

Strategic Innovation Fund (SIF)
Round 2 Innovation Challenges – Alpha Phase
Expert Assessors' Recommendations Report



Contents

Contents.....	2
1. Introduction	5
2. SIF Round 2 Alpha Phase portfolio Gas Sector Projects - Summary.....	9
2.1 Gas Sector Projects recommended for SIF Funding	9
2.2 Gas Projects not recommended for SIF Funding	10
3. SIF Round 2 Alpha Phase Portfolio Electricity Sector Projects - Summary.....	12
3.1 Electricity Projects recommended for SIF Funding	12
3.2 Electricity Projects not recommended for funding	15
4. SIF Round 2 Alpha Phase Breakdown of Eligibility Criteria	18
5.1 SIF Round 2 Alpha Phase – Support a just energy transition - Summary	27
5.2 Evaluation of Applications	29
5.2.1 10083475, Hy-Fair – Alpha, Initial Net Funding Requested £463,201	29
5.2.2 10085471, VIVID - Vulnerability Identification Via informative Data, Initial Net Funding Requested £448,525	36
5.2.3 10085870, Net Zero Terrace, Initial Net Funding Requested £494,502	42
5.2.4 10085976, SHIELD - Smart Heat and Intelligent Energy in Low-Income Districts, Initial Net Funding Requested £475,123.....	48
5.2.5 10086465, Guidelight, Initial Net Funding Requested £487,322.....	54
6.1 SIF Round 2 Alpha Phase – Accelerating decarbonisation of major demands - Summary	62
6.2 Evaluation of Applications	66
6.2.1 10085805, Planning Regional Infrastructure in a Digital Environment (PRIDE) (Alpha phase), Initial Net Funding Requested £499,874	66
6.2.2 10078929, Inform, Initial Net Funding Requested £388,491	72
6.2.3 10081586, Integrated Hydrogen Transport Hubs, Initial Net Funding Requested £496,559	78
6.2.4 10085252, Local Energy Oxfordshire - Neighbourhoods (LEO-N), Initial Net Funding Requested £481,159	85
6.2.5 10084666, RetroMeter, Initial Net Funding Requested £483,934	90
6.2.6 10085218, Resilient and Flexible Railway Multi-Energy Hub Networks for Integrated Green Mobility - Round 2, Initial Net Funding Requested £479,851.....	97
6.2.7 10085395, Net Zero Community Energy Hubs - Alpha, Initial Net Funding Requested £480,712	105
6.2.8 10085396, Carnot Gas Plant - Alpha, Initial Net Funding Requested £299,360	111
6.2.9 10085975, Lightspeed, Initial Net Funding Requested £497,928.....	119
6.2.10 10086034, Indus, Initial Net Funding Requested £496,757	125
6.2.11 10086311, Watt Heat, Initial Net Funding Requested £486,444	131
6.2.12 10086418, Park & Flex, Initial Net Funding Requested £467,470	137
6.2.13 10086429, Heat Risers, Initial Net Funding Requested £489,735	144
6.2.14 10086459, Full Circle, Initial Net Funding Requested £416,811	150
6.2.15 10086460, Heatropolis, Initial Net Funding Requested £483,374	156

6.2.16	10087236, Tyseley Environmental Enterprise District (TEED) Alpha Phase, Initial Net Funding Requested £473,333	162
7.1	SIF Round 2 Alpha Phase – Preparing for a net zero power system - Summary.....	169
7.2	Evaluation of Applications	173
7.2.1	10080246, Artificial Forecasting, Initial Net Funding Requested £467,838.....	173
7.2.2	10080276, Flexible Queue Management (Alpha), Initial Net Funding Requested £245,416	180
7.2.3	10085756, Shifting Currents, Initial Net Funding Requested £324,926	186
7.2.4	10078792, Powering Wales Renewably, Initial Net Funding Requested £499,176	193
7.2.5	10079461, HyNTS Waste Heat Recovery for Electrolysis, Initial Net Funding Requested £386,732	200
7.2.6	10079465, HyNTS Hybrid Storage, Initial Net Funding Requested £375,369..	207
7.2.7	10079053, INSIGHT, Initial Net Funding Requested £227,093.....	213
8.1	SIF Round 2 Alpha Phase – Improving energy system resilience and robustness - Summary	219
8.2	Evaluation of Applications	225
8.2.1	10085408, SCOHL - SuperConductor OverHead Lines, Initial Net Funding Requested £417,509	225
8.2.2	10079052, REACT, Initial Net Funding Requested £496,625.....	232
8.2.3	10079058, NIMBUS, Initial Net Funding Requested £499,873	239
8.2.4	10079467, HyNTS Supply Chain, Initial Net Funding Requested £448,707	246
8.2.5	10080646, NextGen Electrