-in and there was deemed to be insufficient engagement with load centres for the activities set out. Earlier engagement with these stakeholders and clear plans for their ongoing involvement would have strengthened the Application. The Expert Assessors also did not consider the Project to provide value for money due to the benefits not being clearly demonstratable and questioned whether the Project's proposed solution would deliver value for money and benefits for consumers. Overall, the Project did not recommend the Project be considered for SIF Funding.

Ofgem funding decision: SIF Funding not approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We note the feedback from the assessors regarding the Project's attempt to address the decarbonisation of existing gas for commercial users. We agree with

them that there is a lack of clarity in the delivery aims for the Alpha Phase. We also recognize uncertainties including the energy supply demand profiles for Tyseley Energy Park and the transferability of the outputs for flexibility, which we do not consider to be sufficiently aligned with the aims of the Innovation Challenge. As such, we do not consider the Project to have met this Eligibility Criteria.

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).

We consider the potential benefits of the Project to consumers to be unclear. The benefits have not been sufficiently quantified in the Application, causing uncertainty in its potential to deliver a net benefit to consumers. Additionally, the proposal to transition gas consumers from their existing heating solutions presents challenges due to the unclear technological differences which have not been sufficiently considered in the Application. We also note and agree with the concerns raised by the assessors regarding the justification for consumers to change their heating solutions based on the presented information. As a result, we do not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We note the feedback from the assessors and agree with them that the Project appears to have limited innovative elements as part of its proposal. The capture of sub-daily demand and supply information seems to fall within the realm of business-as-usual, making it unclear how it represents network innovation.

While we acknowledge the Project's whole systems approach to heat decarbonisation and the creative use of an unutilized site, the specific details regarding the innovation remain ambiguous. The intention to utilize National Grid's flexibility market to support the commercial case is noted; however, more clarification, especially concerning regulatory considerations, would have been beneficial and would have strengthened the Application.

Overall, with the lack of details presented in the Application, we do not consider the Project to have sufficiently demonstrated how its proposed activities for the

Alpha Phase and its overall solution involve network innovation. As a result, we do not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We recognize that, at its current stage, the Project is primarily focused on information gathering, with potential opportunities to introduce new services. We note that there isn't an existing commercial market for the services highlighted in the proposed solution. This could pave the way for the development of competitive markets in the future. Given this perspective and the stage of the Project, we do not see any indication that the Project would undermine the development of competitive markets. As such, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We agree with the assessors that the Project fails to distinctly pinpoint the innovative aspects of its proposed solution. We perceive the Project's approach to industrial and commercial processes, sizing, and potential flexibility as conventional and not exceeding standard practices. While recognizing the presence of commercial risk within the Project, we believe the Application doesn't present a notably innovative or novel solution to the challenge of decarbonizing industrial clusters. Consequently, we do not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We note and agree with the feedback from assessors that the Project lacks participation from a comprehensive range of stakeholders necessary for the activities set out. Notable absences, such as the Heat Recovery Unit not being included as a Project Partner, and the lack of early-stage engagement with the load centre, suggest limited involvement from essential and relevant organisations. Additionally, the limited engagement from Project Partners, including Birmingham University, and the Project's indistinct plans for community interaction further affirm this observation. The disparity in participation by the Project Partners during

the interview stage of assessment further underscores our concerns about their genuine engagement and commitment from the Project team. Based on these factors, we do not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We note and agree with the feedback from the assessors that the Project presents day rates and contributions which are reasonable but that there remains ambiguity around the overall costs and the tangible benefits for consumers. This uncertainty limits our confidence in determining whether the costs are reasonable and provide value for money. Given our concerns regarding whether the Project's proposed activities would deliver provide value for money for consumers, we overall agree with the Expert Assessors. As a result, we do not consider the Project to have met this Eligibility Criteria.

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.

We agree with the feedback from the assessors that the Project's methodology lacks clarity, which raises concerns about its ability to progress in a timely manner in the Alpha Phase. While we recognize the Project's effort in clearly setting out its milestones, concerns are raised about the feasibility of delivering 9 reports of high quality within a 6-month span. Given the ambiguous scope and methodology combined with these ambitious timelines, we do not have confidence in the Project's capability to progress in a timely manner in the Alpha Phase. As a result, we do not consider the Project to have met this Eligibility Criteria.

Annex 2: Application assessment - Innovation Challenge: improving energy system resilience and robustness

Chapter 2 of this document provides detail about the scope of the Innovation Challenge: improving energy system resilience and robustness, as well as summarising the total number of Projects funded and total value of SIF Funding awarded for the Alpha Phase of round 1.

This annex details our assessment and decisions on Applications submitted in response to that Innovation Challenge. Our assessment of each Project is set out within:

- Pages 94 – 102 set out our assessment of each gas Project that has been selected for funding, together with our decision.
- Pages 102 – 110 set out our assessment of each gas Project that has not been selected for funding, together with our decision.
- Pages 110 – 157 set out our assessment of each electricity Project that has been selected for funding, together with our decision.
- Page 157 – 179 sets out our assessment of each electricity Project that has not been selected for funding, together with our decision.

Gas Projects selected for funding

Hydrogen Cost Reduction (HyCoRe)

Table 24: Project Costs

Cost type	Cost
Total eligible costs	£593,133.00
Total contribution	£93,346.00
Total SIF Funding requested	£499,787.00

Project description

HyCoRe will identify UK regions with strong potential for green hydrogen, produced from offshore-wind and injected into the onshore gas network, to offer a more economic and deliverable solution than offshore wind farms producing electricity directly. To achieve this, HyCoRe will focus on three key research areas:

****National modelling****: identifying high-potential areas based on offshore/onshore constraints and opportunities.

****Modelling of a selected regional specific solution:**** understanding infrastructure solutions that will provide connectivity between offshore wind production areas and energy consumers/gas network.

****Technical challenge assessment:**** identifying technical challenges that may impede deployment and design/optimisation of test/validation solutions to de-risk technology pathways.

Summary of Expert Assessors' feedback

The Expert Assessors considered the Project to have met each of the Eligibility Criteria and therefore have recommended it be considered for SIF Funding. They considered the Project to have addressed the Innovation Challenge and that the Project's proposed solution involves network innovation through its innovative, novel and risky approach to utilising otherwise curtailed wind for hydrogen generation. The Project has identified a potential to deliver net benefits to both gas and electricity consumers and was considered to be costed competitively and to providing value for money with its overall costs. They also noted that the Project

has a wide team involved with relevant expertise and knowledge which, when combined with the Project's methodology, gave the assessors confidence that it would be capable of progressing in a timely manner.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have met this Eligibility Criteria because it is focused on the supply of green hydrogen through existing gas networks and its role in supporting grid decarbonization. This aligns with the aim of the Innovation Challenge to improve understanding and robustness in future energy system configurations. Therefore, we consider the Project to have addressed the Innovation Challenge and consider it to have met the Eligibility Criteria.

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).

We consider the Project to have met this Eligibility Criteria because it identifies the potential for net benefits to both gas and electricity consumers. By focusing on the lowest cost of decarbonization through the utilization of otherwise curtailed offshore wind energy, the Project aims to deliver financial and environmental benefits. Furthermore, the approach could enhance the synergy between the gas and electricity networks, potentially reducing the necessity for curtailment payments. We consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We consider the Project to have met this Eligibility Criteria because it involves network innovation, particularly in adapting the gas network to accommodate increased levels of hydrogen. While it was acknowledged that greater detail could have strengthened the Application, the focus on developing a hydrogen production and connection strategy in areas with electricity constraints is recognized as

involving network innovation beyond business-as-usual. Furthermore, the possibility of regulatory innovation as the Project progresses also contributes to its innovative nature. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We consider the Project to have met this Eligibility Criteria because it does not undermine the development of competitive markets. The Project potentially stimulates additional competition and the development of new competitive markets among owners of offshore wind farms who might otherwise face curtailment. By proposing a deployable strategy for the industry, it does not undermine the development of competitive markets. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We consider the Project to have met this Eligibility Criteria because of its innovative and novel approach in several key areas. Specifically, the development of national modelling and the focus on technologies converting wind energy to green hydrogen in constrained areas is innovative and novel. Additionally, the Project's aim to develop a cohesive industry strategy where none currently exists further underscores its innovative and novel approach. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to have met this Eligibility Criteria because it includes participation from a sufficient range of stakeholders for the activities set out in the Alpha Phase. The Project's focus on disseminating findings to the wider industry supports its broader impact and potential for deployment. While the involvement of a UK academic institution could have provided additional strength to the Application, the current range of stakeholders is sufficient. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We consider the Project to have met this Eligibility Criteria because it provides value for money and is costed competitively. The overall costs of the Project align with industry norms, instilling confidence that it puts forward a competitively costed Project for the activities set out. We also consider the Project’s overall costs to be reasonable for the activities set out, thereby providing confidence that the Project is providing value for money. Overall, we consider the Project to have met this Eligibility Criteria.

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.

We consider the Project to have met this Eligibility Criteria because it presents a well thought through and robust methodology. The Project plan is sufficiently detailed and the approach to Project management is sound. With organizations and stakeholders involved in the Project which possess the relevant knowledge and expertise, there is confidence that the Project will progress in a timely manner. Therefore, we consider the Project to have met this Eligibility Criteria.

NextGen Electrolysis – Wastewater to Green Hydrogen

Table 25: Project Costs

Cost type	Cost
Total eligible costs	£328,761.00
Total contribution	£32,937.00
Total SIF Funding requested	£295,824.00

Project description

Wales and West Utilities are partnering with HydroStar to look at features required from an electrolyser system and the associated electrolyte that ensures resilience of hydrogen supply across the network, giving best value-for-money to WWU and its customers, along with other Gas-Distribution-Network (GDN) customers.

Current electrolyzers have focussed on stack efficiency and hydrogen purity without considering real-world manufacturing and operational constraints, and the high costs associated. This project focusses on using less pure water, namely rainwater, storm overflow and industrial process wastewater as feedstock, which reduces operational constraints and costs for customers whilst enabling wide-scale uptake of low carbon hydrogen.

Summary of Expert Assessors' feedback

The Expert Assessors considered the Project to have met each of the Eligibility Criteria and have therefore recommended it be considered for SIF Funding. The assessors noted that overall the Project makes a coherent and well thought through attempt to examine viable alternatives for green hydrogen production. They considered the Project to be directly aligned with the Innovation Challenge, and considered it have demonstrated network innovation beyond business as usual with a novel, innovative and risky approach. They considered the Project to have participation from a sufficient range of stakeholders for the activities set out and did not consider it to represent the undermining of competitive markets. The assessors also considered the Project to demonstrate value for money and to be costed competitively on a Project and Project Partner level. While the Expert Assessors did note the risks in the Project's proposed solution, particularly around the development of the technology and its relative infancy, they also considered the Project's approach and methodology to be robust, well thought through and applicable for the Project's activities.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have directly addressed the Innovation Challenge by focusing on alternative methods for green hydrogen production within gas networks. This approach is in alignment with the aim Innovation Challenge. The Project's unique technology development for hydrogen production, especially its

efforts to diversify water sources like rainwater, storm overflow, and industrial wastewater, has the potential to reduce the dependency on treated water, thereby enhancing network resilience. We consider the Project to have met this Eligibility Criteria.

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).

We consider the Project to have clearly identified potential net benefits to gas consumers, primarily through cost reduction in hydrogen production and enhanced network resilience. The Project's potential to reduce carbon emissions by increasing hydrogen production also has the potential to deliver environmental benefits to consumers, although these were not considered to be the primary benefits for consumers. Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We consider the Project to involve network innovation by examining new avenues in the gas network to meet an increasing demand and supply of hydrogen. While the primary focus is on technological development, the Project has the potential to drive innovation within the network itself, thereby demonstrating an innovation focus which goes beyond as usual. Specifically, the proposed multiple hydrogen gas injection points could significantly enhance network resilience. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We do not consider this Project to be undermining the development of competitive markets. The technology it proposes is in its infancy and has the potential to open up hydrogen generation to multiple actors, thereby potentially introducing opportunities for new competitive markets. Additionally, the Project's identification of strategic network nodes for targeted hydrogen supply could enhance access and stimulate further competitive market development. While there is a note that the Project could impact regional competition, its proposed solution across GB is

expected to contribute to competitive market development. Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We consider the Project to be innovative, novel, and risky in its approach to hydrogen production. Specifically, the Project's exploration of using wastewater as an alternative to high-quality treated water for electrolysis is a pioneering step. The focus on distributed supply adds another novel dimension to the Project. We also acknowledge the inherent risks, such as the development of the core technologies and variability in wastewater flows. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to include participation from a sufficient range of stakeholders, as evidenced by its collaboration with wastewater operators and the guidance from an advisory board. While we note the suggestion from the assessors that the Project could benefit from incorporating additional organizations from diverse industries focused on hydrogen production and use for a more holistic perspective, we find that the existing range of stakeholders is adequate for the Project's aims and activities set out for the Alpha Phase. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We consider the Project to provide value for money and to be costed competitively. The potential benefits of the Project, particularly its wide applicability, are considered to outweigh the associated costs. The overall budget for the Project is appropriate and reasonable for its planned activities and the costs across the Project Partners are aligned with industry standards. Furthermore, the efficient use of existing facilities and assets adds to its cost-effectiveness. Together, these give confidence that the Project is providing value for money and is costed competitively. As a result, we consider the Project to have met this Eligibility Criteria.

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.

We consider the Project to be well thought through and to have a robust methodology, suitable for the scope of its activities. The detailed plan, outlining responsibilities among various Project Partners, contributes to its strong structure. While risks are inherent in the Project, the clearly presented methodology and risk register gives us confidence in its ability to progress in a timely manner. We also consider the approach to be adequately resourced with the Project team. Together, these give confidence to the Project’s capability of progressing in a timely manner in the Alpha Phase and we therefore consider the Project to have met this Eligibility Criteria.

Gas Projects not selected for funding

HyNTS Supply Chain

Table 26: Project Costs

Cost type	Cost
Total eligible costs	£498,707.00
Total contribution	£50,000.00
Total SIF Funding requested	£448,707.00

Project description

An innovative approach is needed ahead of the energy transition that will support the gas networks in building new procurement strategies for the future that both understand what assets will be needed and the risks to the suppliers. By doing this, procurement risks during the transition will be minimised, ensuring the rate of change required to meet the country's net zero ambitions is realised.

Summary of Expert Assessors’ feedback

The Expert Assessors did not consider the Project to have met all of the Eligibility Criteria and they therefore have recommended it not be considered for SIF Funding. While the assessors recognised the Project stakeholder mix as having potential to deliver an impactful Project for the gas and hydrogen industry, the

Expert Assessors did not consider the Project to be sufficiently mature for them to have confidence in its timely progression in the Alpha Phase and in the proposed solution's potential for deployment beyond the Funding Party.

The assessors noted that the Project, in order to have been recommended for SIF Funding, more clearly define its value proposition with key industry stakeholders and other gas networks, prior to commencing prototyping. They considered the Project's proposed solution to be relevant and to have addressed the Innovation Challenge, however there were uncertainties and concerns raised around its potential for deployment throughout the sector.

Ofgem funding decision: SIF Funding not approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have met this Eligibility Criteria because it addresses the Innovation Challenge through enhanced coordination of gas transmission and distribution, aligning with the cohesive operation of future energy systems. The Project's focus on de-risking the energy supply chain further supports its alignment with the aims of the Innovation Challenge and has the potential to contribute to sectoral resilience. Overall, we consider the Project to have met this Eligibility Criteria.

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).

We consider the Project to have met this Eligibility Criteria because it identifies clear benefits for gas consumers through more efficient operations for gas transmission operators. This efficiency has the potential to result in cost reductions for gas consumers, thereby delivering a financial benefit and meeting the Eligibility Criteria. We acknowledge the feedback from the assessors and agree that the

Application could have offered more granular details on how these benefits would specifically reach gas consumers through distribution network strategies but consider the Project to have clearly identified the potential to deliver a net benefit to gas consumers. However, overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We note the feedback from the assessors and agree that the Project does not meet this Eligibility Criteria because the core innovation appears to focus on the digitisation of the gas supply chain and procurement processes, rather than on innovation within the gas network. We agree with the assessors that the Application lacked clarity in explaining how the proposed solution would add value to the broader gas network infrastructure or sufficiently demonstrate network innovation beyond a business as usual approach. Therefore, we did not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We consider the Project to have met this Eligibility Criteria because the current market for gas transmission assets is fairly limited and the Project's approach has the potential to facilitate broader market access by establishing suitable procurement channels within gas network supply chains. This, in turn, could stimulate competition in the market and lead to new competitive market opportunities. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We note the feedback from the Expert Assessors and agree that the Project has not met this Eligibility Criteria because the Application lacks sufficient details in describing the digital procurement processes and software involved. This lack of detail did not provide us with sufficient confidence that the Project was innovative, novel, or risky compared to existing solutions or approaches.

We also note that the Application would have benefited from a more clearly articulated focus on how the solution would be implemented by the Project

Partners or the wider industry should the proposed solution be successful. This also limited the potential for the Project to be considered innovative, novel and/or risky as the pathways to further deployment were not sufficiently clear.

We also agree with the Expert Assessors that the Project's overall focus on the National Transmission System supply chain was unique and forward thinking, but did not consider the Project to have sufficiently outlined how its approach and proposed solution was innovative, novel and/or risky. As a result, we did not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to have met this Eligibility Criteria as the Project team represents an appropriate consortium of stakeholders and participation from them for the Alpha Phase activities set out.

Like the assessors, we note positively the inclusion of a steering group with representatives from other gas networks. While details on the deployment beyond the Funding Party to the wider gas network were not sufficiently clear, the inclusion of a steering group did help to provide confidence that other gas networks could at least be involved in the Project. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We did not consider the Project to be providing value for money and to be costed competitively. The SIF Funding requested for the Project was not considered to align proportionally with the expected deliverables and prototyping efforts set out for the Alpha Phase. There was also a lack of clarity around the specifics of the SIF Funding requested for the outlined activities, which did not give confidence that the Project costs were reasonable or providing value for money.

While we note the potential benefits set out by the Project, the lack of clarity of how the proposed solution could be replicated or adapted for other gas networks beyond the Funding Party also limited the assessment of whether the costs were reasonable.

As a result, we do not consider the Project to have met this Eligibility Criteria.

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.

We note the feedback from the Expert Assessors and agree that the Project did not meet Eligibility Criteria. The Application lacks clarity in articulating its innovation strategy and a detailed delivery roadmap, which together, did not provide confidence in the Project’s likelihood of progression in the Alpha Phase.

We also note the feedback from the assessors that the Project’s proposed activities for the Alpha Phase were not sufficiently mature compared with the usual activities anticipated in the Alpha Phase, such as activities relating to testing and prototyping ahead of deployment. This also did not provide confidence in the Project’s likely progression in the Alpha Phase.

As a result, we do not consider the Project to have met this Eligibility Criteria. A more detailed plan and a clearer articulation of the Project’s methodology, innovation strategy, and roadmap would have strengthened its case of timely progression in the Alpha Phase.

Distribution Network Information Modelling (DNIM) - Alpha

Table 27: Project Costs

Cost type	Cost
Total eligible costs	£499,653.00
Total contribution	£34,324.00
Total SIF Funding requested	£465,329.00

Project description

With the gas companies looking at low carbon alternatives they need to accurately locate and inspect buried gas infrastructure to ensure that the pipelines are resilience and robust to transport zero carbon alternatives safely.

This project looks to design, build, shop test and field trial a novel autonomous robotic system known as DNIM that can traverse within SGNs natural gas infrastructure and accurately map the network.

DNIM aims to support the energy transition with the development of a cost effective and non-disruptive robotic system that will internally map and analyse the entire gas distribution network in a cost-effective manner.

Summary of Expert Assessors' feedback

The Project was considered by the Expert Assessors to be focussing on a key area of developing a better and more detailed understanding of the gas network to support its current and future operations. However, the assessors did not consider the Project to have sufficiently articulated alignment with this focus. While the assessors considered the Project to be directly aligned with the Innovation Challenge, they did not consider the Project to have clearly set out activities which have the potential to realize the significant benefits articulated in the Application. The assessors also noted a lack of data and clarity throughout the Application which did not confidence to them that the Project had met multiple Eligibility Criterion. Specifically, the lack of a data strategy led to the assessors not having confidence that the Project's proposed solution would not undermine competitive markets and that the Project's methodology was sufficiently robust for there to be confidence in the Project's progression in a timely manner. The assessors also did not consider the Project to be providing value for money, noting the lack of details made it difficult to assess whether the Project's costs were reasonable.

Ofgem funding decision: SIF Funding not approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to align with the 'Improving energy system resilience and robustness' Innovation Challenge. By aiming to digitize gas network assets, the Project holds promise for streamlining operations and maintenance. Additionally, its focus on facilitating the transition to distributing green gases like hydrogen has the potential to further strengthen gas distribution networks and support their

move toward net-zero emissions. This is directly related to the aims of the Innovation Challenge and were therefore consider the Project to have met this Eligibility Criteria.

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).

We do not consider the Project to have met this Eligibility Criteria because the proposed activities and approach do not align sufficiently with a realistic pathway to realize the claimed benefits. While the Application suggests large potential benefits, including a £75m Net Present Value by 2050 through reduced survey time and costs, these benefits appear overly optimistic and not substantiated by the Project's planned activities. We therefore do not consider the Project to have clearly identified a potential to deliver a net benefit to consumers and, as a result, do not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We consider the Project's utilization of novel robotics technology for gas network mapping—including sensor validation—to be an approach which demonstrates an improvement of network management beyond business as usual approaches. We note the feedback from the assessors that this proposed solution has the potential to significantly improve the operational and maintenance aspects of the gas network.

While the Application could have been clearer, we consider the proposed solution to demonstrate network innovation beyond business as usual through the use of robotics for detailed network mapping. Additionally, the possibility of leveraging this technology for a smoother transition of the gas network to hydrogen distribution is a noteworthy aspect which also demonstrates network innovation. Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We agree with the Expert Assessors and do not consider the Project to have met this Eligibility Criteria because it has not sufficiently demonstrated how it would not

undermine the development of competitive markets. Specifically, the absence of a clearly articulated plan for the management, ownership, and dissemination of data generated by the Project does not provide confidence that the Project would not undermine the development of competitive markets. This lack of detail introduces the risk of critical asset information being monopolized, thereby potentially inhibiting competitive markets and limiting the broader benefits that could accrue to the gas network and end consumers. As a result, due to the absence of safeguards to prevent such potential monopolization of asset information, we do not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

The Project does not meet this Eligibility Criteria as it is not considered innovative, novel and/or risky. Despite its ambitious scope, which aims to map gas networks by integrating hardware, communication, and digital technology, the Project was not considered sufficiently innovative and novel in its approach. We agree with the Expert Assessors' feedback that even though the Project demonstrates cross-domain risk in its approach, the proposed test design is not innovative as it is not proposing testing in a live network environment or with considerations for hydrogen. This did not give confidence that the proposed activities would result in a new findings. As a result, we do not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

The Project demonstrates participation from a sufficient range of stakeholders for the Alpha Phase. It has involvement from a wide range of gas networks, which aligns with the Project's scope and the activities set out for the Alpha Phase. We also note and agree the feedback from the Expert Assessors that this could have been strengthened, specifically from greater involvement and participation of external and non-gas network stakeholders. This could, in turn, strengthen the Project's overall reach and impact. Overall, however, the Project meets this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We do not consider the Project to be providing value for money or to be costed competitively. The Project has not sufficiently set out a clear approach to data management and ownership, which we consider to constitute a major risk to the Project's progress and to not provide sufficient confidence that the Project's overall costs and the outputs expected outputs are reasonable or costed competitively.

Moreover, the Project does not provide sufficient clarification as to how its focus on network testing could be translated or applied to GB's networks, which also raises concerns around the value for money and competitive costing of the Project.

As a result, we do not consider the Project to have met this Eligibility Criteria.

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.

We do not consider the Project to have met this Eligibility Criteria because the Project does not put forward a well-structured or robust methodology that gives confidence in the Project's progression in the Alpha Phase. Specifically, we note that the Project has not sufficiently identified the key risks and barriers to the development or deployment of the Project. Furthermore, the lack of details not only on the data ownership, as previously mentioned, but on the technical and commercial success factors, did not provide confidence that the Project has been sufficiently planned for us to have confidence in its capability of timely progression in the Alpha Phase.

As a result, we do not consider the Project to have met this Eligibility Criteria.

Electricity Projects selected for funding

SIF Blade start Demonstrator from offshore wind (SIF BLADE)

Table 28: Project Costs

Cost type	Cost
Total eligible costs	£711,020.00
Total contribution	£211,100.00

Total SIF Funding requested	£499,920.00
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Project description

In many locations high demand for new connections, is driving a need for significant network reinforcement, including up to transmission level. Consequently, customers are unable to connect until upgrade works are completed which in some cases extends to 2037, delaying new housing developments and slowing Low Carbon Technologies (LCT) uptake. This project will look to implement an innovative load management system to manage peak demand of LCTs and will also explore the creation of commercial models and any necessary changes required to support its implementation. If successful, this will allow new housing and LCTs to connect before the network reinforcement.

Summary of Expert Assessors' feedback

The Expert Assessors considered the Project to be a strategically significant and well-structured Project. Its main thrust aims to address a contemporary challenge: the exploration of innovative means to restore power systems post black/brown outs, a challenge further intensified by the rising inclusion of renewables and Distributed Energy Resources (DERs). This focus was considered to have addressed the Innovation Challenge and the assessors noted that opting for Offshore Wind Farms (OWF) as a potential avenue, both from a technical and optional investment viewpoint, is noteworthy for its innovation and novelty. The knowledge and insights which could come from this Project could substantially benefit the broader energy system and result in significant net benefits for electricity consumers.

While the assessors considered the Project to have met each of the Eligibility Criteria and have recommended it be considered for SIF Funding, they noted that greater overall clarity and details would have strengthened the Application. For example, as mentioned in Eligibility Criteria 8, greater granularity on the work packages would have strengthened the Application.

If the proposed solution is proven successful, the assessors noted that there is a compelling case for the incorporation of similar capabilities during the initial stages of future offshore wind developments, potentially realizing considerable savings for

consumers and also resulting in new competitive markets. The assessors also noted positively that the Project had brought together a wide variety of stakeholders for the activities set out and considered there to be sufficient participation from the Project Partners.

In conclusion, the Expert Assessors considered the Project to have met all the Eligibility Criteria and have therefore recommended it be considered for SIF Funding.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

The Project prepares for a net-zero power system by significantly incorporating renewables and offers cost-effective alternative approaches to black start services, bolstering resilience. Additionally, by improving black start capabilities directly from offshore wind farms, the Project has the potential to fill a traditional gap in the electricity network, previously occupied by fossil fuel plants, thereby advancing innovation and network resilience. As a result, we consider the Project to have addressed the Innovation Challenge and to have met this Eligibility Criteria.

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).

We consider the Project to have met this Eligibility Criteria because it demonstrates a clear potential for delivering net benefits to electricity consumers. By exploring cost-effective system services, the Project has the potential to translate into direct savings for consumers. Furthermore, its focus on providing an alternative to fossil fuel generation for black start presents the potential to provide both financial and environmental benefits for consumers. While preliminary calculations suggest a positive outcome, we acknowledge that further investigation during the course of

the Alpha Phase will provide more conclusive evidence of these benefits. However, overall, we consider the Project to have clearly identified potential to deliver a net benefit to consumers.

Eligibility Criterion 3: Projects must involve network innovation.

We consider the Project to have met this Eligibility Criteria due to its ambitious goal of developing both novel technical solutions and innovative commercial and regulatory changes. This multi-faceted approach lends confidence that the Project could be efficiently implemented across the sector should it progress beyond the Alpha Phase. Additionally, we recognize the element of network innovation in the Project's focus on researching alternative methods for delivering black start services, specifically using offshore wind farms rather than traditional fossil fuel plants. This approach goes above and beyond business as usual and has the potential to reshape approaches both in GB and internationally.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We consider the Project to have met this Eligibility Criteria because it supports, rather than undermines, the development of competitive markets. By offering alternative solutions capable of competing in existing markets, the Project contributes to market diversity. Additionally, its focus on inclusivity and the potential for broader market implications strengthens this point. The Project's approach to providing a renewable solution for black start services opens opportunities for various offshore wind farm developers and their suppliers, thereby enriching the competitive landscape within the sector. Therefore, we conclude that the Project has successfully met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We consider the Project to have met this Eligibility Criteria due to its innovative approach in addressing a current gap in energy resilience—specifically, the provision of black start services via offshore windfarms. This represents a novel extension beyond existing onshore capabilities, which are often reliant on diesel generation and are not readily adaptable to offshore windfarms. The Project's ambition to not merely replicate but to supplement existing onshore capabilities

with a solution tailored for offshore wind farms highlights its innovative, novel, and risky nature.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to have met this Eligibility Criteria due to its comprehensive representation of the value chain, despite having a concentrated number of Project Partners. The inclusion of a diverse array of stakeholders—from equipment suppliers and offshore wind farm developers to networks and the system operator— provides confidence that the Project has participation from a sufficient range of stakeholders for the Alpha Phase activities. The addition of new stakeholders for the Alpha Phase further strengthens this diversity and lends confidence that the Project has the requisite skills and expertise for the activities outlined in this phase.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

The Project clearly articulates a transparent cost structure with costs which are reasonable for the activities set out. We also note that the costs for the Project Partners are reasonable and aligned with industry norms, which gives confidence that the Project is costed competitively. While we note the feedback from the assessors that greater detail in the Application could have strengthened the Application, the justifications provided for the costs and resources are sufficient and reasonable for the Alpha Phase. As a result, we consider the Project to have met this Eligibility Criteria.

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.

We consider the Project to have met this Eligibility Criteria due to its well-aligned Project plan that suits the scope and objectives for the Alpha Phase. The methodology is reasonable and offers a clear high-level overview of what the Project aims to achieve, instilling confidence that it can progress effectively through the Alpha Phase. While the documentation is sufficient, we acknowledge that adding further details in key areas such as granular work packages and a

more detailed risk register could have enhanced the Application. Nonetheless, the Project has met this Eligibility Criteria.

REACT

Table 29: Project Costs

Cost type	Cost
Total eligible costs	£553,671.00
Total contribution	£57,045.60
Total SIF Funding requested	£496,625.40

Project description

REACT (Rapid Evaluation Areal Connection Tool) aims to create a geographical planning tool providing users with the ability to view electricity grid connection requests in real-time using an interactive visualisation map. Users will be able to identify the best possible locations to connect to the network, based on dynamic geospatial and network information, as well as a view of future demand and generation requests. This will streamline the connection process where limited pre-application information impacts formal applications. Optimising the location of demand and generation will increase the efficient use of existing assets and the effective roll-out of new infrastructure.

Summary of Expert Assessors' feedback

The Project was considered by the Expert Assessors to have met the Eligibility Criteria and to demonstrate comprehensive planning. Its strategic orientation is predominantly anchored towards hydrogen during this development phase, yet its broader implications for system-wide benefits are evident, especially if expanded to incorporate all potential planning scenarios. The assessors noted positively its alignment with the Innovation Challenge. While the assessors considered the Project to have met the Eligibility Criteria, it was also noted that the Project could have more clearly articulated how it plans on progressing to business as usual, including the identification of relevant stakeholders for this.

Overall, however, the Expert Assessors considered the Project and its proposed solution to demonstrate network innovation through its innovative, novel and risky approach to connection planning and integration. They considered the Project to not undermine the development of competitive markets and to have clearly identified potential net benefits for electricity consumers and potentially even gas consumers. They considered the Project's methodology to be clear and robust, which gives confidence that it will be capable of progressing in a timely manner.

As result, the Expert Assessors have recommended the Project be considered for SIF Funding.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to directly address the Innovation Challenge of electricity distribution network's physical capacity, a key focus for ensuring a resilient future energy system. The introduction of a tool for visualizing the electricity network and power flows has the potential to significantly enhance the efficiency of energy system connections. This approach is aligned with the aim of the Innovation Challenge, which is to bolster understanding of robustness in future energy system configurations and to develop means to enhance it.

We also note the Project's capability to not only use a hydrogen development as a case study but also the possibility of universal extension for all connections. Additionally, we note the positive feedback from the assessors on the Project's focus on Transmission Operator/Distribution Network Operator supply/demand pinch-point modelling, as it could offer enhanced visibility to connections, further speeding up the energy transition while efficiently managing costs for consumers. We therefore consider the Project to have met this Eligibility Criteria.

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).

We recognize that the Project has clearly identified the potential to deliver a net benefit to electricity consumers. The Project has the potential to improve current practices for network operators and developers connecting to the electricity grid, which presents evident prospects for reducing costs for end consumers.

As a result, the Project has the potential to provide net financial benefits to electricity consumers by optimizing the connection processes. Furthermore, we also note the potential for the Project to offer net benefits to gas consumers, especially regarding hydrogen development connections. The Project's ability to enhance the decision-making process for connections, which might lead to a decrease in carbon emissions, is also noted. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

The Project involves in network innovation with its emphasis on addressing network constraints. By leveraging hydrogen development in an area with abundant renewable generation, the Project provides an illustrative model showcasing potential reductions in carbon emissions. This innovative approach encompasses both strategic planning and the operational aspects of networks, striving for heightened efficiency and resilience and clearly going beyond a business as usual approach.

Additionally, we recognize the innovation required in the Project's data management aspects, including the aggregation, integration, and reconciliation of data. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

The Project does not undermine the development of competitive markets. We note the Project's commitment to nurturing competition within the market sector with its approach. Specifically, the Project's intention of making the tool universally

accessible post-development to a vast array of stakeholders offers assurance regarding the protection and enhancement of competitive markets.

Furthermore, the design of the Project ensures open access for all developers to the information provided through the licensees. Given the plans to make the product available to all licensees via a commercial agreement, and its potential to become integral in future regulatory procedures or price reviews, we are confident in the Project's alignment with fostering competitive markets. As such, we see the potential in the Project not just to maintain, but to stimulate new competitive markets through its tool. We do not consider the Project to undermine the development of competitive markets and therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We recognize the feedback from the Expert Assessors and acknowledge that there is some divergence in opinions regarding the Project's innovative and novel nature. While we understand that one assessor desired a more detailed exposition of the innovative aspects of the REACT Project, we also note the perspective of the other two assessors. They perceived the Project as both novel and innovative, particularly highlighting its uniqueness in amalgamating various elements that, though individually recognized in stakeholder consultations from prior projects, have not been tackled within one comprehensive ambition. Furthermore, we are aware of the inherent risks associated with the Project's software development and the integration challenges related to hydrogen. Taking into account these evaluations, we consider the Project to be innovative, novel, and risky, and thus, consider it to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We recognize the involvement of a diverse set of stakeholders in the Project. The Project's approach to including a broad array of stakeholders in its Alpha Phase activities is noted positively. Furthermore, the makeup of the Project Partners, which amalgamates the original team from the Discovery Phase and incorporates NGET and SGN as new Project Partners, is also noted positively. We agree with the feedback from the assessors on the significance of stakeholder engagement and it

being central to the Project's design and agree with their recommendation that the Project to consider required stakeholders for activities that extend beyond the Alpha Phase and transition into business as usual. Overall, however, we consider the Project to have participation from a sufficient range of stakeholders for the activities set out and consider it have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We note the feedback from the assessors regarding the Project's overall costing. While we note the feedback from one assessor that work package 3 has a cost higher than expected, we also recognize the overall comments from the other assessors that the Project's costs, in general, appear competitive and are reasonable for the activities set out.

Moreover, the prospective advantages and benefits identified of the proposed solution give us confidence in the potential for enhanced value for money for consumers. Although a more granular breakdown of costs per Project Partner might have strengthened the Application, we consider the costs from the Project Partners to be reasonable for the activities set out. As a result, we consider the Project to have met this Eligibility Criteria.

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.

The Project's methodology is solid, and the layout is transparent, ensuring a good foundation for its expected progression in the Alpha Phase. The division into clear and comprehensible work packages, with associated dependencies and responsibilities, provides further confidence in the Project's structure. We note the positive feedback from the assessors around the Gantt chart, as it aligns with the Project's timeline and provides a clear pathway for its completion. These provide confidence of the Project's potential for timely progression and we consider the Project to have met this Eligibility Criteria.

D-Suite

Table 30: Project Costs

Cost type	Cost
Total eligible costs	£550,224.00
Total contribution	£55,214.00
Total SIF Funding requested	£495,010.00

Project description

Due to government incentives, such as the planned rollout of 600,000 heat pumps a year from 2028, the ban on new ICE vehicles by 2030 and, ultimately, the net zero target for 2050, the LV network is expecting a large uptake of heat pumps, EV chargers and distributed generation.

Summary of Expert Assessors' feedback

The Expert Assessors considered the Project to have met each of the Eligibility Criteria and have therefore recommended it be considered for SIF Funding. They considered it to have directly addressed the Innovation Challenge with its focus on increasing low voltage management and applying transmission network technologies on the low voltage network. They noted the strong stakeholder mix which, combined with the Project's plan and methodology, gave them confidence that it will be capable of progressing in a timely manner in the Alpha Phase. They noted positively the clear benefits identified by the Project and considered the overall costs of the Project to demonstrate that it is providing value for money (especially when considering the potential benefits set out) and that it is costed competitively compared to industry norms.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have met this Eligibility Criteria because it aims to make low voltage networks more resilient through the potential use of different hardware

solutions. This approach not only offers the possibility of increasing the power capacity of the low voltage network without a complete replacement of all feeders but also has the potential to allow for more active network management. This focus is in direct alignment with the Innovation Challenge and its goal of fostering technical innovations to increase system resilience. Therefore, we consider Project to have met this Eligibility Criteria.

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).

We consider the Project to have met this Eligibility Criteria because it identifies the potential to deliver a net benefit to electricity consumers. Specifically, the Project could delay the need for costly and time-consuming upgrades to transformers and feeders while also potentially reducing the frequency of local blackouts. This approach stands to offer a more resilient low voltage network while simultaneously decreasing overall network costs which would then be passed onto consumers. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

The Project aims to advance the technology readiness level of various hardware solutions for managing low voltage networks. This includes both the development of new hardware and the identification of network areas where such hardware could be deployed. Notably, the Project's application of technologies originally designed for the transmission network to the low voltage distribution grid represents a departure from business-as-usual approaches. This involves network innovation because it has not been previously applied in low voltage network operations. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

The Project does not undermine the development of competitive markets. The Project's approach focuses on fostering a competitive market for power electronics for Distribution Network Operators (DNOs). We do not see this approach as creating favouritism or barriers to entry for other participants. Instead, we consider

the Project to have the potential to result in the development of additional competitive markets through its tendering process. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We consider the Project to have met this Eligibility Criteria due to its innovative and risky nature. The Project aims to further develop the current level of technology, including software and standards, during the Alpha Phase. This development is considered innovative, as the technology has not yet been deployed on a commercial basis. In addition, this focus and approach comes with risks because it has not yet been deployed on this basis and there are risks to the development of the technology. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to have met this Eligibility Criteria because it includes participation from a sufficient range of stakeholders for the planned activities. The Project team possesses the requisite skills and expertise to develop the proposed solution and attract use cases. While we note and agree with the feedback from the assessors that engagement with additional Distribution Network Operators (DNOs) and independent DNOs could further strengthen the Application, we consider the current mix of stakeholders for the Alpha Phase is deemed appropriate for the activities set out.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We consider the Project to have met this Eligibility Criteria because it provides value for money and is costed competitively. The Project's costs and budgets are appropriate and reasonable for the activities outlined and align with industry norms. This provides confidence that the Project is providing value for money and is costed competitively. Additionally, the potential for significant consumer benefits, which could outweigh the Project's costs, further substantiates its value for money. Therefore, we conclude that the Project has met this Eligibility Criteria.

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.

We consider the Project to have met this Eligibility Criteria due to its well-thought-out and robust methodology. The level of detail provided in the Application builds positively on the Discovery Phase activities, and the strong mix of stakeholders along with appropriate resourcing lend confidence that the Project will progress in a timely manner. The documentation provided by the Project has also been completed to a sufficient degree and give further confidence in the Project’s capability to progress in a timely manner in the Alpha Phase.

Scenarios for Extreme Events

Table 31: Project Costs

Cost type	Cost
Total eligible costs	£508,982.00
Total contribution	£51,083.00
Total SIF Funding requested	£457,899.00

Project description

High impact low probability "extreme events" can have serious impacts on the GB energy system. The GB energy system is rapidly transitioning, with an increased dependency on renewable generation and an increased reliance on electrification: a combination which will lead to greater system vulnerability. The increasing frequency of extreme weather events along with influences of other geopolitical events (COVID / war) can have both direct and indirect impacts on the system. This project sets out to better understand how whole-energy system resilience can be impacted by extreme events, identifying vulnerabilities, and informing future investment planning decisions.

Summary of Expert Assessors’ feedback

The majority of the Expert Assessors considered the Project to have met each of the Eligibility Criteria and therefore have recommended it be considered for SIF Funding. They considered the Project to have clearly articulated the depth and breadth of the problem and its proposed approach gives confidence that it will be

capable of progressing in a timely manner. They considered the Project to be costed competitively and to be delivering value for money with overall costs which are aligned with industry norms and appropriate for the activities set out. They considered the Project's approach to involve network innovation and for its proposed solution to be innovative, novel and with elements of risk. While it was noted that the benefits identified for consumers could have been more clearly articulated and set out, they considered the Project to have identified a potential net benefit for consumers through greater network resiliency.

One Expert Assessor did not consider the Project to have participation from a sufficient range of stakeholders for the activities set out as the DNO Project Partner from the Discovery Phase is no longer involved. This was considered to be a risk to the Project as the Project team may no longer represent GB energy networks. A Project-specific condition was recommended to mitigate this risk.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have met this Eligibility Criteria because it directly addresses the Innovation Challenge by focusing on improving the resilience of the GB energy networks. The Project's emphasis on understanding vulnerabilities through scenario modelling is not only timely but is also aligned with the aims of enhancing robustness in future energy systems. This approach is particularly pertinent given the increasing impacts of climate change and the interconnectivity of GB infrastructure networks. Therefore, we consider the Project to have met this Eligibility Criteria.

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).

We consider the Project to have met this Eligibility Criteria because it has identified the potential for delivering both social and financial benefits to gas and electricity consumers. Through improved network planning aimed at increasing network resilience, the Project could lead to reduced downtime and remedial costs following network events. While the precise quantification of these benefits may be challenging at this stage, the Project has clearly articulated its hypothesis and approach, which in our view, outlines potentially substantial benefits to consumers. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We consider the Project to have met this Eligibility Criteria due to its innovative approach to modelling interactions across all facets of the GB energy system and its interdependencies with other utilities. This methodology surpasses business as usual practices by potentially enhancing current approaches and minimizing compartmentalized thinking among stakeholders. Such innovation stands to improve resilience planning across the energy network, which would ultimately benefit consumers. Therefore, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We consider the Project to have met this Eligibility Criteria because it does not undermine the development of competitive markets. The Project's articulation that the prototype model and its future iterations will be owned by the Future System Operator ensures that there is no scope for undermining competition. Additionally, the Project's modelling capability is neutral and does not favour specific solutions or businesses, thereby providing confidence that the Project's proposed solution does not undermine the development of competitive markets. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We consider the Project to have met this Eligibility Criteria due to its innovative, novel, and risky elements. The Project's emphasis on high impact, low probability events introduces new methods to address challenges within the GB energy

networks. Additionally, the Project is likely to require the development of a new model that will consider scenarios not previously detailed by network planners and operators, adding an element of novelty and risk. Therefore, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to have met this Eligibility Criteria given the participation from a diverse range of stakeholders, including academia, the Met Office, and consultancy services. However, we also note the withdrawal of a DNO following the Discovery Phase, which could impact the holistic representation of GB energy networks. We acknowledge the Project-specific condition from the assessors that recommends exploring participation from a DNO during the Alpha Phase activities as a mitigative measure and agree with them that this would strengthen the Project. Given the scope of planned activities for the Alpha Phase, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We consider the Project to have met this Eligibility Criteria due to its competitive costing and value-for-money proposition. While more detail on the day rates for Project Partners could have strengthened the Application, the overall labour and Project costs align with industry norms and expectations, which gives confidence that the costs are competitive. The overall costs were considered reasonable for the activities set out, also providing confidence that the Project is providing value for money. Additionally, the potential benefits to consumers appear to outweigh the associated costs, further substantiating that the Project offers value for money. As a result, we consider the Project to have met this Eligibility Criteria.

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.

We consider the Project to have met this Eligibility Criteria based on its well-structured and clearly articulated Application and Project plan. The robust and suitable methodology in place is deemed credible for the activities set out for the

Alpha Phase. The Project's approach and accompanying materials, such as its Project plan and risk register, instil confidence in its capability to progress in a timely manner. Therefore, we consider the Project to have met this Eligibility Criteria.

Whole Energy System Resilience Vulnerability Assessment (WELLNESS)

Table 32: Project Costs

Cost type	Cost
Total eligible costs	£543,998.00
Total contribution	£72,273.00
Total SIF Funding requested	£471,725.00

Project description

Physical climate risks will affect existing infrastructure in the next decades. The nature and scale of risks will become more uncertain over longer time scales.

WELLNESS sets out to provide core evidence and a coherent approach to resilience standards, assessment, and quantitative metrics that can inform the decision-making process of electricity network stakeholders. The intent is to fairly and transparently to value the resilience contribution from different resources with a multi-energy background on a level playing field. This therefore can provide means and tools for network owners and operators to justify their resilience-orientated investments in front of the regulator.

Summary of Expert Assessors’ feedback

The Expert Assessors considered the Project to have met all the Eligibility Criteria and therefore have recommended it be considered for SIF Funding. They considered the Project to be directly aligned with the Innovation Challenge and considered its proposed solution to involve network innovation in its unique approach to improve network resiliency. The proposed solution was considered innovative and novel, and to be providing value for money and be costed competitively with its overall costs. The Expert Assessors noted positively the stakeholder mix and the Project’s methodology, which gave them confidence that the Project would be capable of progressing in a timely manner.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have met this Eligibility Criteria because it is focused on developing evidence to support investment in electricity networks with a whole-system approach to prioritization and response planning. This aligns with the aim of the Innovation Challenge to improve understanding of robustness in future energy system configurations and to develop solutions for strengthening it. As a result, we consider the Project to have addressed the Innovation Challenge and consider it to have met this Eligibility Criteria.

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).

We consider the Project to have met this Eligibility Criteria because it aims to deliver a net benefit to electricity consumers by reducing inefficiencies and delays in network reinforcement and emergency response activities. The anticipated benefits are not just financial but also social, as the proposed solution integrates resilience into network investment assessments and could lead to a more flexible system. This, in turn, could reduce costs and enhance the quality of the overall network for consumers. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We consider the Project to involve network innovation due to its proposal to develop new technologies, methods, and tools aimed at enhancing the robustness and resilience of electricity network decision-making. Together, and paired with the focus of the Project, we consider this to involve network innovation. Although we agree with the assessors that greater detail on the outputs would have

strengthened the Application, the overall approach involves network innovation and has the potential to result in new developments and approaches which enhance network decision-making. As a result, we consider we conclude that the Project has met Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We consider the Project to not undermine the development of competitive markets because its primary focus is on enhancing regulatory decisions, an aim that is not expected to undermine the development of current or future competitive markets. Furthermore, the Project has the potential to stimulate innovation that could lead to the creation of new competitive markets focused on resilient energy solutions from the development of these regulatory decisions. As such, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We consider the Project to be innovative and novel due to its proposed approach to enhancing resilience, an area that has not been extensively explored previously. Furthermore, the Project's breadth and scope, as well as its aim to integrate planning and resilience assessment frameworks across networks and regions, add to its innovative and novel nature. As such, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to include participation from a sufficient range of stakeholders for the activities set out for the Alpha Phase. The Project includes a diverse range of stakeholders, including academia and relevant consultancies, that are clearly involved in its activities and are appropriate for the Project's activities. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We consider the Project to provide value for money and to be costed competitively because the overall costs are reasonable for the activities set out. Furthermore, the breakdown of costs across the Project Partners are reasonable and aligned with industry norms, which give confidence that the Project is costed competitively. While we note that a large portion of the SIF Funding is allocated towards one Project Partner, we consider the overall reasonable costs to be give confidence that the Project is providing value for money and costed competitively. As a result, we consider the Project to have met this Eligibility Criteria.

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.

The Project presents a robust methodology that instils confidence in its ability to progress in a timely manner. While greater detail on the integration of the proposed tool from different work packages could have further strengthened the Application, the existing work packages are reasonable and clear. The accompanying materials provided by the Project are also clear and point to a well thought through Project. This gives confidence in its capability to progress in a timely manner in the Alpha Phase. We therefore consider the Project to have met this Eligibility Criteria.

SF6 Whole Life Strategy

Table 33: Project Costs

Cost type	Cost
Total eligible costs	£448,124.00
Total contribution	£44,813.00
Total SIF Funding requested	£403,311.00

Project description

It will expand on the learnings from discovery phase which reviewed the current/future regulations developing future-proof recommendations for replacing

SF6 by assessing the techno-economic performance of different intervention options.

SF6 leakage rates will be analysed to identify the most suitable interventions. Alternative low carbon SF6 disposal methods will be explored with laboratory-scale testing. Site handling of SF6-alternatives especially the gas-blends and complexity with mixture-ratio tolerance will be investigated.

The outcomes of the project will be to increase knowledge of the different intervention options, reduce any risks associated with the large-scale demonstration in the beta phase and key recommendations for industry.

Summary of Expert Assessors' feedback

The Project was considered to present a thorough exploration into addressing the challenges posed by SF6 in the energy sector. With the backdrop of increasing regulatory constraints on SF6 usage, the Project was considered to be an important examination for ensuring the resilience and sustainability of the networks. The Project's consortium boasts strength, marrying technical know-how with market insights. Furthermore, the initiative is poised to play a pivotal role not just within traditional networks, but also in the offshore wind sector. It was also noted that the Project has clearly identified benefits for consumers, both in terms of economic value and environmental stewardship. The Project's overall costs were also considered reasonable and the breakdown across the Project team was considered to be costed competitively.

Overall, the Expert Assessors considered the Project to have met each of the Eligibility Criteria and have therefore recommended it be considered for SIF Funding.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

The Project is directly aligned with the goals of the Innovation Challenge. It aims to enhance system resilience by mitigating the impacts of phasing out SF6, studying reduced use of SF6 blends, and developing methods to lessen the environmental impact of SF6 disposal. This focus is in line with the Innovation Challenge's objective of improving understanding and solutions for robustness in future energy system configurations. Additionally, the Project's proposed solution could support the efficient roll-out of new infrastructure, thereby strengthening the resilience and robustness of the energy system. Therefore, we consider the Project to have met this Eligibility Criteria.

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).

The Project has clearly identified potential net benefits to electricity consumers, both environmentally and in terms of consumer benefits. The Project has provided a transparent Net Present Value (NPV) showcasing the potential net benefits it could offer to electricity consumers. Additionally, it has the potential to provide compelling evidence for low-carbon alternatives and more effective management of existing SF6 substations. This focus and the potential outcome could significantly influence investment decisions in electricity networks regarding the equipment used, amplifying the benefits even further. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

The Project involves network innovation by adopting a comprehensive approach to the challenges associated with SF6. The Project goes beyond conventional practices by focusing on the replacement, disposal, and strategic roll-out of SF6 across electricity networks. The emphasis on obtaining robust evidence and refining techniques for managing SF6 in substations further demonstrates an approach which involves network innovation. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We do not consider the Project to undermine the development of competitive markets. The Project aims to create an enabling environment for the improved utilization and disposal of SF6 and its alternatives. We note that there is already competition among providers for SF6 alternatives, and this Project does not show favouritism toward any specific solution or provider, thereby providing confidence that any solution developed will not undermining market competition. As such, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We consider the Project to be innovative, novel, and involving elements of risk. It adopts a unique and holistic approach to addressing the SF6 challenge by covering both the replacement and disposal aspects. This comprehensive approach provides the industry with robust evidence for SF6 alternatives and disposal, which is currently lacking for site-specific decision-making processes. Additionally, while there have been other SF6-related initiatives, this Project distinguishes itself by considering the entire life cycle of SF6, thereby building upon foundational knowledge from previous research and putting forward an innovative and novel focus, with elements to risk due to the larger scope consideration. As such, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

The Project puts forward comprehensive stakeholder engagement and participation from a sufficient range of stakeholders for the Alpha Phase activities set out. The Project outlines all critical stakeholders in a manner that indicates active participation from Project Partners and other stakeholders. The team involved has sufficient expertise and skills to address the various aspects and challenges of the activities set out. While the assessors provided feedback which suggested the Project should consider expanding the stakeholder engagement further in the Alpha Phase, the existing team and stakeholder engagement plans are sufficient for the activities planned. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We consider the Project to have a clearly demonstrating that it is providing value for money and is costed competitively. The Project's costs, including day rates, are within reasonable limits for both professional and academic endeavours, aligning with industry norms. Additionally, the potential for significant benefits to consumers and networks offers further assurance that the Project provides value for money. This perspective is reinforced when the Project is compared to alternative approaches. As such, we consider the Project to have met this Eligibility Criteria.

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.

We consider the Project to be well thought through with a robust methodology, which will be capable of progressing in a timely manner. The Project's approach is broken down into clear and relevant sub-problems, and the granularity of the steps along with clear ownership of deliverables inspire confidence in its timely progression in the Alpha Phase. Additionally, the distinct questions set out by the Project for the Alpha Phase provides confidence that the Project will remained focus on its core activities and will therefore be capable of progressing in a timely manner. As result, we consider the Project to have met this Eligibility Criteria.

CommsConnect

Table 34: Project Costs

Cost type	Cost
Total eligible costs	£463,355.00
Total contribution	£59,973.00
Total SIF Funding requested	£403,382.00

Project description

Electricity networks require resilient communications to operate safely and efficiently. To provide this level of resilience typically comes at a high cost. CommsConnect aims to reduce the critical interdependency of communication and

power networks, through increased information exchange and interoperability between Distribution Network Operators (DNO) and Mobile Network Operator (MNO) systems. Understanding and removing the barriers obstructing the use of public mobile networks using this innovative approach empowers networks to operate more affordably, effectively reducing costs and ensuring improved performance.

Summary of Expert Assessors' feedback

The Expert Assessors considered the Project to have met each of the Eligibility Criteria and have recommended the Project be considered for SIF Funding.

The Expert Assessors considered the Project to have addressed the Innovation Challenge by enhancing the resilience of electrical distribution networks at a lower cost than traditional methods. The Project targets specific areas of network resiliency, particularly in response to unexpected events, and aims to enhance the co-resilience of DNOs and MNOs efficiently. The Project was considered to have identified the potential for net benefits to electricity consumers through reduced costs in communication network deployment and improved network resilience, resulting in fewer and shorter outages.

The Expert Assessors considered the Project innovative, novel with its network and cross sector focus, with potential cross-utility benefits, particularly in communication network resilience. The Project was not considered to undermine the development of competitive markets due to its focus on creating standards and fostering collaboration. The Expert Assessors considered the Project Partners as well-equipped, possessing relevant experience in both electrical and communication networks. The assessors also noted that the participation from the stakeholders was sufficient for the activities set out.

The Project was considered to be providing value for money and to be costed competitively, leveraging existing facilities and aligning with industry standards. The Assessors believed the Project's robust methodology, clear focus on network connectivity, and detailed planning, along with the experience of the partners, contribute to its capability to progress effectively.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have met this Eligibility Criteria because it directly addresses the Innovation Challenge by aiming to increase the resilience of electrical distribution networks cost-effectively. The Project identifies a specific area of resiliency that can significantly enhance the network's ability to respond to unexpected events. This is in alignment with the aims of the Innovation Challenge, specifically in its attempts to increase the co-resilience of DNOs and MNOs in a cost-effective manner. Therefore, we consider the Project to have met this Eligibility Criteria.

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).

We consider the Project to have met this Eligibility Criteria because it has the potential to deliver a net benefit to electricity consumers. By employing a mix of public and private communications networks, the Project aims to reduce the costs associated with supplying communication networks to an appropriate standard. Additionally, the Project's potential to enhance network resilience could result in fewer and shorter network outages, further reducing costs which would then be passed onto consumers. The financial benefit is seen as the primary benefit set out by the Project, although we note the potential for social benefits coming from a more resilient network. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We consider the Project to have met this Eligibility Criteria because it identifies a unique area where innovative investment can lead to a tangible improvement in network resilience. Additionally, the Project proposes a solution that fosters new

knowledge and relationships across different utility networks, thereby offering an opportunity to build effective relationships across sectors. This approach goes beyond business-as-usual methods by incorporating this cross-sector focus. We also acknowledge the growing importance of data for DNOs and recognize that a resilient communications network is critical, especially under stress conditions such as severe weather events. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We consider the Project to have met this Eligibility Criteria because it does not undermine the development of competitive markets. Rather, it aims to stimulate competition by focusing on the creation of standards that have the potential to facilitate new competitive markets. Additionally, the Project's intent to share its findings across all DNOs is seen as an enabling factor for the development of competitive markets, offering DNOs and MNOs more opportunities for collaboration. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We consider the Project to have met this Eligibility Criteria because it embodies elements that are innovative, novel, and risky. The Project proposes a an innovative approach by integrating the processes of two different utilities—DNOs and MNOs—in a way that has not been done before. This approach carries inherent risks but also stands as an example of true innovation. We also appreciate the Project's plan to engage with gas distribution network companies and water companies in the Alpha Phase, adding another layer of innovation. The potential benefits of this approach could extend across multiple utilities, each of which relies on resilient communication networks. Therefore, we conclude that the Project has met Eligibility Criteria 5.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to have met this Eligibility Criteria because it includes participation from a range of stakeholders with strong capabilities in both electrical

and communication networks. Each Project Partner involved contributes a high level of experience and expertise that is directly relevant to the work packages outlined in the Application. We also consider each stakeholder to be linked to outputs and activities in the Alpha Phase, thereby providing confidence that the Project has sufficient participation for these activities.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We consider the Project to have met this Eligibility Criteria because it provides value for money and is costed competitively. The Project and its Project Partners have outlined competitive pricing strategies aligned with industry norms and have also planned for the re-use of existing facilities, which adds value for money. We consider the costs and budgets to be in alignment with other Alpha Phase Projects, thereby providing confidence that the Project is providing value for money and is costed competitively.

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.

We consider the Project to have met this Eligibility Criteria because it presents a robust methodology which provides confidence in its capability to progress in a timely manner in the Alpha Phase. The Project has strong processes in place for managing uncertainty and risks, which gives us confidence in its forward momentum. While we recognize that there are still aspects of the Project that require further clarification, its central focus on connecting DNO and MNO communication networks is clear and well-reasoned and these aspects can be further developed as part of the Alpha Phase activities. The level of detail in the Project plan, the risk register, and the experience of the Project Partners and the Funding Party further bolster our confidence in the Project's timely progression.

Connectrolyser

Table 35: Project Costs

Cost type	Cost
Total eligible costs	£555,330.00
Total contribution	£56,847.00

Total SIF Funding requested	£498,483.00
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Project description

Connectrolyser will optimise electrolyser operation at hydrogen hubs by exploiting flexible operation to help manage the electricity network, excess renewable generation, hydrogen customers and onsite storage. This will avoid the need for traditional firm capacity connections, the preferred choice among hydrogen developers and producers, which have longer lead times and higher costs. Connectrolyser will also explore novel offerings for electrolysers to support security of supply.

Summary of Expert Assessors' feedback

The Expert Assessors considered the Project to have directly addressed the Innovation Challenge with its approach, which they considered to clearly involve network innovation. They also considered the Project to be innovative and novel, with elements of risk due to the unknowns at this point of the Project. The Project was also considered to have clearly identified a benefit for consumers and to have been costed competitively and providing value for money for the activities set out. The assessors noted positively the mix of stakeholders involved and encouraged the Project to incorporate additional engagement opportunities at the later stages of the Alpha Phase. They also considered the Project's approach and methodology to be clear and well thought through to give confidence that it will be capable of progressing in a timely manner.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have met this Eligibility Criteria because it aligns directly with the aims of the Innovation Challenge. The Project's focus on

demonstrating the potential of hydrogen hubs facilitates faster access to the network, which in turn contributes to the resilience and robustness of decarbonized grids. This approach offers opportunities for enhancing both flexibility and security of supply. As a result, we consider the Project to have met this Eligibility Criteria.

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).

We consider the Project to have met this Eligibility Criteria because it has clearly identified a potential net benefit to both gas and electricity consumers. The focus on reducing network and system costs has the subsequent effect of reducing consumer bills, thereby delivering a financial benefit. While we acknowledge that the main benefits are contingent upon widespread adoption of the proposed solution, and that there are associated risks with widespread adoption, the net benefit for consumers is clearly identified. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We consider the Project to have met this Eligibility Criteria due to its innovative approach to network operations. Specifically, the Project's proposal could lead to a first of its kind demonstration in GB where electrolysers are used as service providers to the electricity network. This represents a novel strategy that extends beyond standard business practices, focusing on the flexible use of electrolysers, and thereby demonstrating network innovation. As such, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We consider the Project to have met this Eligibility Criteria because it supports the development of competitive markets rather than undermining them. The Project presents an alternative solution that could compete with existing technologies and approaches, thereby fostering competition. Additionally, the Project's dissemination activity is seen as a positive aspect that further ensures that competitive markets

are not undermined. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We consider the Project to have met this Eligibility Criteria due to its novel, innovative, and risky nature. The focus on multi-vector approaches and de-risking activities planned for the Alpha Phase underscore its innovative and novel approach. Additionally, the Project is deemed risky because the technical feasibility and system-level viability have yet to be established, but is something that will be further explored during the Alpha Phase. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to have met this Eligibility Criteria because it includes participation from a sufficient range of stakeholders for the Alpha Phase. The diverse backgrounds and expertise involved in the Project contribute to our confidence in its likelihood of successful delivery. The Project's outlined outreach activities also positively contribute to this confidence. While we recognize that increased stakeholder engagement in the later stages of the Alpha Phase could strengthen the Application, we find the current level of stakeholder engagement to be sufficient. Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We consider the Project to have met this Eligibility Criteria because it provides value for money and is costed competitively. The overall costs are reasonable for the planned activities and expected outcomes, supporting our conclusion that it provides value for money. While we note that some activities, particularly work package 6, are costed higher than initially anticipated, the overall financial layout is deemed appropriate and provides confidence that the Project's overall costs are reasonable and costed competitively. The potential for significant benefits to consumers further underscores the Project's value proposition. Overall, we consider the Project to have met this Eligibility Criteria.

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.

We consider the Project to have met this Eligibility Criteria because it presents a well-thought-out plan with clearly defined actions and responsible parties, giving us confidence that it will progress in a timely manner. The robustness of the Project plan, illustrated by clear outputs from the work packages, further supports its capability to progress effectively. The other accompanying documentation has also been completed to sufficient level, with a clear Project plan, risk register and Gantt chart. Therefore, we consider the Project to have met this Eligibility Criterion.

Trinity

Table 36: Project Costs

Cost type	Cost
Total eligible costs	£557,751.00
Total contribution	£58,206.00
Total SIF Funding requested	£499,545.00

Project description

Trinity aims to address the increasing complexity faced by control room staff due to the Net Zero transition, benefiting both electricity network operators and their customers. Such complexity poses risks of prolonged disruption, suboptimal capital allocation, and network inefficiency that can impact customer satisfaction and the overall energy system.

Delivering control room simulator facilities enhances network operators' abilities to handle conflicts, manage uncertain demand and generation, maintain system resilience, develop new capabilities, and test regulatory policies and innovative solutions outside of nationally critical and stringently controlled production systems. Ultimately, Trinity improves the service for customers increasingly reliant on electricity networks.

Summary of Expert Assessors' feedback

The Expert Assessors considered the Project to have met each of the Eligibility Criteria and have therefore recommended it be considered for SIF Funding. It was considered to demonstrate a compelling combination of value for money, network innovation, and a strong stakeholder mix which gave the assessors confidence that it would be capable of progressing in a timely manner. They noted the innovation and novelty of the Project and the potential benefits identified for electricity consumers, which would be further amplified should it be adopted across GB electricity networks.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have met this Eligibility Criteria because it focuses on enhancing system resilience and speeding up the adaptability of DNO control rooms in the transition to net zero. This approach is directly aligned with the objectives of the Innovation Challenge, as it addresses the growing complexities brought on by increased technological integrations and responds proactively to network events like faults. Therefore, we consider the Project to have met this Eligibility Criteria.

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).

We consider the Project to have met this Eligibility Criteria because it aims to provide a net benefit to electricity consumers by facilitating a transition in DNO control rooms to adapt to changing demands and the evolving structure of electricity networks. The primary benefit arises from the potential streamlining of operations in the increasingly complex net-zero energy system, which could result in more cost-effective electricity delivery for consumers. The value of these

benefits could be even greater if the solution is adopted across GB DNOs. Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We consider the Project to have met this Eligibility Criteria because it involves network innovation in the form of a transformative approach to DNO control room management. This includes the introduction of new ideas, technologies, and processes, along with improved training for personnel. This approach goes beyond business-as-usual practices and has the potential to swiftly adapt controls and operations in response to growing and changing electricity demand. Therefore, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We consider the Project to have met this Eligibility Criteria because it focuses on enhancing existing infrastructure and toolsets currently in use in most DNO control rooms. We do not consider this approach to create market imbalances or hinder competition but instead to improve upon what is already in place. This approach therefore does not undermine the development of competitive markets. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We consider the Project to have met this Eligibility Criteria because it presents an innovative and novel approach, specifically in its proposal to develop a digital twin, a feature not currently present in any DNO control rooms. Additionally, the unique collaboration among stakeholders in the Project adds an extra layer of innovation, positioning it well to achieve its innovative aims and for the potential deployment of the proposed solution across DNOs. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to have met this Eligibility Criteria due to its inclusive approach to stakeholder participation in the Alpha Phase. The addition of new Project Partners for the Alpha Phase has been noted as a strength, enhancing an already robust mix of stakeholders. The plan to test the proposed solution across various DNOs also shows the Project's commitment to ensuring transferability. Furthermore, the expertise and skills of the participating stakeholders add value to the Project and give confidence that it has sufficient participation for the activities set out. Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We consider the Project to have met this Eligibility Criteria due to its competitive costing and focus on value for money. The financial contributions from the diverse stakeholders and reduced day rates from some Project Partners indicate a cost-effective approach. This also gives confidence that the Project is costed competitively. Additionally, the utilization of existing software licenses and facilities, wherever feasible, contributes to the Project's overall financial efficiency and gives confidence that the Project is providing value for money. Overall, we consider the Project to have met this Eligibility Criteria.

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.

We consider the Project to have met this Eligibility Criteria due to its well-structured planning and the expertise of the team involved. The clarity in roles and responsibilities among team members adds to the Project's overall structure. The robust methodology put forth by the Project instils confidence that it will progress in a timely manner in the Alpha Phase. The risk register and Gantt chart are also clearly articulated. Together, these give confidence that the Project will be capable of progressing in a timely manner in the Alpha Phase. As a result, we consider the Project to have met this Eligibility Criteria.

Digital Inspector

Table 37: Project Costs

Cost type	Cost
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Total eligible costs	£343,809.00
Total contribution	£34,019.00
Total SIF Funding requested	£309,790.00

Project description

Digital Inspector will be a complete ecosystem for monitoring and managing welding. The technology will provide real-time information on the fabrication progress across multiple sites, live compliance to specifications and codes, and enable remote digital inspection of all welding parameters.

The future of work and emerging technology mean companies will capitalise on the accurate, secure, big data collected by Digital Inspector to design new contract types and methods of construction and additionally upgrade the system easily with customisations and new technology. The data from Digital Inspector can be easily transferred into a pipeline operator's Digital Pipeline Integrity Management System (PIMS).

Summary of Expert Assessors' feedback

The Expert Assessors considered the Project to have met each of the Eligibility Criteria and therefore have recommended it be considered for SIF Funding. They considered the Project and its proposed solution to be innovative, novel and risky and to have directly addressed the Innovation Challenge. The Project's proposed solution was considered to involve network innovation as it proposes an approach and solution which has not been attempted by the gas sector. They noted that the Project has a clear and robust methodology and considered it do provide value for money and to be costed competitively.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have addressed the Innovation Challenge due to its potential in fostering a more robust and resilient gas system by reducing problematic welds. This is in line with the Innovation Challenge's ambition of integrating resilience and robustness into future multi-energy system designs. The Project's proposed solution has the potential to offer accelerated infrastructure construction, promoting swifter infrastructure project delivery. We therefore consider the Project to have met this Eligibility Criteria.

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).

We recognize the potential of the Project to provide a net benefit to gas consumers. This is primarily due to its ability to potentially reduce the need for weld repairs, offering cost benefits to network companies which can subsequently be transferred to the consumers. Furthermore, the proposed solution of the Project could diminish gas outages, ensuring consumers benefit from a more resilient gas network. The clear cost-benefit analysis, especially the notable Net Present Value, further reinforces this perspective. Therefore, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We consider the Project's approach to involve network innovation, as it focuses on introducing a digitized method of knowledge exchange for welding within the gas sector—a strategy not previously explored in the sector. The emphasis on real-time data related to gas welding further exemplifies the innovative aspect of the Project. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

The Project does not undermine the development of competitive markets. Notably, the Project's intent to present its proposed solution as an open standard encourages inclusivity and replicability, allowing any firm to adopt it. Moreover, the innovative solution might stimulate new competitive markets, through motivating

other welding firms to emphasize quality assurance. Based on these considerations, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We acknowledge the innovative, novel, and risky attributes of the Project. It proposes the establishment of a unique knowledge exchange platform across the supply chain, an endeavour not yet undertaken in the gas sector, demonstrating its novelty. The utilization of a cloud-based platform for monitoring welding is seen as both novel and innovative, also incorporating elements of risk due to its new approach. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We recognize the wide participation from a variety of stakeholders in the Project. The team encompasses diverse expertise throughout the supply chain, giving confidence that all facets of the proposed solution are covered, from hardware and software to cloud development and the pursuit of international standards. Moreover, the Project's intention to engage the broader industry is commendable. Given these factors, we determine that the Project has an adequate range of stakeholder participation and has therefore met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

The Project offers value for money and presents a competitive costing. Its costs and budgets align well with the activities detailed and are consistent with industry standards. While a more detailed account of the subcontractor elements within the Project might have further strengthened the Application, the Project still presents a sufficient amount of detail for the SIF Funding to be reasonable for the proposed activities. We consider the Project to have met this Eligibility Criteria.

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.

The Project presents a thorough methodology, which instils confidence in its timely progression in the Alpha Phase. The depth of detail in the Project and the

comprehensive identification of primary risks highlight the Project's well thought through planning. The inclusion of several field tests and the incorporation of various software components into the proposed solution are viewed positively, as these measures are believed to mitigate certain risks associated with the Project. Given these considerations, we consider the Project to have met this Eligibility Criteria.

CRDo+: Climate Resilience Demonstrator (extension to new climate risks)

Table 38: Project Costs

Cost type	Cost
Total eligible costs	£555,297.00
Total contribution	£57,441.00
Total SIF Funding requested	£497,856.00

Project description

CRDo+ is a novel enhancement of the original Climate Resilience Demonstrator (CRDo) climate change adaptation decision support tool, with a primary focus of extending to the emerging risk of extreme heat. CRDo+ will scale up across the energy sector and develop a user-friendly platform for asset experts to quantify their combined tacit knowledge of risk under extreme weather conditions into new statistical models. By connecting these asset impact models across the network, CRDo+ will capture a system level view of cascading risk, enhancing the ability of network operators and wider connected asset owners to build systemic climate resilience and robustness.

Summary of Expert Assessors’ feedback

The Expert Assessors considered the Project to have met all of the Eligibility Criteria and have recommended it be considered for SIF Funding. They noted that it directly addressed the Innovation Challenge with an innovative and novel project that clearly demonstrates network innovation beyond business as usual with its focus on cascading events and cross-industry coordination. They noted positively the strong stakeholder mix and the clear benefits identified by the Project. The

Project's overall costs and the split across the Project Partners were considered to provide value for money and to be costed competitively.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have met this Eligibility Criteria because it addresses the Innovation Challenge by modelling the cascading risk to national infrastructure from extreme heat impacting the electricity network. This focus aligns well with the objectives of increasing network robustness and resilience, facilitating more efficient network planning, maintenance, and responses to network events. Therefore, we consider the Project to have this Eligibility Criteria.

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).

We consider the Project to have met this Eligibility Criteria because it has identified a potential to deliver a net benefit to electricity consumers. These benefits are presented as reduced network maintenance costs, improved asset planning, and fewer consumer interruptions. Such advantages are likely to result in financial savings for consumers due to reduced operational costs by networks and could extend to social benefits with improved asset planning and fewer consumer interruptions. Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We consider the Project to have met this Eligibility Criteria because it involves network innovation through its cross-industry focus and its development of asset models. These models aim to extract and codify knowledge from expert asset and risk management users, incorporating considerations for cascading failures. This approach and methodology goes beyond business-as-usual practices, thereby meeting this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We consider the Project to have met this Eligibility Criteria because it does not undermine the development of competitive markets. The proposed solution is designed in a way that allows for the development of other solutions, promoting an opportunity for the stimulation of existing and the creation of new competitive markets. Additionally, the Project aims to develop a toolset and approach in a format that encourages collaboration and interaction between infrastructure owners. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We consider the Project to have met this Eligibility Criteria because it is innovative, novel, and risky. The approach to modelling faults resulting from extreme heat in the electricity network is innovative and novel, not having been previously undertaken in this way. Moreover, the Project's method of asset modelling in this approach is also considered risky as it has not been attempted before on networks. However, we also note the potential for greater understanding of cascading fault conditions across network and infrastructure boundaries, which further demonstrates the Project's innovative and novel approach. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to have met this Eligibility Criteria due to the Project team comprising of a Distribution Network Operator (DNO), Electricity System Operator (ESO), a consultancy, and technical experts. All of these are participating in the Project and have relevant technical expertise for the proposed solution. Additionally, the technical delivery organizations have prior experience with Ofwat on related Projects in the water sector, which adds credibility to the proposed solution and approach. As a result, we consider the Project to be well-positioned to adopt a systems approach for the tasks outlined for the Alpha Phase and therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We consider the Project to have met this Eligibility Criteria because it is costed competitively and provides value for money. The Project's costs are deemed reasonable given its scope and proposed activities, and the day rates for Project Partners align with industry norms. Additionally, the distribution of funding among the Project Partners is considered reasonable, reinforcing our confidence in the Project's value for money. Together, we consider the Project to provide value for money and be costed competitively and therefore consider the Project to have met this Eligibility Criteria.

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.

We consider the Project to have met this Eligibility Criteria due to its well-thought-out Project plan and robust methodology. The level of detail presented in the 'show and tell' materials, as well as the clearly defined architecture required for Project delivery, instils confidence in its ability to progress in a timely manner. The accompanying documentation, such as the Gantt chart, Project plan and risk register, are completed to a sufficient level for us to have confidence in the Project's timely progression in the Alpha Phase. We also note positively the clear progression from the Project's Discovery Phase activities. As a result, we consider the Project to have met this Eligibility Criteria.

NIMBUS

Table 39: Project Costs

Cost type	Cost
Total eligible costs	£574,921.00
Total contribution	£75,048.00
Total SIF Funding requested	£499,873.00

Project description

NIMBUS (Network Innovation and Meteorology to Build for Sustainability) will make meteorological data e.g., rainfall, wind speeds and temperature, available at an

asset-specific level of detail, and usable by energy networks to improve the ability to model and predict the impacts of weather and climate change across the whole life of a network asset.

NIMBUS will reduce costs to consumers by extending the life of network assets, avoiding the costs of replacing assets early and minimising the costs of unnecessary interventions and emissions for maintenance. The outputs could also extend to other infrastructure providers such as transport and telecommunications.

Summary of Expert Assessors' feedback

All Eligibility Criteria have been met and All Expert Assessors have recommended this Project be considered for SIF Funding. The Expert Assessors agreed that the Project focused on the innovative use of probabilistic approaches to asset risk and predictive maintenance, specifically factoring in weather-related asset degradation. They recognised its potential to reduce redundant maintenance activity and reduce asset replacement costs, thereby conserving resources, cutting carbon emissions, and saving capital for essential network enhancements. This bolsters system resilience in line with the Innovation Challenge requirements.

The Project was also considered to benefit electricity consumers by assisting network companies in adapting to climate change and enhancing predictive maintenance, consequently reducing O&M and asset replacement costs. Despite its evident benefits, some concerns were raised, mainly that the Application's scope was limited to the transmission network. However, it was stated that applying the technology to distribution networks might be included in a future aspect of the Project.

The Project's innovative nature was further underscored by its integration of novel data, optimising maintenance management, and highlighting the influence of weather on network assets. Although the Project offers incremental rather than step-change innovation this is considered valuable by the assessors. Concerns were expressed about Plantir's costs – whether they are genuinely focussed on the innovation aspects of their activities and not being used for standard product development. To help mitigate this concern, the assessors have recommended a Project-specific condition focused on this aspect of the Project.

There were no suggestions that the Project undermines competitive markets. Questions regarding Intellectual Property Rights (IPR) terms arose, but were addressed in the interview, emphasising the crucial role of Icebreaker One in data access. The Project was commended for its user-cantered design and for leveraging untapped data sources like weather for refined asset predictions.

Stakeholder participation was highlighted as a strength, ensuring their insights guide the Project. External stakeholders will be kept informed, and engagement with a broader advisory group will take place. However, engaging an additional network operator as Project Partner could have added value. The Project's pricing and cost-benefit balance were seen as competitive.

The Project's methodology was praised, centred around user needs and backed by the expertise of the Project Partners, which provides confidence in timely delivery. The responses provided by the project team during the interview further reinforced the Expert Assessors' confidence in the project's successful and efficient conclusion.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We recognize the innovative probabilistic approach to asset risk and predictive maintenance that the Project proposes. By enabling network companies to detect weather-related asset degradation early and respond accordingly, the Project can prioritize asset renewal and repair, which eliminates unnecessary maintenance and reduces carbon emissions. This method can reduce the costs for essential network upgrades and strengthens system resilience, aligning with the Innovation Challenge and its aims. We therefore consider the Project to have met this Eligibility Criteria.

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).

We note the Project's potential in assisting network companies to implement predictive maintenance of assets, leading to reduced operation, maintenance, and asset replacement costs. This approach holds clear net benefits for consumers. While the benefits outlined in the Application are conservative, focusing only on a single use case on the transmission network, there's potential for broader applications to both transmission and distribution networks in future aspects of the Project. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

The Project's innovative enhancement in modelling network asset conditions—taking into account weather influences throughout an asset's lifecycle—facilitates optimal management of both maintenance and replacement. We also recognize the potential for the Project's approach to facilitating a novel approach to predictive asset maintenance to also have the potential to complement other SIF projects. This approach has the potential to yield consumer cost savings and contribute to CO2 emissions reduction. Moreover, by analysing the impacts of weather on network assets, the Project indicates the potential to enhance both network availability and system resilience, thereby demonstrating network innovation beyond business as usual.

However, we share the concerns of the Expert Assessors regarding the extent of innovation introduced by Palantir. Their indication during the interview of existing innovation projects employing their software technology raises questions about whether their contribution is more product development-oriented rather than network innovation. This has led us to view the innovation as more incremental in nature but still to demonstrate sufficient network innovation for the Alpha Phase.

Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

The Project does not undermine the development of competitive markets. While there were initial concerns regarding the terms of IPR, the interview shed light on the matter, especially highlighting the role of Icebreaker One in probing data accessibility and availability during the Alpha Phase. As the Project has provisions in place for knowledge dissemination amongst different network operators, coupled with the efficiency-enhancing tool which will be accessible to others through licensing, we are confident that the Project's proposed solution will not undermine competitive markets. As such, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We recognize the innovative and novel nature of the Project, especially its incorporation of user-centred design. By harnessing previously unutilized data sources, such as weather data, to enhance asset renewal predictions, the Project offers a unique approach that can potentially result in significant cost savings for electricity consumers. Given its distinctiveness and the associated risks, we agree with the assessors that the Project's approach goes beyond business-as-usual. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We note positively the emphasis on stakeholder involvement in the Project, ensuring that their insights are utilised in shaping both the Problem and its solution. The availability of all essential data for model development to the Project Partners is noted, and the commitment to keep external stakeholders informed through comprehensive dissemination activities is valuable. We acknowledge the Project's inclusion of a diverse group of stakeholders from the energy sector, and its intention to collaborate with an advisory group made up of non-participating network operators and other industry figures. Although the inclusion of another network operator as a Project Partner would have enhanced the Application's strength, ensuring wider rollout across GB networks, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We consider the Project to provide value for money and to be costed competitively in relation to the activities planned for the Alpha Phase. We note the wider financial benefits from the Project's solutions, especially those that directly impact consumers, remain slightly less defined than anticipated. However, we also recognise that these aspects are set to be further refined during the Alpha Phase.

While we acknowledge the feedback from the assessors regarding the financial contribution from Palantir, suggesting it could be more substantial, we too recommend the Project closer examine their costs going forward to ensure that funding supports true innovation rather than just direct product development. Taking these factors into account, we consider the Project to have met this Eligibility Criteria.

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.

The Project presents a robust methodology, which instils confidence in its potential for timely progression. The proficiency and capabilities of the Project Partners provide further confidence in the Project's timely progression in the Alpha Phase. The clear and well thought through plan, combined with the team's skills and distribution of resources, enhances our confidence in its prompt delivery. While a reduced number of work packages might have further streamlined the process, the well-organized interview reinforced our confidence in the team's capability to deliver the Project in the Alpha Phase. Therefore, we consider the Project to have met this Eligibility Criteria.

Electricity Projects not selected for funding

Looking-Glass - Alpha

Table 40: Project Costs

Cost type	Cost
Total eligible costs	£621,873.00
Total contribution	£146,737.00
Total SIF Funding requested	£475,136.00

Project description

As businesses embrace smart technologies and hyperconnectivity to achieve Net Zero, they become more vulnerable to cyberattacks.

Project Looking-glass aims to revolutionise the measurement of security controls by developing cutting-edge techniques and technology. To comply with NIS Regulation 2018, businesses will invest in safeguards. However, the real-time effectiveness of these controls in reducing risk and their contribution to overall robustness and resilience of the network remains unmeasured.

Project Looking-glass leverages the powerful infrastructure provided by the Phoenix platform, use of Artificial Intelligence, and novel techniques to overcome this challenge.

Summary of Expert Assessors' feedback

This Project was considered novel and innovative in nature, bringing together various stakeholders to address an important challenge in energy network innovation which is cybersecurity in a unique and promising way. By bringing together stakeholders from the energy industry, academia, and the Ministry of Defence, the Project was considered to show promise that a collaborative and comprehensive approach to addressing network resilience in the context of cybersecurity is possible.

However, while the Expert Assessors considered the Project have participation from a sufficient range of stakeholders for the activities set out, they also noted that this could have been much stronger. They noted a lack sufficient engagement, assessment, contribution and/or deliverables from wider cybersecurity experts beyond those in the Project, which would give confidence that the Project would be widely applicable. Furthermore, the Expert Assessors also noted that the Project did not provide sufficient clarity as to the identification of a potential for net benefits to gas consumers, and, consequently, the Expert Assessors did not consider it to have met Eligibility Criteria 2. As a result, the Expert Assessors have recommended this Project not be considered for SIF Funding.

Ofgem funding decision: SIF Funding not approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have met this Eligibility Criteria because it addresses the critical issue of cyber-attacks, a notable challenge to network resilience across multiple sectors, including energy. The Project's focus on developing new cybersecurity tools specifically tailored for the UK energy sector demonstrates an innovative approach that aligns closely with the aims of the Innovation Challenge. Therefore, we consider the Project to have addressed the Innovation Challenge and consider it to have met the Eligibility Criteria.

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).

We do not consider the Project to have met this Eligibility Criteria because it has not sufficiently articulated the potential for delivering a net benefit to gas consumers. While the Project aims to strengthen cybersecurity systems within energy networks, it does not clearly identify and demonstrate how these potential improvements would translate to net benefits for the consumer. As a result, we do not consider Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

The Project involves network innovation because it puts forwards a proposal to develop a novel 'calculator engine' for measuring and addressing cybersecurity risks, which we consider goes beyond standard operational procedures, thereby involving network innovation. The tool's potential application across energy networks further demonstrates network innovation beyond what is typically expected from business-as-usual approaches. As such, we consider the Project to have met this Eligibility Criteria.

We also note the feedback from the Expert Assessors and agree that the Application could have been stronger if it provided more detail on aspects of the

innovation that are uniquely applicable to the energy networks in terms of adoption and implementation. However, we also recognise that these aspects could still be further developed as part of the Alpha Phase activities set out. Overall, the Project is considered to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

The Project does not undermine the development of competitive markets and instead is considered to have the potential to foster an environment that is conducive to competitive market development. The Project's plan to publish the code for the core 'calculator engine' as an open-source resource gives confidence that competitive markets are not being undermined. This could lead to a more diversified, innovative, and competitive market in the realm of cyber-security solutions available for energy networks.

We also note the feedback from the Expert Assessors that this open-source approach has the potential to stimulate further innovation in the sector, allowing other entities to build upon the Project's work to develop even more effective and robust cyber-security measures. We agree and therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

The Project demonstrates innovation and novelty. The proposed solution takes an approach to develop bespoke cyber-security tools, possibly including cutting-edge technologies like large language models, which is considered innovative and novel. Like the assessors, we note positively the transparent articulation of the associated risks of adoption and further development, which introduces an element of risk into the Project, and gives confidence that the Projects activities are innovative and novel. The Project's 'first of its kind' approach also gives further confidence in its innovative, novel and risky nature. As such, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

The Project demonstrates a well-rounded and diverse group of stakeholders. The inclusion of the Ministry of Defence adds a layer of credibility and expertise that significantly enhances the Project's robustness. We consider the wider Project team to also be appropriate for the activities set out and for the Project to have sufficient participation from this wider team for these activities.

We note the suggestion from the Expert Assessors that the Project consortium could have been strengthened with the inclusion of external cybersecurity experts. While we do not disagree with this suggestion, we also consider the Project to have included participation from a suitable range of stakeholders for the activities set out for the Alpha Phase. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

The Project provides value for money and is costed competitively. The Project sets out costs which are reasonable for the activities set out, thereby providing confidence that the Project is providing value for money. Furthermore, it was also noted that the Project's use of existing resources provides further assurance that the Project is providing value for money. We also consider the costs across the Project Partners to be reasonable and aligned with industry norms, thereby providing confidence that the Project is costed competitively. Overall, we consider the Project to have met this Eligibility Criteria.

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.

The Project has a well-thought-out and robust methodology, with a comprehensive Gantt chart and a detailed methodology. The Gantt chart, in particular, clearly illustrates the Project's proposed activities and the interdependencies between the work packages. The methodology clearly outlines the step-by-step procedures, thereby helping to reduce potential ambiguities and providing a roadmap for the Project team in the Alpha Phase. We also note the clearly set out risk register. Together, these provide confidence in the Project's likely progression in the Alpha Phase and we therefore consider the Project to have met this Eligibility Criteria.

SCOHL - SuperConductor OverHead Lines

Table 41: Project Costs

Cost type	Cost
Total eligible costs	£514,191.00
Total contribution	£96,682.00
Total SIF Funding requested	£417,509.00

Project description

This Alpha Phase project will continue the investigation into the use of a SuperConducting OverHead Lines (SCOHL) system to increase network capacity on network infrastructure. SCOHL systems have five to ten times higher power density than the equivalent voltage conductor, meaning they deliver higher capacity at lower voltage levels and via a lower number of routes. This will allow faster network capacity increase, delivering time, cost, and carbon savings. SCOHL systems can also deliver a reduction in energy losses to virtually zero and ultimately realise greater environmental and health benefits.

Summary of Expert Assessors’ feedback

The Expert Assessors considered the underlying technical design of the cable, which is central to the Project and its proposed solution, to be presently at a very low technology readiness level. This was considered by the Expert Assessors to result in a great deal of uncertainty around the technical performance and potential economics of the solution. Ahead of scoping out a demonstration exercise as part of the Alpha Phase, the assessors noted that there needs to be a better understanding of potential issues associated with the proposed solution to enable a better assessment of net present value calculations. The assessors noted the difficulty at this stage to have confidence in the investment whilst a negative net present value is presented.

Furthermore, while the Expert Assessors recognised that this has the potential to be a proposal that could deliver significant benefit if some of the risks were able to be addressed in a strategic manner, they also noted that greater target markets

exist out of GB. While they considered the Project to provide value for money, they also recommended that the Project team explore leveraging investment from utilities in other economies where commercial exploitation is likely to happen rather than solely rely on the investment of GB energy consumers.

The Expert Assessors also noted that they were unconvinced by the scope of the activities by the Alpha Phase, noting that they did not have confidence that the Project would be capable of progressing in a timely manner and resolve many of the risks and uncertainties identified.

Overall, as the Project has not met all of the Eligibility Criteria, the Expert Assessors have recommended it not be considered for SIF Funding. The assessors recommended the rescoping of the Project, or a separate SIF proposal, which worked towards developing prototype standards for high temperature superconductors in GB energy networks and which put forward a priority deliverable alongside some of the technical design and technoeconomic assessment activities.

Ofgem funding decision: SIF Funding not approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

The Project addresses the Innovation Challenge's goals of increasing the robustness and resilience of the electricity grid. By exploring alternative methods for augmenting transmission capacity, the Project has demonstrated its direct relevance to the challenge at hand and aligns with the aims of the Innovation Challenge. As such, we consider the Project to have met this Eligibility Criteria.

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).

The Project was not considered to have met this Eligibility Criteria. We note the feedback from the Expert Assessors and agree with their concerns over the Project's negative Net Present Value (NPV) and the technical uncertainties that impede a comprehensive cost-benefit analysis. Although the Project team acknowledged these issues and suggested that live trials could provide more concrete data, we do not consider the Project to have clearly identified potential to deliver a net benefit to consumers at this point in the Project. We also note the feedback from the assessors that there are additional areas of concerns, such as the cost of coolants and the high level of technical dependencies and risks for the Alpha Phase activities. Consequently, we do not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

The Project involves network innovation because of its focus on the use of early to mid-stage transformational superconducting technology as a direct asset in the electricity transmission network. This innovative approach aims to expand the network's capacity and is considered a step beyond traditional, business-as-usual methodologies and approaches. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We do not consider the Project to undermine the development of competitive markets. We note the feedback from the assessors, that the Project plans to license the output cable design to a broad market of cable manufacturers, thereby fostering competition and ensuring competitive solutions can be developed from the Project. Additionally, the engagement of multiple academic partners in the Project can help to facilitate the open dissemination of technical knowledge, which further supports a competitive market environment.

Although the number Transmission Operators within GB is limited, we also note positively the Project's efforts to engage with other TOs to expand market opportunities. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

The Project is innovative, novel and risky. The Project's focus on early-stage high-temperature superconducting cable design is both innovative and novel. This approach also introduces inherently introduces elements of risk, but we note that these risks are considered integral to the Project's innovative aspects. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

The Project has participation from a sufficient range of stakeholders for the Alpha Phase activities set out. We consider the Project consortium to comprise a sufficient range of organizations needed to assess the design's viability and to scope a test trial. We also note that the Project plans on actively engaging with the full range of transmission operators, further confirming its wide stakeholder involvement.

We do however note the feedback from the Expert Assessors that the Application could have been strengthened by including a Project Partner with in-depth technical expertise in cryogenic systems. While we note this expertise exists within the main technology provider, there could be scope within the wider Project team to incorporate additional specialized knowledge in this area to support the Project's activities.

Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

The Project's costs are reasonable, with contributions from Project Partners exceeding the minimum required and labour rates aligned with industry norms. These provide confidence that the Project's costs are competitive. We also consider the Project's costs overall to be reasonable for the activities set out, also providing confidence that the Project is providing value money.

While we note the feedback from the assessors that the long-term risks of the Project could limit the deployability of the Project and thereby limiting its overall

potential benefits, we do not consider this to be within the scope of the Alpha Phase activities. As such, we consider the Project to have met this Eligibility Criteria.

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.

We do not consider this Project to have met this Eligibility Criteria as it does not provide confidence that it has sufficiently developed its risk mitigation for the Project to be capable of progressing in a timely manner in the Alpha Phase. While we agree with the Expert Assessors that some of the Project’s documentation is to a sufficient standard, the concerns around the technology risks, particularly for the Alpha Phase activities, and a lack of sufficiently developed risk mitigation pathways raises significant concerns.

We also note the Project’s proposed approach of reassessment throughout the Alpha Phase and the Project’s overall approach and methodology does not give confidence that it will be capable of progressing in timely manner despite this approach. As a result, we consider the Project to have met this Eligibility Criteria.

REWIRE (REsidential Whole System Integrated REsilience)

Table 42: Project Costs

Cost type	Cost
Total eligible costs	£564,612.00
Total contribution	£66,465.00
Total SIF Funding requested	£498,147.00

Project description

REWIRE will develop innovative domestic level multi-energy systems that exploit cross-vector technologies to provide flexible demand profiles, thereby alleviating network constraints, maintaining security of supply and improving overall energy system resilience.

Summary of Expert Assessors’ feedback

Overall, the Expert Assessors did not recommend this Project be considered for SIF Funding because they did not consider it to have met all of the Eligibility Criteria.

While the Project was considered to have addressed the aims of the Innovation Challenge, and the Expert Assessors considered the idea behind the Project to be innovative and novel. However, on further inquiry the assessors considered the Project to be an economic and technical feasibility focused Project which did not align with the aims of the Alpha Phase. The assessors noted specifically that product design was not intended as a focus for the Alpha Phase. The assessors considered this to demonstrate that there was a lack of confidence in the solution proposed, and, as a result, the Expert Assessors did not consider the Project to have sufficiently identified a potential to deliver a net benefit to the consumer, nor to represent good value for money or be costed competitively. This was further evidenced by the lack of appropriate stakeholders in the Project, which also limited the potential for the proposed solution to be further developed in the Alpha Phase.

Additionally, the Expert Assessors also considered there to be a lack of clear vision for the proposed solution, noting specifically that the Project had not sufficiently detail how it would disseminate its findings. The assessors considered this to limit the potential for net benefits to consumers and their confidence in its likely progression in the Alpha Phase.

Ofgem funding decision: SIF Funding not approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have met this Eligibility Criteria because it addresses the Innovation Challenge through its focus on increasing the resilience of critical energy services. By utilizing multiple energy systems to support the decentralization of generation for domestic customers, the Project aligns well with

the goal of improving energy system resilience and robustness. We therefore consider the Project to have met this Eligibility Criteria.

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).

We do not consider the Project to have met this Eligibility Criteria because it has not clearly defined a potential to deliver a net benefit to gas or electricity consumers. The Project's scope is quite broad, and there is uncertainty regarding the nature of the product and how it would be implemented. The focus seems to be more on assessing technological and economic viability rather than delivering tangible benefits to consumers. As a result, we agree with the assessors and do not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

The Project involves network innovation because of its concept of a consumer-owned, behind-the-meter system that can feed hydrogen back into the network during periods of low demand. This approach could potentially offer a diversified solution for reliable power and, if successful, could lead to reduced load on the gas network through local hydrogen supply. Operational and cost savings would be a key benefit for the network. Overall, we consider this approach to go beyond business as usual approaches. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We do not consider the Project to undermine the development of competitive markets. Given the absence of existing markets where these technology solutions can be monetized, the Project is not viewed as posing a threat to competition. We also note that, if successful, the Project could stimulate the development of new competitive markets, especially in the area of local power-to-gas technologies. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

The Project is considered both innovative and risky. The Project's focus on edge-of-the-network technology is novel and represents a step forward in energy innovation. In terms of risk, the Project faces numerous uncertainties, ranging from technical functionality to the regulatory landscape and policy considerations. Adding an additional layer of complexity is the consumer ownership aspect, which poses challenges both from a technical and a regulatory standpoint. Despite these complexities and challenges, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to have participation from an insufficient range of stakeholders for the Alpha Phase activities. While the Project meets the partner requirements set out in the Innovation Challenge, the team lacks the involvement of a product developer and has not articulated plans to include one in the Alpha Phase. This raises concerns as to when the Project would undergo its design ahead of deployment, which is normally what is expected in the Alpha Phase.

Furthermore, the absence of an aggregator in the Project to act as an intermediary between consumers and network operators was noted as another concern with the stakeholder group in the Project, particularly since direct interaction between these two parties is not feasible.

Together, with these omissions and concerns, we do not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We agree with the assessors and do not consider the Project to provide value for money. Like the assessors, we consider the Project's costs associated to be much higher than expected relative to the expected outputs and the proposed solution. We also share the concern of the assessors around whether the Project consortium possesses the specialized skill set necessary to successfully implement the complex and ambitious initiative. This raises concerns around potential value for money and competitive costing of the Project.

We also note the feedback from the assessors that this lack of clarity around the Project’s costs were not discussed further in the interview component of the assessment. As a result, we agree with the assessors and do not consider the Project to have met this Eligibility Criteria.

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.

We consider the Project to have articulated a clear methodology and planning for the Project’s Alpha Phase activities. The methodology is robust with all of the accompanying documentation being clear and well thought through. The Project puts forward a straightforward Gantt chart.

While we note the feedback from the assessors that some elements of the Project are more characteristic of a Discovery Phase, we also agree that the Project has a clear and robust methodology for the Alpha Phase. As a result, we consider the Project to have met this Eligibility Criteria.

Dynamic Networks

Table 43: Project Costs

Cost type	Cost
Total eligible costs	£561,822.00
Total contribution	£61,971.00
Total SIF Funding requested	£499,851.00

Project description

In many locations high demand for new connections, is driving a need for significant network reinforcement, including up to transmission level. Consequently, customers are unable to connect until upgrade works are completed which in some cases extends to 2037, delaying new housing developments and slowing Low Carbon Technologies (LCT) uptake. This project will look to implement an innovative load management system to manage peak demand of LCTs and will also explore the creation of commercial models and any necessary changes

required to support its implementation. If successful, this will allow new housing and LCTs to connect before the network reinforcement.

Summary of Expert Assessors' feedback

Dynamic Networks tackles an important problem of network constraints slowing down new connections including housing that has a ripple effect across the energy system and wider economy. The Project also raises important questions on regulatory and protection issues when pursuing non-traditional approaches to accelerating connections. The assessors considered these to all be very valid and important questions for which evidence and innovation is needed.

However, the Expert Assessors did not consider the Project to have adopted a sufficient consumer-centric approach, especially given that consumer engagement and cooperation are critical success factors for the load management system concept. While the technical and commercial solutions were considered to be a reasonable approach, the assessors noted that a more user-centric innovation and approach could have helped surface social aspects which need due consideration prior to a trial phase.

As a result, the Alpha Phase was considered to be overly focused on the commercial and technical elements and not sufficiently focused on the social and regulatory aspects, where the assessors considered the primary risks for addressing the problem undertaken to rest. The CBA for the overall Project, while attractive, was also considered to need more validation and consideration of risks and costs from an individual building/consumer perspective to add to the national housing acceleration value and to accurately reflect the concept's value proposition.

As a result, the Expert Assessors have recommended the Project not be considered for the Alpha Phase.

Ofgem funding decision: SIF Funding not approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

The Project is proposing exploring innovative methods for integrating new housing developments into the electricity grid. By managing the demand of low carbon technologies like heat pumps and electric vehicles, the Project aims to relieve constraints on distribution and transmission networks. This strategy also works towards expediting the incorporation of new demand, including low carbon technologies, which is directly aligned with the objectives of the Innovation Challenge. Therefore, we consider the Project to have met this Eligibility Criteria.

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).

The Project proposes developing new solutions to alleviate constraints in the transmission and distribution networks by expediting the connection of new housing developments equipped with low carbon technologies. This has the potential to benefit consumers through quicker access to improved housing and low-carbon heating and mobility solutions. We do note, however, that the Project could benefit from a more consumer-centric approach, particularly given the social risks associated with implementing the load management systems. Additionally, there is a need for more robust validation of the cost-benefit analysis and underlying assumptions about benefits at this stage of the Project. However, despite this, we consider the Project to have clearly identified potential to deliver a net benefit to electricity consumers through alleviating network constraints and expediting the connection of low carbon technologies. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

The Project proposes developing a technical and commercial product for managing low carbon loads in new, constrained housing developments. This focus introduces an innovative approach that surpasses standard approaches in energy networks, thereby involving network innovation. This capability for advanced load management, facilitated through commercial agreements with property developers

and potentially end consumers, offers a new solution that currently does not exist within energy networks.

We acknowledge that the Project carries low technical and integration risks but a high social risk. We agree with the assessors that the scope of work could have been tailored more to reflect this aspect. Additionally, we also agree with the assessors that a remit of potential technologies, such as solar PV and battery storage, could have strengthened the Application by offering a more optimal solution for both load management and consumer services. However, overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

The Project does not undermine the development of competitive markets. The proposed load management system and commercial contractual frameworks that the Project proposes developing would be designed to be universally applicable across all networks and housing developers in relevant constrained network areas. This gives confidence that the Project is not undermining the development of competitive markets. Additionally, mechanisms for consumer choice, such as the ability to switch suppliers and opt-out options, are considered as part of the Project's scope and give further confidence that the proposed solution would not undermine the development of competitive markets. We also encourage the Project to keep in consideration how it will continue to avoid consumer lock-in into particular technologies.

Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We consider the Project to have met this Eligibility Criteria because it introduces a novel solution that is not currently commercially available. The innovative aspects of the Project are in its focus on load management for aggregated housing through the secondary substation and in targeting new housing developments rather than retrofit solutions. These elements set it apart as innovative and novel, particularly as it builds upon but distinctly differs from existing technologies used for PV control.

Furthermore, the Project has demonstrated that it encompasses a variety of risks, including commercial, regulatory, and social/stakeholder risks, which the Project would need to address for its proposed solution to be deployed. These risks further underline the Project's innovative, novel, and risky nature. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We do not consider the Project to have met this Eligibility Criteria because of its limited scope in stakeholder participation. While the Project includes electricity networks and solution providers, it does not sufficiently outline its stakeholder engagement plan, particularly with end consumers. The limited details provided in the Application regarding stakeholder engagement weaken its overall strength in this area.

Furthermore, we note that the Project could have benefited from more focused and detailed engagement with energy suppliers, especially given their pivotal role in supply contracts and consumer relationships. As a result, we do not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We do not consider the Project to have sufficiently demonstrated that it is providing value for money and competitive costing. We agree with the assessors in their assessment that the Project's costs are heavily skewed towards two Project Partners, and that the financial contributions from these partners are disproportionately low considering the potential benefits the Project could bring to them. This limits the potential value for money the Project can present.

Furthermore, because of the lack of details around the stakeholder engagement aspects of the Project, as mentioned above in relation to Eligibility Criteria 6, the Project could have been strengthened by a more comprehensive plan for engaging with key stakeholders such as end consumers and regulators. Their engagement is considered vital for the Project's success, and the lack of a detailed plan in this regard raises questions about the Project's overall value proposition and whether

the costs are reasonable. We also note the feedback from the assessors that the Project’s cost-benefit analysis lacks sufficient validation and justification, which we consider to further weaken the Project's value for money.

Therefore, as a result of these, we do not consider the Project to have met these Eligibility Criteria.

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.

We agree with the assessors and do not consider the Project to have met this Eligibility Criteria due to its lack of a robust methodology. While the Project places emphasis on technical and commercial aspects, it does not sufficiently address long-term consumer engagement and associated social and regulatory considerations. These elements are vital for ensuring consumer satisfaction, quality of service, and protection, and their omission from the delivery plan undermines the Project's likelihood of progressing in a timely manner. We also note the assessors feedback that the Project's delivery plan lacks focus on reducing the identified risks related to consumer and system needs in the Alpha Phase.

As a result, we do not consider the Project to have met this Eligibility Criteria.

WARN - Weather Alerts and Risk analysis for Network operators

Table 44: Project Costs

Cost type	Cost
Total eligible costs	£523,298.00
Total contribution	£54,101.00
Total SIF Funding requested	£469,197.00

Project description

The WARN system will improve overall energy system robustness by enhancing capabilities for operational decision-making and strategic planning.

Extreme weather increases the risk of faults in electricity distribution networks, complicating operational challenges and raising the likelihood of network failures

impacting customers. The historical weather and fault data suggest the these events are increasing in both quantity and severity per year.

The WARN project is pioneering an innovative new digital system that will identify weather-related vulnerabilities, monitor for those conditions that contribute to vulnerabilities and assess how weather risks may evolve as the climate continues to change.

Summary of Expert Assessors' feedback

The majority of the Expert Assessors considered the Project to have met each of the Eligibility Criteria and therefore have recommended the Project be considered for SIF Funding. They considered the Project to have addressed the Innovation Challenge and considered the proposed approach to be innovative and novel, demonstrating network innovation. They considered the Project to have a good mix of stakeholders for the activities set out and considered the Project to demonstrate value for money and to be costed competitively. The Project's approach and methodology gave confidence that it will be capable of progressing in a timely manner.

However, one assessor noted that the Project's progress will depend heavily on the analysis of data and that greater clarity on how the Project could progress into business as usual would have strengthened the Application. Project-specific conditions have been recommended to help to mitigate these concerns and the risks they present in the Alpha Phase.

Ofgem funding decision: SIF Funding not approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have met this Eligibility Criteria because it addresses the Innovation Challenge by demonstrating potential to improve network planning and response in the face of severe weather events or cumulative weather-related asset degradation. This aligns with the aim of the Innovation Challenge to

incorporate resilience and robustness as key and measurable considerations in future multi-energy system design. Additionally, the Project has the potential to enhance network resilience and reduce costs for electricity consumers. Therefore, we consider the Project to have addressed the Innovation Challenge and to have met this Eligibility Criteria.

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).

We consider the Project to have met this Eligibility Criteria because it identifies a potential to deliver a net benefit to electricity consumers. Specifically, the Project aims to improve DNO response to both extreme and cumulative weather effects, which could lead to reductions in operational costs for DNOs and fewer consumer interruptions. The primary avenue for consumer benefit is set out as financial benefits, achieved through cost reductions.

Furthermore, the Project has the potential to advance the understanding of asset planning for replacements, which could contribute to increased network robustness in the future, which could deliver additional benefits to consumers. Although further details on DNO implementation would have strengthened the Application, we recognise these aspects of the Project could be further developed in the Alpha Phase. Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

The Project aims to study the impact of weather conditions on distribution network operations and employs both historical and current network asset data along with weather information to enhance predictions about network performance and guide interventions. While further elaboration on how this innovation surpasses existing asset management functionalities could have added value to the Application, the Project is still considered to involve network innovation beyond business as usual approaches to preventative maintenance and asset replacement, as well as more efficient network management. Therefore, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We consider the Project to have met this Eligibility Criteria as it does not undermine the development of competitive markets. The approach proposed by the Project does not preclude the development of other models or approaches, thereby fostering an environment of competition. Additionally, the Project's commitment to licensing its solution and disseminating outputs widely adds confidence that it will not negatively impact the competitive landscape. We consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We consider the Project to have met this Eligibility Criteria because of its innovative and novel approach. The Project employs historical network data in conjunction with weather data to anticipate and mitigate network faults, providing a unique depth and time window that accounts for multiple time horizons and potential compounding effects. This approach and the development of the proposed tools and methods are innovative and novel. Therefore, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to have met this Eligibility Criteria due to its inclusion of a sufficient range of stakeholders for the Alpha Phase. Even though the Project team is relatively small, the mixture of the Funding Party, academia, and consultancy with relevant expertise is considered appropriate for the Alpha Phase activities. The addition of another network for the Alpha Phase is also seen as a positive factor, potentially enriching the Project through varied geographies and user experiences. Therefore, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

The cost structure for each of the Project Partners is viewed as appropriate for their respective roles, and the day rates are considered competitive when compared to industry norms. This provides confidence that the Project is costed

competitively. The plan to leverage existing and pre-funded software is also noted positively as it provides confidence that the Project is providing value for money. Therefore, we consider the Project to have met this Eligibility Criteria.

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.

We note the feedback flagged by one of the Expert Assessors who did not consider the Project to have met the Eligibility Criteria. While the Project puts forward a clear overall objective, its methodology for reaching this objective in the Alpha Phase is not sufficiently clear in several key areas of the Project. This does not give us confidence that the Project has a sufficiently robust methodology and that it will be capable of progressing in a timely manner in the Alpha Phase.

First, the Application mentions that the Project will consider wind speed and its direction for different areas (urban, sub-urban and rural) during extreme conditions and their correlation with different faults. However, it does not provide sufficient details on how different geographic urban geographies will be considered by the Project and does not provide sufficient details on how this information will be integrated into the proposed solution.

Second, the Application also does not provide sufficient clarity and consideration on aspects of the Project's approach which we would expect to be part of the Project in the Alpha Phase given its focus. This includes, for example, consideration as to what steps the Project's proposed solution would take to minimise the impacts of faults and to safeguard the equipment and/or assets from them.

Third, the Application does not provide sufficient clarity as to how the datasets the Project identifies could be incorporated into its proposed solutions. This, in turn, does not give confidence in the likelihood of the methodology to be scaled across GB and across other networks.

We have noted the assessment and recommendations of the Expert Assessors, recommending this Project for SIF Funding. However, due to the concerns outlined above, we do not consider the Project to have met all the Eligibility Criteria, particularly because we do not consider the Project to have a sufficiently robust methodology. We therefore do not approve this Project for SIF Funding.

Annex 3: Application assessment - Innovation Challenge: preparing for a net zero power system

Chapter 3 of this document provides detail about the scope of the Innovation Challenge: preparing for a net zero power system, as well as summarising the total number of Projects funded and total value of SIF Funding awarded for the Alpha Phase of round 1.

This annex details our assessment and decisions on Applications submitted in response to that Innovation Challenge. Our assessment of each Project is set out within:

- Pages 181 – 190 set out our assessment of each gas Project that has been selected for funding, together with our decision. All gas Projects which submitted an Application to this Innovation Challenge were selected for funding.
- Pages 192 – 207 set out our assessment of each electricity Project that has been selected for funding, together with our decision.
- Pages 207 – 212 set out our assessment of each electricity Project that has not been selected for funding, together with our decision.

Gas Projects selected for funding

HyNTS Waste Heat Recovery for Electrolysis

Table 45: Project Costs

Cost type	Cost
Total eligible costs	£429,703.00
Total contribution	£42,971.00
Total SIF Funding requested	£386,732.00

Project description

The Electrolyser Improvements driven by Waste Heat Recovery project looks to demonstrate efficiency improvements in hydrogen production through the use of waste heat produced in the transportation of network gases.

Summary of Expert Assessors' feedback

The Expert Assessors all recommended that the Project be considered for SIF Funding as it meets each of the Eligibility Criteria for the Alpha Phase and the Project directly aligns with the Innovation Challenge's goal. The Project was also considered to be innovative and novel, examining a key issue in emissions associated with gas transmission systems which could result in net benefits for gas and electricity consumers. The Expert Assessors also considered the Project to be costed competitively as it aligned with their expectations and to be providing value for money. The Project's plan and risk register were all considered sufficient and give confidence that the Project will be capable of progressing in a timely manner.

While the Expert Assessors considered the Project to have met the Eligibility Criteria, they did note that the Application could have been strengthened in a few areas. First, clearer articulation of the potential reductions or savings to consumers and the pathway for the Project. Second, inclusion of a electrolyser-focused Project Partner could help ensure a broader perspective be included in the Project's design.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We note the feedback from the Expert Assessors regarding the Project's alignment with the Innovation Challenge. The Project presents a novel approach to carbon emission reduction in the current gas transmission system, leveraging waste heat from hydrogen compressors in the National Transmission System (NTS). This has the potential to improve the efficiency of hydrogen electrolysis and also to deliver wider industrial applications. By contributing towards the preparation for a net-zero power system, it aligns with the Innovation Challenge's ambition for technological, market, and standard innovations readying the power system for net zero by 2035. Although we acknowledge the suggestion by one assessor for a the Project to have provided a clearer pathway to achieving Net Zero by 2035 and detailing carbon emission reductions, we consider the Project to have met this Eligibility Criteria.

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).

We consider the Project to have identified net potential benefits for primarily gas consumers but also note the potential for benefits to electricity consumers. By exploring the possibility of reducing compressor running costs through the utilization of hydrogen, the Project points towards both cost and emission reductions. While we recognise the high-level nature of the analysis might introduce uncertainties regarding the actualisation of these projected reductions, we also recognise that these will be further examined as part of the Alpha Phase. The yet undetermined financial viability of a green hydrogen-fuelled compressor system compared to BAU scenarios could further enhance benefits for consumers. We especially note the tangible benefits to gas consumers, specifically combined cycle gas turbine generators that heavily utilize the gas transmission system. Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We recognise the innovative ambition of the Project in leveraging waste heat from gas compressors to bolster the effectiveness of hydrogen electrolyzers and potentially facilitate electrical generation. This innovative approach underscores its novelty beyond standard and existing practices. By building upon a series of pertinent innovations, the Project advances the development trajectory for hydrogen use, culminating in on-site demonstrations. Additionally, its innovative strategy in reducing emissions during the gas compression into the national transmission system highlights its network innovation. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We do not consider the Project to undermine the development of competitive markets. The inclination towards open tendering in some facets of the Project reflects its alignment with market-friendly practices, potentially stimulating competitive markets further. Recognizing that the provision of NTS compressors operates within a specialized market, we noted positively the Project's proactive strategy to managing this as part of the Project. Looking at a wider perspective, the technological advancements proposed have potential applicability beyond just the gas transmission system, offering prospects to stimulate competitive markets in various other industries. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We consider the Project to be innovative, novel, and encompassing inherent risks. It puts forward a potential trajectory for the NTS integrated with hydrogen, contemplating its compatibility with future assets. The focus on hydrogen compressors, their operational compatibility with hydrogen within the NTS, and the innovative synergy between the two, especially using waste heat to enhance process efficiency, was considered novel. We note the feedback from the assessors that this approach isn't currently taken elsewhere, which we consider to demonstrate an innovative and novel approach. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We note positively the involvement of a diverse set of stakeholders in the Project, particularly the inclusion of both gas transmission networks and a commercialisation-centric partner. While we appreciate references to stakeholder engagement in the Project's outline, we agree with the assessors that greater clarity on this engagement would have strengthened the Application. Furthermore, echoing the sentiment of the importance of technological expertise, the addition of an electrolyser technology provider would add to the Project's stakeholder mix by providing additional technical expertise ahead of any deployment. Consequently, it would be beneficial for the Project to contemplate incorporating such a partner in its endeavours. However, gauging the present consortium against the activities set out for the Alpha Phase, we consider the Project to have participation from a sufficient range of stakeholders and therefore consider it to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We consider the Project to provide value for money and to be costed competitively as its cost structure aligns with other Alpha Phase Projects. The costs are adequate for the activities set out, though there's a little ambiguity concerning the cost-effectiveness of this innovation relative to business as usual approaches. We agree with the assessors and consider greater clarity against business as usual approaches to have potentially strengthened the Application. Nevertheless, taking into account the Project's overall costs and the split amongst the Project Partners, we consider the Project to have met this Eligibility Criteria.

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.

The Project demonstrates a strong methodology, supported by the detailed information within its plan and associated risk register. We agree with the Expert Assessors that the proven expertise of the Project Partners and the Funding Party in managing innovation Projects, provides confidence in a likely progression in the Alpha Phase. The Project's depth into engineering specifics, coupled with its

alignment with existing innovation models, was noted positively. Despite the potential uncertainties arising from the lack of an electrolyser partner, it presents an innovative and novel heat recovery approach. As a result, we consider the Project to have met this Eligibility Criteria.

HyNTS Hybrid Storage

Table 46: Project Costs

Cost type	Cost
Total eligible costs	£418,949.00
Total contribution	£43,580.00
Total SIF Funding requested	£375,369.00

Project description

The Hybrid Storage System will enable safe and efficient storage of hydrogen on operational sites using an optimised approach to hydrogen’s physical state against production and demand profiles.

Summary of Expert Assessors’ feedback

Overall, The Expert Assessors did not recommend this Project be considered for SIF Funding as it was not considered to have met all the Eligibility Criteria. The Project was considered to have successfully addressed the Innovation Challenge by introducing novel technologies for emissions reduction at compression sites, utilizing green hydrogen to power turbine compressors and eliminating CO2 emissions.

However, it fell short in demonstrating clear benefits to consumers compared to alternative solutions and the counterfactual because the Project did not provide sufficient clarity on how the proposed solution would ultimately result in net benefits consumers. This result in the assessors not considering the Project to have met Eligibility Criteria 2.

The Project was recognised for its network innovation potential, utilising hydrogen for gas compression and enhancing safety while reducing emissions, aligning with its decarbonisation goals.

The Project was not seen as undermining the development of competitive markets, as its technology could extend to other energy supply chains. Its combination of solid-state and gas storage for hydrogen was acknowledged as innovative and risky, requiring a high level of ingenuity. Stakeholder participation was deemed satisfactory, with a well-represented consortium.

However, the Project's value for money was not convincingly demonstrated, with uncertain returns on investment relative to consumer costs, especially considering its temporary transitional nature.

The Project's methodology and timeline were well-structured, providing confidence in its timely progression.

In conclusion, while the Project demonstrated innovation and potential for emissions reduction, it faced challenges in consumer benefit justification, value for money, and ensuring its transitional approach's viability.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have the potential to contribute to the decarbonization of the energy grid through innovative approaches. Specifically, the Project aims to replace natural gas as a turbine fuel with green hydrogen, thereby eliminating CO₂ emissions at key compression sites. The introduction of a novel hybrid hydrogen storage solution further enhances safety by reducing the amount of compressed hydrogen on site. We consider this to be aligned with the aims of the Innovation Challenge to reduce carbon emissions and improve operational safety in the

transition to a net zero power system. As a result, we consider the Project to have met this Eligibility Criteria.

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).

The overall feedback is very positive, and assessors acknowledged the Project as innovative and risky, requiring a high level of ingenuity. The Project has the potential to provide value to gas consumers by examining localised small-scale production of hydrogen which can be deployed where decarbonisation of decentralised assets is required. In preparation for the transition to net zero, this Project has the potential to reduce emissions in the interim while hydrogen is not yet readily available in the gas networks, and ensure reliable and stable future supply of green hydrogen by aligning production and demand from intermittent sources such as wind and solar.

We note the feedback from the Expert Assessors that while they agreed that the Project presented sufficient information on how hydrogen could be used for gas networks in the future, they considered there to be insufficient information on how that transition will ultimately benefit end consumers through the hybrid storage solution proposed compared to the counterfactual, which is to not employ this solution onto the UK compressor fleet.

However, we consider the Project to have identified potential to deliver net benefit to gas consumers. We acknowledge the potential emissions savings and cost efficiencies by using electrolytic hydrogen produced more cost effectively, with the support of an artificially intelligent management system. We also note that a hybrid storage system could provide a safe and reliable method for storing and releasing hydrogen within relevant timescales, and that these systems could be replicated or repurposed to provide benefits to gas consumers in other applications. In addition, hydrogen storage is an underdeveloped innovation area with strong relevance for gas network resilience. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We consider the Project to involve network innovation through its focus on the utilization of hydrogen to fuel the UK's gas compression fleet on the National Transmission Systems. Not only does this innovation aim to reduce emissions, but it also has the potential to enhance operational safety through the introduction of a novel hydrogen storage solution. The Project goes beyond business-as-usual approaches, requiring a high degree of innovation in both systems and equipment to meet its proposed solution. We consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

The Project does not undermine the development of competitive markets. The technology it aims to develop and its proposed solution has broader applications beyond just the energy sector; it could be potentially useful in other supply chains like transport fuelling stations. There are alternative solutions for fuelling compressor engines, and the Project's approach offers another option in the marketplace, thereby encouraging competition rather than stifling it. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We agree with the Expert Assessors that the Project embodies innovation, novelty, and an element of risk. It seeks to develop a hybrid approach to hydrogen storage—combining solid-state with gas storage—at a scale not yet seen in the gas sector. This demonstrates both its innovative and novel approach, with elements of risk underpinning it. The incorporation of AI technology to determine the hydrogen flow needed for the turbines was also considered to be another novel aspect of the Project's proposed solution. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to include a robust range of stakeholders, sufficient to have met this Eligibility Criteria. All relevant parties and stakeholders have been clearly identified, represented, and engaged, and we consider them to be well

aligned with the Project's scope. The consortium involved provides a well-balanced mix of regulators, energy users, and technical specialists, adding a layer of confidence to the Project's collaborative approach. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We agree with the Expert Assessors that the specific work detailed in the Project was costed competitively against industry norms. In addition, we consider there to be added value with synergies between the Project and other HyNTS projects recommended for funding elsewhere.

While we note the feedback from the Expert Assessors that the potential benefits set out relative to the cost to the consumer could have been better articulated or justified, we consider that this project could enable use of constrained electrical energy which would provide a benefit to the energy system and could provide lower costs to consumers. Additionally, utilising locally produced renewable energy sources would require storage, such as that which will be designed in this project, to enable the alignment of production and demand which could also result in improving the efficiency and reducing the Levelised Cost of Hydrogen (LCOH) passed on to the consumer.

Furthermore, the implementation of the Medium Combustion Plant Directive (MCPD) in the 2030s could present financial incentives to reduce emissions involved in network operation for gas turbine driven compressors under 50MW. The investigation of decarbonising gas turbine driven compressors at this stage could reduce costs that would be incurred in the future as part of this directive, especially considering gas turbines at compressor stations are the largest source of emissions on the National Transmission System (NTS).

There was also uncertainty from the Expert Assessors on how this Project could provide significant cost savings due to its implementation as a temporary solution in the run up to the transition to hydrogen, leaving a potential for stranded assets. In our view, the Project has the potential to repurpose these assets in other sectors such as the transport sector, which could be valuable in hard to decarbonise industries including heavy duty transport. As a result, we encourage

the Project to engage with other relevant stakeholders which could be targeted to grow the potential market for this solution, and to consider future repurposing of these assets in the Alpha Phase.

Overall, we consider this approach to have the potential to minimise the cost for the transition to net zero through reuse of assets and maintained lifetime, which gives us confidence that the Project presents value for money and is costed competitively. We therefore consider the Project to have met this Eligibility Criteria.

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.

We agree with the assessors that the Project is well thought through and has a robust methodology, giving confidence in its ability to progress in a timely manner in the Alpha Phase. The Application laid out a logical and deliverable methodology, with clearly identifiable key steps and milestones to help the Project navigate through the Alpha Phase successfully. As a result, we consider the Project to have met this Eligibility Criteria.

Electricity Projects selected for funding

Artificial Forecasting

Table 47: Project Costs

Cost type	Cost
Total eligible costs	£522,445.00
Total contribution	£54,607.00
Total SIF Funding requested	£467,838.00

Project description

As Distribution Network Operators (DNOs) develop their distribution system operator functions, the current annual process used to forecast load at extra-high-voltage/high-voltage needs to become increasingly granular, at the monthly, weekly, daily and hourly level, to support flexibility dispatch and defer or avoid reinforcement. Moreover, the increasing prevalence of Low-voltage monitoring data enables new use cases to support network planning and the extension of flexibility

markets at RIIO-ED3. The Artificial Forecasting project will address these unmet needs by building innovative AI solutions to expand load forecasting capability at primary (EHV-HV) and secondary (HV-LV) substations, enabling the development of Distribution System Operator (DSO) functions across the sector.

Summary of Expert Assessors' feedback

This Project has been recommended for SIF Funding as it was considered to have met all the Eligibility Criteria.

The Expert Assessors considered the Project to have addressed the Innovation Challenge because it focuses on understanding load profiles for a Net Zero emissions power system, especially at the low voltage level in various network areas. This aims to improve load forecasting for short-term gains and overall operational efficiency toward Net Zero energy provision.

The Project's potential to benefit electricity consumers was recognised through enhanced load flow modelling, boosting network resilience and operational savings as per the Innovation Challenge's objectives. It was considered to involve network innovation, exploring advanced forecasting and data utilisation for accurate load estimation, aligning with Eligibility Criteria. The Project doesn't undermine competitive markets; instead, it could strengthen them by facilitating precise evaluation and trading of flexibility services.

While considered an innovative and novel Project for aggregating diverse data to optimise network operations, it was acknowledged that some of these functions are also part of the networks core business operations and recommended the Project more clearly articulate and recognise this aspect of the Project.

The Project Partners were considered sufficient, covering crucial stakeholders, customers, and other DNOs. Despite higher than anticipated costs for the Alpha Phase due to algorithm de-risking, the Project was considered value for money as these costs were sufficiently justified. The methodology was seen as robust, outlining work packages, milestones, and responsibilities for a structured execution path. Yet, gaps in data requirements and business process integration were noted by the assessors and they recommended these be looked at with additional mitigation actions identified at the earliest possible time.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to align with the Innovation Challenge by aiming to prepare for a net-zero emissions power system. It has the potential to enhance the understanding of load profiles at different voltage levels and aims to improve forecasting for Distribution Network Operators (DNOs). This could potentially increase operational efficiency and facilitate the transition to a Net Zero energy service, which is directly aligned with the aims of the Innovation Challenge. As a result, we consider the Project to have met this Eligibility Criteria.

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).

The Project is considered to have clearly identified potential to deliver net benefits to electricity consumers. By implementing advanced load flow modelling, the system's resilience could be significantly improved. This could result in cost savings for consumers as network companies pass on operational efficiencies in the form of reduced costs. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

The Project is recognized for its potential to bring innovative advancements to network operations by utilizing cutting-edge forecasting methods and data analytics for precise load estimation. These innovations could result in significant improvements over current forecasting methods, particularly at more granular levels.

The Project's clear roadmap outlining the innovation process was noted favourably. Nonetheless, we agree with the Expert Assessors' feedback that this could have been strengthened in the Application. Specifically around how the Project evidences how the proposed solution improves upon existing, standard practices, thereby also providing stronger justification as to the level of network innovation. We note the recommendation from the Expert Assessors to include a Project-specific on this area specifically to mitigate any uncertainty around this aspect of the Project and will include one in the Project's Project Direction.

Despite this, we consider the Project to have sufficiently set out how its proposed solution involves network innovation and we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

The Project is not considered to be undermining the development of competitive markets and is instead recognised for its potential to stimulate competitive markets. By enabling more accurate forecasting and evaluation of flexibility services, the Project could facilitate healthier competition among network operators and participants. Additionally, the potential for similar solutions from other software providers could further stimulate competitive markets. This would potentially enable other market players to develop similar solutions, reinforcing the competitive landscape.

As a result, we consider the Project to have met this Eligibility Criteria, with additional recommendations to further strengthen its positive impact on competitive markets.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

The Project has an innovative nature in its attempt to aggregate diverse data sources for optimizing network operations. However, we note the feedback from the assessors that the Application could have provided greater details to strengthen its classification as innovative, novel and/or risky.

While the integration of AI into forecasting is becoming a common practice, the Project introduces innovation by applying these technologies in the unique context

of DNOs and emerging flexibility markets. This adds a layer of novelty and risk, as it involves applying known technologies in a new domain where the impacts and outcomes are less certain. We also note that the Project will continue to investigate these aspects of the Project as part of the Alpha Phase.

Overall, the Project is considered to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

The Project has included participation from a sufficient range of stakeholders for the Alpha Phase activities set out. This stakeholders include not just consumer oriented organisations, but also engagement with other Distribution Network Operators (DNOs), thereby providing confidence in the holistic approach to stakeholder involvement set out by the Project.

We also note positively the Project's planned engagement with additional stakeholders during the Alpha Phase, which further reinforces that the Project includes sufficient participation from a range of stakeholders for its proposed solution to progress in the Alpha Phase.

As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

The Project is providing value for money and is costed competitively because the Project's overall costs are reasonable, with day rates which are aligned with industry norms. We note the feedback from the Expert Assessors that the rates for specific activities like algorithm de-risking are on the higher end, but we also agree with them that this reflects the specialized skill sets required for these tasks and we consider the Project to have provided sufficient justification for these day rates. Overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

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.

The Project presents a robust and well-structured methodology. It includes a comprehensive plan that details the scope of work and also outlines the timeline and responsibilities for the different activities within the Alpha Phase. This methodology provides confidence in the Project's ability to progress in a timely and organized manner in the Alpha Phase.

We do note the feedback from the assessors that there are several areas where the Application could have been strengthened but we agree with them that these are relatively minor. These primarily relate to greater clarity on the data requirements, the Project’s potential integration into existing business processes and more technical expertise from the Project team to further demonstrate an in-depth understanding of energy systems and data capabilities. However, like the assessors, we also recognise that these areas of the Project will continue to be examined as part of the Alpha Phase and we do not consider the reservations identified by the assessors to be sufficient enough for the Project to not be considered to have met the Eligibility Criteria. As a result, we consider the Project to have met this Eligibility Criteria.

Flexible Queue Management (Alpha)

Table 48: Project Costs

Cost type	Cost
Total eligible costs	£302,022.00
Total contribution	£56,606.00
Total SIF Funding requested	£245,416.00

Project description

A key milestone in the UK's 2050 net zero commitment is to decarbonise the UK's electricity system by 2035. Ensuring our electricity networks are effectively utilised to support this ambition is of utmost priority.

In this project we are re-evaluating the assumptions in the design and operation of demand and generation connections to the GB electricity distribution network to explore if the existing system could be utilised more efficiently. By exploiting the rich, emerging vein of high volume, real/near time energy data from both sides of

the connection, can we unlock capacity and remove/manage constraints and enable swifter new-connections timelines?

Summary of Expert Assessors' feedback

The Expert Assessors considered the Project to have met each of the Eligibility Criteria set out and the Project to be an innovative approach to manage forthcoming low carbon technology connections, an area of significant focus at the moment. The Project's central aim of developing a real-time tool that maximizes grid connection capacity was considered to represent benefits for consumers, both economically and environmentally. While the Project was considered to have participation from a sufficient range of stakeholders, to be costed competitively and to represent value for money, the Expert Assessors did note that greater justification in the Application as to why one Project Partner has most of the costs would have strengthened the Application. Furthermore, the Project was considered to present a novel solution to an ever-increasing challenge, particularly as conservative queue management decisions are gradually becoming outdated. Overall, the Expert Assessors have recommended this Project be approved for SIF Funding.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We note the feedback from the Expert Assessors regarding the Project and we consider the Project to have met this Eligibility Criteria because it focuses on expediting and optimizing the connection of low carbon technologies to the network. This approach potentially reduces consumer costs and wait times for new supplies. We find this approach and focus to be directly aligned with the Innovation Challenge's aim of supporting the integration of novel assets and enhancing market accessibility to increase resources that provide system stability services ahead of

2035. Through exploring innovative techniques for optimizing queue management, the Project not only seeks to enhance network management but also contributes towards achieving Net Zero by facilitating better connections of low carbon technologies to the network.

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).

We note the feedback from the Expert Assessors and we agree with the Expert Assessors that the Project has met the Eligibility Criteria because it has clearly identified a potential to deliver net benefits to electricity consumers, including both small-scale consumers and larger users. The Project's emphasis on facilitating swifter connections for low carbon technologies is recognised and it has the potential to expedite the realization of carbon benefits and presents cost-saving opportunities for consumers. The prospect of rapidly connecting renewable electricity sources without the need for extensive reinforcement work could result in financial benefits for consumers and environmental benefits due to the increased number of low carbon technologies connected to the grid. We recognize that such benefits can be direct for both larger consumers awaiting connection and average domestic consumers.

Eligibility Criterion 3: Projects must involve network innovation.

We consider the Project to have met this Eligibility Criteria because it offers a novel approach to the connections process at Grid Supply Points (GSPs), where new developments and innovations can deliver significant impacts. The Project's incorporation of network innovation, through intricate data analysis of load patterns and generation sources, aims to dynamically optimize network capacity. We consider this approach strategy to surpass business as usual efforts, as it aims to leverage the grid's 'maximum rating' whenever possible, thus eliminating the need for additional reinforcement endeavours. Furthermore, the Project's objective to refine the management and integration of new inclusions to the network further demonstrates network innovation.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We agree with the assessment of the Expert Assessors and consider the Project to have met this Eligibility Criteria. The Project does not undermine the development of competitive markets given that its primary emphasis is on the approach and management of the UK electrical supply grid, which is overseen by the DNO. The Project's proposed scope and activities are therefore not considered to undermine or disrupt competitive market dynamics. Recognizing that the benefits arising from this Project are broad-based and generic, we also note that it does not provide undue advantage to a singular entity, thereby potentially resulting in the potential for new competitive markets.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We agree with the Expert Assessors and consider the Project to have met this Eligibility Criteria due to its innovative and novel nature. The introduction of a new approach to managing connection queues on the electricity network emphasizes its innovative and novel approach. While we acknowledge the Expert Assessors' feedback that more detailed insights into the analysis and granularity would have enriched the Application, strengthening its evidence on innovation, we still regard the Project's approach as both innovative and novel. Additionally, we recognize the inherent risks associated with the Project's proposed solution of a new approach to managing connection queues. Overall, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to have met this Eligibility Criteria. We consider the Project group to encompass a relevant assortment of industry and regulatory stakeholders. Their inclusion, especially in dissemination activities, was viewed positively and was considered to be an important component of the Project's approach. However, we also echo the concerns of the Expert Assessors in emphasizing the importance of continuous engagement from all stakeholders throughout the Project's duration. This will ensure that the solutions proposed resonate with and are appropriate for every stakeholder involved.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We agree with the Expert Assessors and consider the Project to have met this Eligibility Criteria. We recognize that the Project’s overall costs seem proportionate to its scope. While we observed that a significant chunk of the work and the associated costs are allocated towards a single Project Partner, we concur with the Expert Assessors that these expenses have been costed competitively and are justified, given the simulation focus of the Project. We also note positively the contributions made by the Project group, which provides further confidence that the Project is providing value for money to consumers.

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.

We agree with the Expert Assessors and consider the Project to have met this Eligibility Criteria. We appreciate that the Project's methodology adheres to international standards and is structured in a logical manner that instils confidence in its timely progression. While we acknowledge the importance of the depth of analysis in work package 1 for the overall success of the Project, we share the Expert Assessors' confidence in the Project’s strategic plan and approach.

Powering Wales Renewably

Table 49: Project Costs

Cost type	Cost
Total eligible costs	£777,909.00
Total contribution	£278,733.00
Total SIF Funding requested	£499,176.00

Project description

Pweru Cymru yn adnewyddol (Powering Wales Renewably, PWR) brings together the Welsh Government, power system users and network operators who collectively span the energy system value-chain. Together, they will collaboratively identify the innovation priorities required to support the delivery of the Welsh Government's decarbonisation plans, prepare for a net zero power system and deliver net benefits to Wales's citizens and communities.

Through delivery of a digital twin of the whole Welsh transmission and distribution system combined with other datasets, PWR will provide a digital common interface to accelerate the integration of renewable generation and decarbonised demand into the electricity system.

Summary of Expert Assessors' feedback

Overall, the Expert Assessors considered the Project to be ambitious, squarely aimed at digitalizing the energy system and steering it towards Net Zero. The Project's ambition demonstrates its novelty and innovative nature, going beyond business-as-usual approaches. The Project also has a strong and credible stakeholder group for the activities set out, and the Expert Assessors recommended that the Project, should it be successful at the Alpha Phase, focus on the core of the Problem in the Alpha Phase to ensure that the core problem is fully understood prior to any deployment. As part of this the Expert Assessors have recommended a Project-specific condition for the Project to examine opportunities for greater participation from a wider range of stakeholders. The assessors also considered the Project to be costed competitively and to be providing value for money with overall costs which were aligned with industry norms and reasonable for the activities set out. As a result, the Expert Assessors have recommended this Project be considered for SIF Funding.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

The Project aligns with the Innovation Challenge by fostering the integration of novel assets into the electricity system. Its focus on creating a platform to boost the inclusion of innovative assets in both energy and flexibility markets is directly in line with the objective of preparing the power system for net zero by 2035. The Project's emphasis on supporting Wales's ambitious renewable energy

transformation ambitions makes it aptly suited for its chosen geographical context. Additionally, its methodology of using datasets and implementing governance could have implications not only for Wales but potentially on a broader scale.

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).

The Project is considered to have identified potential to provide net benefits to electricity consumers. Its innovative utilization of digital twinning offers a holistic perspective on the interplay between renewable electricity demand and supply. This approach is anticipated to yield consumer benefits through various mechanisms: cutting flexibility service expenses, reducing constraint costs, streamlining the management of supply and demand-side assets, and bolstering effective Local Area Energy Planning. These measures collectively present an opportunity for cost savings. In addition, the Project encompasses environmental advantages through potential reductions in carbon emissions.

Eligibility Criterion 3: Projects must involve network innovation.

The Project is considered to involve network innovation in its innovative approach, particularly in integrating digital assets and network data on a scale unprecedented in the energy sector. Central to this innovation is the creation of a Transmission and Distribution (T&D) digital twin, which is specifically designed to tackle challenges identified by stakeholders. While its novelty is evident, some concerns arise regarding potential misalignment among stakeholders and a possible underrepresentation of community energy. Despite these considerations, the project involves network innovation, as it aims to catalyse the renewable-powered electrification across various sectors, including heat, transport, and local energy, while also emphasizing demand responsiveness and flexibility.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

The Project is viewed as supportive of competitive markets rather than undermining them. The Project's commitment to sharing findings coupled with its pursuit of generating new market insights, positions it as a potential enabler for

the development of competitive markets. We noted positively the Project's intention to craft a digital common model, which could underpin the creation of a competitive platform. Nevertheless, as a note of caution, we recommend the Project ensures that throughout the Alpha Phase it maintains its pro-competitive stance.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We agree with the Expert Assessors and consider the Project to be innovative and risky. Characterized by its efforts to integrate digital assets and data on an unprecedented scale, the Project is both innovative with challenges which demonstrate its riskiness. The development of a digital twin for the Welsh T&D system, coupled with the inclusion of ground-up data, underscores its innovation and potential risks. However, the expertise of the Project team provides confidence in their ability to navigate these challenges. The vision to harness local renewable energy and incorporate local planning emphasizes the project's overarching ambition.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

The Project has participation from a sufficient range of stakeholders for the activities set out. The note positively National Grid's involvement as the Funding Party and the participation of a diverse set of stakeholders, including both private and public sector entities, highlighted by the Welsh Government's inclusion. However, we recognise the feedback from the assessors that the scope of stakeholder engagement could be more inclusive. Specifically, there's room for better representation from asset operators, consumers, local communities, and non-energy businesses. These stakeholders can have essential insights into flexibility, local energy planning, and more. Thus, while the Project meets the criteria, there is an opportunity for the Project to explore opportunities to enhance stakeholder involvement during the Alpha Phase, ensuring a comprehensive understanding of the challenges as the project progresses.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

The Project provides value for money and is costed competitively. The significant financial contributions from consortium members bolster confidence in the Project's financial standing. The costs, considering the Project's scope, ambition, and associated risks, were deemed reasonable and competitive. However, enhanced transparency concerning the allocation of SIF Funding would have strengthened the Application, especially regarding the DNOs and renewable energy specialists within the consortium. This clarity would help to ensure that funding aligns with the magnitude of their role. Despite this, we agree with the Expert Assessors and consider the Project to have met the Eligibility Criteria.

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.

The methodology underpinning the Project is robust and credible, instilling confidence in the Project's likely progression. Its comprehensive planning tools, like the Gantt chart and risk analysis, clearly set out key activities and potential risks. Nonetheless, the plan could have been strengthened with a finer level of detail on larger tasks and more frequent interim deliverables. Though the Project team is competent, there's an inherent risk surrounding stakeholder alignment and engagement. Incorporating a clearer connection with other Welsh renewable initiatives would have provided a more holistic picture and bolstered the Project's overall standing. However, overall, we consider the Project to have met this Eligibility Criteria.

INSIGHT

Table 50: Project Costs

Cost type	Cost
Total eligible costs	£252,553.00
Total contribution	£25,460.00
Total SIF Funding requested	£227,093.00

Project description

INSIGHT (Innovative Network Status Intelligence Gathered by Holistic use of Telemetry) aims to deliver a real-time alert and control system that monitors and

mitigates different types of power network oscillation events. The Project will combine learnings from past events with new modelling and simulation techniques to better understand the nature of these new oscillations and how to predict and address them in network design and operation for future events.

INSIGHT will improve our ability to manage weaker networks, enhancing stability and reliability and avoiding alternative operations that would reduce the levels of renewable generation able to run on the network.

Summary of Expert Assessors' feedback

The Expert Assessors considered the Project to present a compelling proposal for a complex Problem, with an adept team with the potential for delivering results. While the Expert Assessors noted that there may be some ambiguity for the proposed solution beyond the Alpha Phase, they also noted the clear innovation and novelty of the research activities set out for the Alpha Phase, which could lead to further innovations. The assessors noted positively the Project's emphasis on outreach and communication.

At its core, the Project was considered to be examining a whole-system challenge integral to the clean energy transition. Despite being in an early phase, the Project demonstrated a structured approach in building the vital data and knowledge base, supported by a relevant and suitable group of stakeholders. While certain facets of the Project could benefit from a clearer articulation of expected outcomes, such as datasets, technology roadmaps, and standards recommendations, the Application stood out in its overall approach. It initiates with a holistic analysis of a pressing problem—set to intensify with the growing integration of renewables in the grid—and employs modelling and simulation techniques for a deeper understanding. Overall, the Expert Assessors considered the Project to have met the Eligibility Criteria and have recommended it be considered for SIF Funding.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We recognize the importance and emergence of the technical issues related to power network oscillations, especially given the increasing integration of renewables into the grid. We note the feedback from the Expert Assessors that such oscillations have implications both in the UK and globally, and if they unchecked, they could potentially cause frequent power disruptions, negatively impacting numerous consumers and jeopardizing the power supply's reliability. Given these considerations, we consider the Project's focus to be directly alignment with the Innovation Challenge scope, emphasizing the need to maintain grid stability despite the increase in renewable integrations. We therefore consider the Project to have met this Eligibility Criteria.

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).

We recognize the Project's multifaceted value proposition aimed at enhancing the risk management capabilities of network companies. This has the potential to set the foundation for improved operational efficiency and also directly translate to benefits for consumers. The potential for a more resilient balancing system, coupled with the capability to seamlessly integrate higher volumes of renewables, offers consumers value in terms of both cost savings and system reliability. Additionally, we appreciate the Project's potential to mitigate the technical risks related to power network oscillations. We consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We consider the Project to involve network innovation. We note the feedback from the Expert Assessors that the Project takes a starting point from academic research and aims to further state-of-the-art methodologies, potentially introducing innovative detection and management systems for oscillations. We agree with the assessors and consider this approach to surpass the business as usual approaches. We also acknowledge the possibility that the innovative nature of the Project might

catalyse the need for more extensive research and innovation in the future. We consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We acknowledge that the Project's proposed solution is intended to serve as a generic tool benefiting all potential stakeholders. This approach ensures that the development of competitive markets is not undermined. We note the feedback from the assessors that the introduction of such a solution might even foster the emergence of new competitive markets. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We recognize the Project's proposed solution involves focusing on intricate and uncertain methods that are necessary for addressing the identified Problem, and therefore consider it to be both innovative and risky. The early-stage data gathering and engagements with global learning points, coupled with the budding state of current abilities, reinforces the innovative and risky nature of the Project. We also take note of numerous aspects within the Project where the solutions are not readily apparent, further emphasizing its innovative and novel approach. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We agree with the assessors and consider the Project to have participation from a sufficient range of stakeholders for the activities set out in the Alpha Phase. The composition of the Project team spans across private entities, public institutions, and academic circles, which gives confidence that the Project will develop a potential solution which is widely applicable. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We consider the Project to be deliver value for money and to be costed competitively. We note the feedback from the assessors that the Project has met this Eligibility Criteria, especially considering the complexity of the identified Problem. The overall costs are reasonable and bolstered by the experience of the Project team, which provides confidence that the Project is costed competitively. Additionally, while the Project largely revolves around academic research, we consider the total costs and requested SIF Funding to be in alignment with the scope of the Project’s activities set out. Therefore, we consider the Project to have met this Eligibility Criteria.

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.

We consider the Project’s materials to be well thought through and clear. The Gantt chart and methodology were clearly set out and well-defined and the Project has clearly outlined its interdependencies. This gives confidence that the Project will be capable of progressing in a timely manner in the Alpha Phase. Furthermore, the clear timescales set out by the Project for the work packages and the Alpha Phase activities set out provide further confidence in the Project’s capability to progress in a timely manner. We therefore consider the Project to have met this Eligibility Criteria.

Electricity Projects not selected for funding

Shifting Currents

Table 51: Project Costs

Cost type	Cost
Total eligible costs	£482,150.00
Total contribution	£157,224.00
Total SIF Funding requested	£324,926.00

Project description

Shifting Currents will investigate how flexible load shifting can be embedded in the operations of the drinking and wastewater networks of water utilities, to deliver

whole systems benefits to customers of reduced carbon intensity of water and electricity networks and cost-effective management of electrical capacity.

Alpha phase of the project will specify the new processes, technical systems and commercial agreements which would deliver a trial in Beta of shifting the load at water sites around a main water load centre to on-site renewable generation.

Summary of Expert Assessors' feedback

This Project was not recommended for SIF Funding by all Expert Assessors as it was not considered to have met all of the Eligibility Criteria.

The Expert Assessors evaluated a Project that aimed to address an Innovation Challenge by introducing more flexible services in an underutilised sector, focusing on water and also aligned with the Net Zero carbon emissions goal. However, the focus on water innovation was considered to overshadow potential network innovation aspects. While the Application demonstrated the innovative use of flexibility between water and electricity networks, further evidence of network innovation was needed. It was not clear that any additional network innovation was needed to move directly to delivery of flexibility services by the water sector.

The Expert Assessors also did not consider the Project's potential benefits to have been clearly outlined, and considered it to have the potential to primarily benefit water companies rather than electricity consumers. This raised concerns about the Project's impact on electricity consumers' competitiveness and the lack of detailed information regarding benefits.

The Project was seen to lack clarity in terms of its potential impact on gas or electricity consumers, and further guidance from regulatory bodies like Ofgem was suggested by the assessors. The Expert Assessors suggested that a joint application to both innovation funds (Ofgem's and Ofwat's) might be beneficial for the Project going forward.

The Expert Assessors considered the Project's participation of stakeholders sufficient, with representation from industries and regulatory bodies. However, concerns were raised about the actual contribution of Project Partners and the lead network's lack of knowledge about the Project during the interview. Clearer articulation of these would have strengthened the Application.

The Project's value for money and cost competitiveness were questioned due to low benefits for electricity consumers and high day rates for one of the Project Partners. The Expert Assessors therefore did not consider the Project to be providing value for money and costed competitively.

Despite these issues, the Expert Assessors acknowledged the Project's robust methodology, well-organised plan, and clear progression path, which inspired confidence in its timely execution. Overall, the Project showed promise in terms of innovative load shifting between water and electricity networks, but it needed to address concerns related to network benefits, stakeholder participation, network innovation, and cost-effectiveness to meet all the Eligibility Criteria.

Ofgem funding decision: SIF Funding not approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have met this Eligibility Criteria because it addresses the Innovation Challenge by introducing more flexible services. The Project's ability to reduce carbon emissions through innovative load shifting between water and electricity networks aligns with the Net Zero goal. By emphasizing water network operation and plant efficiency, the Project offers a unique approach to industry load shifting, anticipating both site-specific and broader impacts that benefit stakeholders. We therefore consider the Project to have met this Eligibility Criteria.

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).

We do not consider the Project to have met this Eligibility Criteria because it has not clearly identified potential net benefits to gas or electricity consumers. While the Project recognizes the benefits of grid flexibility services for cost-effective system operation, the primary beneficiaries appear to be water companies. We also

share the concern highlighted by the Expert Assessors that electricity consumers could face reduced competition for flexibility services, potentially leaving them worse off. Greater details about the proposed solution's potential benefits to electricity consumers would have strengthened the Application.

Eligibility Criterion 3: Projects must involve network innovation.

We do not consider the Project to have met this Eligibility Criteria due to the lack of clear evidence surrounding network innovation. Although the Project presents an untapped flexibility service in the water use case and potentially commercially innovative aspects, the clarification on the elements of network innovation was missing during the interview, with most answers leaning towards water innovation. While the Application highlights the innovative use of the flexibility in both the water and electricity networks through interoperability and load management, it lacks sufficient evidence of network innovation. We note the feedback from the assessors that, upon probing during the interview, the Project indicated that the innovation approach is rather simplistic, which raises questions about the level of network innovation in this Project.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We do not consider the Project to have met this Eligibility Criteria as it hasn't clearly articulated how it ensures the development of competitive markets isn't undermined. The ambiguity surrounding who would take ownership of the overall benefits and the regulatory interlinks proposed by the Project raises concerns. Additionally, there's uncertainty about how other electricity consumers can compete within flexibility markets without being disadvantaged by water utilities providing this service.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

While we recognize the novelty of the Project in exploring the use case of water flexibility, which hasn't been previously examined, we do not consider the Project to have met this Eligibility Criteria in terms of innovation or risk. The differentiation of this Project from other flexibility services or load shedding techniques remains unclear, thereby limiting the level of innovation and riskiness in the Project. As

highlighted in Eligibility Criteria 3, there is ambiguity surrounding its relevance to energy network innovation and the rationale for electricity consumers funding it. While there might be innovative elements in the commercial arrangement, the evidence presented for such innovation is sparse.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to have met this Eligibility Criteria based on its engagement with a comprehensive range of stakeholders, encompassing both industry and regulatory bodies. We agree with the assessors that the 16 illustrative use cases further emphasize the importance of expansive stakeholder engagement beyond the current participants, aligning with the Project's objectives. However, we share the concern with the assessors regarding the potential nominal inclusion of some Project Partners, given the limited evidence of their active participation, especially during the interview process. The absence of other Project Partners from the interview and the perceived minimal role of the Funding Party in the Project raises some questions. Nevertheless, the prior success of the Project team in the NIA project (FLOWERS) provides confidence in their capability.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We do not consider the Project to have met this Eligibility Criteria. The benefits projected for the electricity consumers appear limited, and there seems to be an insufficient justification of the resources provided. Notably, the feedback from the assessors around the day rates for the Smarter Grid Solutions Project Partner being significantly above industry standards, raises concerns around whether the Project is costed competitively. Additionally, during the interview, the Project Partners were not considered to have addressed the questions relating to the costs of the Project.

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.

We consider the Project to have met this Eligibility Criteria due to its robust methodology. The Application presents a clear and structured plan that provides

assurance of its capability to progress in a timely fashion. The well-defined planning, built upon previous outcomes, further solidifies our confidence in the Project's potential for successful and prompt progression.

Annex 4: Application assessment - Innovation Challenge: supporting a just energy transition

Chapter 4 of this document provides detail about the scope of the Innovation Challenge: supporting a just energy transition, as well as summarising the total number of Projects funded and total value of SIF Funding awarded for the Alpha Phase of round 1.

This annex details our assessment and decisions on Applications submitted in response to that Innovation Challenge. Our assessment of each Project is set out within:

- Pages 213 – 217 set out our assessment of each gas Project that has been selected for funding, together with our decision. All gas Projects which submitted an Application to this Innovation Challenge were selected for funding.
- Pages 217 – 235 set out our assessment of each electricity Project that has been selected for funding, together with our decision. All electricity Projects which submitted an Application to this Innovation Challenge were selected for funding.

Gas Projects selected for funding

Hy-Fair - Alpha

Table 52: Project Costs

Cost type	Cost
Total eligible costs	£547,388.00
Total contribution	£84,187.00
Total SIF Funding requested	£463,201.00

Project description

Hy-Fair aims to address the challenges faced by Consumers in Vulnerable Situations (CIVS) and Small Businesses during the transition to hydrogen and other low carbon technologies. Through the Hy-Fair Fairer Warmth Hub, the Project will provide a central environment equipped with specialized tools and tailored guidance to empower community champions, individuals, and small businesses. Hy-Fair's Innovative features will include a streamlined system for CIVS to access financial support, guidance and simplified access to resources, data analytics for precise planning, and community engagement tools. By fostering place-based approaches, Hy-Fair will encourage collaboration and help communities deliver a fair energy transition.

Summary of Expert Assessors' feedback

Overall, the Expert Assessors considered the Project to have met all the Eligibility Criteria and recommend it be considered for SIF Funding. The Expert Assessors considered the Project to be innovative and novel, having participation from a wide variety of stakeholders sufficient for the Project's activities, and is clearly aligned with the Innovation Challenge. Furthermore, its proposed approach to supporting vulnerable and disadvantaged consumers in the transition to low-carbon technologies was considered to involve network innovation and an element of risk in attempting a new approach in a challenging area. While it was noted greater clarity on the extent of innovation would have strengthened the Application, it was also noted that much of the Alpha Phase will be focused on further developing this area of the Project.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have directly addressed the Innovation Challenge. Its emphasis on supporting vulnerable and disadvantaged consumers during the low-carbon transition aligns with the main aims of the Innovation Challenge. The Project's proposed toolkit, designed specifically for vulnerable consumers, advances the understanding of consumer vulnerability in the context of energy networks and the transition to net zero. The foundation of research that underpins these tools has the potential to improve the coordinated efforts across different organizations. We therefore consider the Project to have met this Eligibility Criteria.

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).

We acknowledge the potential of the Project to deliver net benefits to gas consumers, mainly by enhancing their access to energy efficiency advice and actionable insights. This initiative could empower these consumers with the necessary knowledge and tools to embrace energy-efficient practices, yielding real-world advantages in a transition to low-carbon technologies. Additionally, we also recognise a broader impact of the Project, as it could bring benefits to a more extensive consumer base. This is primarily due to its potential in mitigating delays and reducing planning mishaps in network development – challenges that often arise from ineffective consumer engagement. Recognizing the highlighted benefits, such as improved consumer support and the broader social advantages, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We note that the Project presents network innovation beyond business as usual approaches, especially with the proposal to establish a hub and tools aimed at

assisting vulnerable consumers in the transition to low-carbon heating. The introduction of these tools could pave the way for ground-breaking changes in how networks leverage and integrate data while also enhancing consumer support. Such a move has the potential to amplify the support to vulnerable groups and marks an evolution in network functionality and consumer-oriented operations.

While we recognize the Project's efforts in showcasing network innovation, we consider that a more detailed outline regarding the tools' scope and functionalities would have strengthened the Application. Nevertheless, recognising that the Project will develop this further during the Alpha Phase, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We agree with the assessors and do not consider the Project to undermine the development of competitive markets. This is primarily because the results and activities of the Project will be made publicly accessible, ensuring no undue commercial advantage for particular stakeholders. With the ability for other entities to replicate the outputs, other similar offerings could be developed, potentially stimulating commercial markets. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We recognize the innovative, novel, and risky nature of the Project. The concept of developing a specialized hub and tools is both innovative and novel, addressing the complexities and gaps present in current methods. We acknowledge the feedback from the assessors that the Application could have provided greater clarity on these innovative aspects. Furthermore, the proposed approach combined with extensive stakeholder and community engagement, introduces a level of risk to the Project's progress as it has not yet been undertaken in GB. Given these factors, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We consider the Project to have participation from a sufficient range of stakeholders for the Project's activities. The Project team mix is diverse, and includes involvement of multiple gas distribution and transmission networks, representation from electricity distribution networks, energy suppliers, local authorities, housing associations, and community-focused social enterprises. This underscores its collaborative approach and provides assurance that the Project has sufficient participation for the activities set out. We note and agree with the assessors that the inclusion of the Centre for Energy Equality further enhances this extensive stakeholder participation. Given the Project's wide stakeholder involvement, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We acknowledge the financial contributions from the Project consortium partners which gives us confidence in the Project's value for money. The overall costs of the Project are deemed appropriate for the activities set out, suggesting competitive costing. We note and agree with the feedback from the assessors that the potential social benefits, when juxtaposed with the overall costs, further affirm our belief in the Project's value for money. As such, we consider the Project to have met this Eligibility Criteria.

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.

We recognize the thoroughness and clarity of the Project's methodology, plan, and risk register. The detailed approach outlined in these documents, combined with the focus on Project management, instils confidence in the effective management and timely progression of the Project. As a result, we consider the Project to have met this Eligibility Criteria.

Electricity Projects selected for funding

VIVID - Vulnerability Identification Via informative Data

Table 53: Project Costs

Cost type	Cost
Total eligible costs	£516,490.00
Total contribution	£67,965.00
Total SIF Funding requested	£448,525.00

Project description

VIVID will attempt to unlock the full potential of data held by the energy industry, local authorities and the third sector for the benefit for people and communities in vulnerable situations.

We will do this by developing new techniques, using existing data in a safe and secure way to identify which households would most benefit from timely and relevant offers of practical and financial support from their local authority, reputable charities, and responsible energy companies.

VIVID will also investigate the creation and maintenance of a common regional vulnerability reference system, initially for Aberdeen City, but applicable to all GB regions.

Summary of Expert Assessors' feedback

The Expert Assessors considered the Project to have met all of the Eligibility Criteria and have therefore recommended it be considered for SIF Funding. The assessors considered the Project to have presented a clearly articulated and strong proposal with clear, ambitious and innovative objectives, underpinned by a robust work plan. The Expert Assessors considered the Project to have clearly identified a net benefit for consumers, and considered the participation from a wide stakeholder group to be sufficient for the activities set out. The Project was considered to be innovative and novel, with an element of risk in its proposal. The Project's overall costs were considered reasonable and aligned with industry standards, with a high potential social benefit, thereby providing confidence that the Project is providing value for money and is costed competitively.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We consider the Project to have addressed the Innovation Challenge. The Project's focus on harnessing the potential of data in collaboration with diverse stakeholders to effectively identify and aid vulnerable customers demonstrates its innovative approach. Furthermore, the focus on collaborative data use from the energy industry, local authorities, and the third sector to pinpoint these vulnerable consumers is directly aligned with the Innovation Challenge's objectives and aims. This could enhance consumer service provision, ensuring more targeted and unified support. As a result, we consider the Project to have met this Eligibility Criteria.

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).

We recognize the potential of the Project to deliver net benefits to electricity consumers, especially those in vulnerable situations. We note that the Project's approach could lead to improved identification of vulnerable consumers and, once identified, they can benefit from timely and relevant offers of support and protection by the networks. This stands to offer a social benefit for consumers. Therefore, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We consider the Project to involve significant network innovation as it aims to combine and analyse various data sets for the purpose of identifying and assisting vulnerable users. This approach represents a departure from business as usual approaches by proposing a novel use of data and the Priority Services Register (PSR) for network operators. Such an approach could potentially lead to more innovative solutions that utilize datasets for identifying vulnerable households and consumers. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We recognize the Project's focus could result in the stimulation of competitive markets rather than the undermining of them. The proposed solution of the Project is to create a method for pinpointing and aiding vulnerable users, ensuring it doesn't overlap or replicate existing services. By focusing on this particular aspect of the energy sector, we agree with the Expert Assessors that the Project avoids potential disruptions or infringements upon competitive markets. We therefore also agree with the assessors that the Project will not undermine the development of competitive markets. The Project is also considered to emphasize the processes of identification and support for vulnerable users, which provides confidence that it is not undermining competitive markets because of its non-competitive nature. As such, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

The Project is considered to be both innovative and risky due to its approach of amalgamating datasets and analysing them to produce new insights to assist in the identification and aid of vulnerable consumers. This method is innovative because it necessitates extensive collaboration and cooperation across diverse datasets and stakeholders for the Project's objectives to be realized. The associated risk is evident in the need to comply rigorously with data protection regulations and in setting up and coordinating the stakeholder group for the proposed solution. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

The Project puts forward extensive participation from a diverse range of stakeholders. The inclusion of organizations like Quarriers and Aberdeen City Council, tech-focused entities such as CGI, along with consumer groups and representatives from the third sector, is commendable and sufficient for the activities set out as part of the Alpha Phase. Therefore, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We consider the Project's costs to be reflective of value for money and have been set competitively. The presented costs are deemed reasonable and align with industry standards for the activities set out, which gives us confidence of its competitive pricing. Additionally, the potential to yield considerable social benefits, especially for consumers in vulnerable situations, also provides confidence that the Project is providing value for money. As a result, we view the costs associated with the Project's scope and activities to be reasonable and consistent with industry norms, thereby providing assurance that they are providing value for money and are costed competitively. We therefore consider the Project to have met this Eligibility Criteria.

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.

The Project puts forward a well-structured methodology, which instils confidence in its potential to progress in a timely manner. The work packages are clearly defined, and there is clear ownership of roles within the Project team. The milestones and timelines are clearly set out and give confidence in its robust planning for the Alpha Phase. Based on this, we consider the Project we consider the Project to have met this Eligibility Criteria.

Net Zero Terrace

Table 54: Project Costs

Cost type	Cost
Total eligible costs	£578,866.00
Total contribution	£84,364.00
Total SIF Funding requested	£494,502.00

Project description

Net Zero Terrace will produce a replicable technical and financial model for decarbonisation of mixed-tenure terraced housing that can be scaled and is appropriate for those that might otherwise be left behind.

Summary of Expert Assessors' feedback

The Expert Assessors considered the Project to have met all the Eligibility Criteria and therefore have recommended the Project be considered for SIF Funding.

They considered the Project's focus on decarbonising the heat of terrace housing to be directly aligned with the aims of the Innovation Challenge. They noted that the Project has clearly identified the potential for net benefits to both gas and electricity consumers, primarily through cost reductions and its 'first of a kind approach' which could lead to greater opportunities in the future. As a result, the assessors did not consider the Project to undermine the development of competitive markets and also considered the Project to be providing value for money with its overall costs and potential benefits. The assessors also considered the Project to have participation from a sufficient range of stakeholders for the activities set out, noting positively the inclusion of business and consumer focused organisations. Finally, the assessors considered the Project documentation and approach to be robust and to provide confidence that the Project will be capable of progressing in a timely manner in the Alpha Phase.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We note the Project's focus on addressing the unique challenges posed by terrace housing, especially as it pertains to consumers who are more vulnerable or fuel-poor. The Project's goal to produce a replicable model for decarbonizing this particular type of housing is in direct alignment with the Innovation Challenge. We consider this approach to have the potential to contribute significantly to the decarbonization of a section of the housing stock. We therefore consider the Project to have met this Eligibility Criteria.

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).

We recognize the Project's potential to deliver a net benefit to both gas and electricity consumers. Specifically, it aims to provide low-carbon solutions to households that cannot transition to air source heat pumps. The Project has identified a potential to deliver a net benefit to electricity consumers through its a potential reduction in the for network upgrades, thereby passing these cost savings onto consumers. We also note the potential for social benefits from the Project's approach of focusing on consumers in terraced housing in the transition to net zero. We also note positively the potential additional component of community-owned solar power, which we consider to also have the potential to deliver a net benefit to electricity consumers through cost reductions and social benefits. Therefore, we consider the Project to meet this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We consider the Project to involve network innovation, as it aims to establish a smart local energy system specifically tailored for housing unsuitable for air source heat pumps. The Project goes beyond traditional approaches by also examining how community-led smart local energy systems can be integrated into the network connections process. This offers a forward-thinking avenue for developing innovative local energy system options and facilitating collective connection applications beyond the business-as-usual approaches. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We acknowledge the Project's approach avoids the undermining competitive markets and also its potential to actively contribute to the development of new competitive markets. Specifically, the Project aims to remove barriers to entry for the development of low-carbon heat as a service. This opens up opportunities for the creation of new competitive markets. The Project's focus on the development of local supply chains further underscores its positive impact on market

competition. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We consider the Project to be innovative, novel, and risky. It takes the ambitious step of integrating a range of smart local energy system technologies and stakeholders to apply them to the unique challenges of mixed-ownership terrace housing. Given that the proposed model involves peer-to-peer trading to lower energy costs and hasn't yet been tested at scale, it carries inherent risks. These risks are further compounded by the need to overcome barriers to grid integration due to the Project's novel nature. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We acknowledge the Project's strong stakeholder participation for the activities set out at the Alpha Phase. The Project brings together a diverse group of stakeholders, encompassing both technical and social elements, such as businesses and consumer-focused organizations. This broad participation is deemed sufficient for the planned dissemination and community engagement activities. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We consider the Project to provide value for money and to be costed competitively. The Project's overall costs are appropriate for the range of activities outlined in the Alpha Phase. Additionally, we note the Project's significant financial contributions toward its own implementation, which gives confidence in its competitive costing and provides further assurance that the costs overall are reasonable. The potential for notable benefits, especially in accelerating the decarbonization of a significant portion of the UK's housing stock, further underlines its value proposition. We therefore consider the Project to have met this Eligibility Criteria.

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.

The Project is well thought through and supported by a robust methodology. The clarity in the Project plan and the articulation of the Project's approach are clearly set out. Additional confidence is instilled by the comprehensive documentation provided, noted specifically in its risk register and a Gantt chart. These elements provide confidence that the Project will be capable of progressing in a timely manner in the Alpha Phase. As such, we consider the Project to have met this Eligibility Criteria.

SHIELD - Smart Heat and Intelligent Energy in Low-Income Districts

Table 55: Project Costs

Cost type	Cost
Total eligible costs	£556,276.00
Total contribution	£81,153.00
Total SIF Funding requested	£475,123.00

Project description

SHIELD is a bold new initiative that will revolutionise the way we heat our homes. By using innovative low-cost low-carbon heating solutions, such as distributed data centres, SHIELD will help to decarbonise heat and energy for vulnerable consumers and social housing tenants.

In addition, SHIELD will use smart energy generation and storage technologies to intelligently balance demand and supply, helping reduce the upfront cost and running costs of consumers' heating and energy.

This innovative approach to decarbonisation has the potential to transform the energy landscape and make a real difference to the lives of vulnerable people.

Summary of Expert Assessors' feedback

The Expert Assessors considered the Project to have met all of the Eligibility Criteria and therefore have recommended it be considered for SIF Funding. It was considered to have a well-articulated proposal, with a clearly articulated Project plan, benefits to consumers, area of innovation, and risks. The Project was considered well thought through and to have a participation from a sufficient range

of stakeholders for the activities set out. The Project's costs were also considered reasonable for activities set out and to represent value for money.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We note the feedback from the Expert Assessors and consider the Project to have directly addressed the Innovation Challenge. The Project's focus on supporting vulnerable consumers by offering solutions that could lead to significant reductions in energy bills is noted and directly aligns with the Innovation Challenge. Furthermore, by offering an alternative to low-carbon heating for low-income households, the Project aligns with the one of the aims of the Innovation Challenge, which is to enhance the understanding and support for consumer vulnerability in the context of energy networks and the transition to net zero. We therefore consider the Project to have met this Eligibility Criteria.

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).

We consider the Project to have clearly identified potential to deliver a net benefit to both gas and electricity consumers. By offering solutions that may result in reduced bills and energy transition costs, the Project can bring about net benefits. Additionally, by potentially decreasing the electricity demand of consumers, it could lead to reduced requirements for grid reinforcement and investment. We also acknowledge the broad spectrum of benefits recognised by the assessors, encompassing social, environmental, efficiency, and financial aspects. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

We consider the Project to involve network innovation. By aiming to introduce an integrated low carbon domestic solution that combines renewable energy sources with data centre heat, the Project puts forward an approach not previously explored in GB. This approach was also considered to go beyond business as usual practices. Furthermore, the potential avenues for balancing and flexibility services hinted at by the Project could pave the way for further network innovation opportunities. Based on this, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We agree with the Expert Assessors and consider the Project to not undermine the development of competitive markets. Rather, we recognize its potential to stimulate new competitive markets stemming from the Project's outcomes. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

We consider the Project to be innovative and carry inherent risks due to its aim of piloting a novel approach to transitioning households to low carbon solutions, a direction not typically pursued in standard commercial endeavours. Recognizing the challenges presented by the amalgamation of expertise and methodologies from various Project Partners while also liaising with network regulators, we consider the Project's approach to be both unique and novel. Based on these considerations, we agree with the Expert Assessors and consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

We note the participation of a wide variety of stakeholders in the Project, each aligning well with their respective areas of expertise. The broad spectrum of stakeholders, particularly the inclusion of entities like Citizens Advice and Essex County Council, is noted positively as it aligns with the consumer demographic. We agree with the Expert Assessors and consider the Project to have participation from a sufficient range of stakeholders for the Alpha Phase activities.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

We note the feedback from the assessors that the Project has potential to deliver significant benefits to consumers, particularly when juxtaposed with its overall costs, which we gives confidence that the Project is providing value for money. Furthermore, considering the Project’s overall costs in relation to the outlined activities and industry norms, we consider the Project to have competitive costing. As such, we consider the Project to have effectively met this Eligibility Criteria.

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.

The Project puts forward a detailed and strategic approach for the Alpha Phase, with a robust methodology. The Gantt chart and workplan are clear and provide confidence of the Project's potential for timely progression. Furthermore, the Project includes comprehensive milestones and risk registers, completed to a high quality. We consider the Project to be well thought through and capable of progressing in a timely manner. Therefore, we consider the Project to have met this Eligibility Criteria.

Guidelight

Table 56: Project Costs

Cost type	Cost
Total eligible costs	£547,103.00
Total contribution	£59,782.00
Total SIF Funding requested	£487,322.00

Project description

Guidelight addresses the lower adoption rates of time-of-use tariffs and digital technologies among low-income and vulnerable households participating in local retrofit initiatives. By providing guidance and support, the project ensures these households can benefit from smart energy practices, avoid financial penalties, and, at the same time, help to alleviate network constraints.

Guidelight will develop an Open Access Toolkit, collaboratively designed with customers, to provide support to local authorities (LAs), social housing providers, installers, and energy advice organisations. It also focuses on monitoring low carbon technologies (LCT) performance and boosting confidence so that no one is left behind the energy transition.

Summary of Expert Assessors' feedback

All the Expert Assessors recommended this Project be considered for SIF Funding and considered all of the Eligibility Criteria to have been met.

The Project effectively addressed the Innovation Challenge by employing novel social research techniques to engage consumers and providing an accessible toolkit for the adoption of low-carbon technologies (LCT). The Project aimed to assist marginalised customers, enhance the involvement of low-income consumers in the energy transition, and create a smoother customer experience during their transition to LCT technologies.

The Project demonstrated potential to benefit electricity consumers by exploring flexibility improvements for network operators, which could reduce costly network reinforcement needs. Additionally, it offered direct benefits to vulnerable consumers by lowering energy expenses and increasing engagement. While the Project had clear advantages, there was a lack of evaluation on potential adverse effects and mitigation strategies, and a more in-depth analysis of quantitative measures would have enhanced its credibility.

The Expert Assessors recognised the Project's contribution to network innovation, empowering vulnerable consumers for more efficient interaction with the energy system. The approach incorporated network innovation strategies focused on consumer engagement and data utilisation for network optimisation. However, the Expert Assessors noted that the approach was broad, suggesting the need to prioritise specific use cases to achieve more targeted outcomes. The Expert Assessors advised defining user archetypes for the toolkit's consumers and have recommended a Project-specific condition for the Project to provide this by the end of the Alpha Phase.

The Project was considered not to undermine competitive markets as it focused on research methods and support tools for an underserved user segment not covered by the commercial market. Some suggestions were made to explore long-term sustainable commercialisation of the toolkit, but overall, it was not seen as a threat to competitive markets. The Project successfully engaged a wide range of stakeholders, including network operators, local authorities, research institutes, consumer-focused entities, and more, ensuring comprehensive representation for the vulnerable consumer segment.

The Project's value for money and competitive costing were acknowledged due to well-distributed expenses and sensible financial inputs. The potential for substantial value and return on investment relative to costs supported its financial feasibility.

The Project demonstrated a robust methodology through a well-structured Project plan and proactive risk analysis. However, suggestions were made to break down larger tasks into smaller components and improve coordination among partners to prevent an overemphasis on individual work packages. Despite these concerns, the Project's management plan was considered solid and capable of timely delivery.

Ofgem funding decision: SIF Funding approved

Ofgem assessment of Application

Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.

We recognize the Project's focus on pioneering social research techniques that foster deeper consumer engagement and the creation of an accessible toolkit to spur the adoption of low-carbon technologies (LCT). This focus could establish innovative, scalable methodologies which serve marginalized customers. The Project's alignment with promoting low-income consumers' involvement in the energy transition and simplifying the adoption process for vulnerable individuals is directly aligned with the aims of the Innovation Challenge. We therefore consider the Project to have met this Eligibility Criteria.

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).

The Project, in its approach, has underscored the evident potential to deliver net benefits to electricity consumers. By investigating ways to boost flexibility for network operators, the Project showcases the prospect of curbing expensive network reinforcements. The Project also has the potential to deliver net benefits to vulnerable consumers, encompassing lower energy costs, bolstered confidence, and greater involvement. The net benefits set out by the Project cover both network services, with offerings like heightened flexibility, and the end-users, through tangible outcomes like cost savings and enhanced engagement.

While we note the feedback from the assessors that the estimate of annually benefitting households (250) is conservative, we also note that the Project confirmed this was a conservative estimate during the interview. We also note and agree with the feedback from the assessors that the Application would have been strengthened with a deeper focus on quantitative metrics for mapping these potential net benefits.

However, despite this, by sizing up the market and detailing potential gains, we consider Project to have clearly identified potential to deliver a net benefit to electricity consumers. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3: Projects must involve network innovation.

The Project involves network innovation through its exploration of strategies to empower vulnerable users with streamlined and efficient interaction opportunities with the energy system and corresponding networks. Such an initiative has the potential to reduce costs for individuals and the entire system.

The Project puts forward an innovative approach towards fortifying the engagement of vulnerable consumers, all the while tapping into data-driven insights for refining network optimisation. We note that the broadness of the innovation strategy was noted favourably by the Expert Assessors. We also note that the interview aspect of the assessment added some additional layers to this

consideration, with variations in viewpoints on the target demographic for the toolkit. While we agree with the Expert Assessors' feedback the Project should consider as part of its Alpha Phase developing more specific outcomes for the Project, we also consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4: Projects must not undermine the development of competitive markets.

We agree with the Expert Assessors and do not consider the Project to undermine the development of competitive markets. The Project's focus is on research methodologies and the development of support tools for an underserved user demographic. This focus is not presently offered in the market and therefore represents an opportunity for the development of new competitive markets.

While we note the comment from one assessor that the 'Route to Market' aspect of the Project could have been stronger to provide greater assurance that the Project's proposed solution will not undermine the development of competitive markets, we also note that this aspect of the Project will be further developed as part of the Alpha Phase.

As there are limited comparable offerings for the proposed solution currently in the market and we do not consider the Project's proposed solution to undermine the development of competitive markets, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5: Projects must be innovative, novel and/or risky.

The Project takes an innovative and risky approach. It puts forward a focus on new research methods and the development of an accessible toolkit, tailored to the needs of vulnerable risks. This focus is both innovative and risky because there are few existing similar approaches and there would be risk in setting designing and implementing these solutions.

We also note and agree with the feedback from the Expert Assessors that the Project's novelty is in its diverse stakeholder mix. This mix will help to ensure that the Project's proposed solution is widely implementable while also considering the needs of consumers and vulnerable consumers. As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

The Project includes participation from a wide range of stakeholders for the activities set out in the Alpha Phase. We note the positive feedback from the assessors on the wide inclusion and agree with them that the participation is sufficient for the activities set out. We also note positively the interest from additional entities not currently a Project Partner in aiding vulnerable consumers, such as mobile network operators. We therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

The Project provides value for money because it present the potential for substantial value and favourable returns on investment relative the costs of the Project. We also consider the Project's overall costs to be adequate and proportionate to the activities set out. The day rates of the Project Partners and days allocated to the Project were also considerable reasonable and aligned with industry norms, providing confidence that the Project is costed competitively. As such, we consider the Project to have met this Eligibility Criteria.

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.

The Project presents a robust methodology which confidence that it will be capable of progressing in a timely manner in the Alpha Phase. It puts forward a well-structured and clearly thought through Project plan and risk analysis, including clear risk mitigation options.

We note and agree with the feedback from the Expert Assessors that the work packages could have been broken down into smaller components to allow for agile delivery, and that the more details could have been provided on coordinating cross-Project learnings.

However, overall, the Project's clearly set out and articulated work packages, milestones, Project plan and risk register providing confidence in its capability of

progressing in a timely manner. We therefore consider the Project to have met this Eligibility Criteria.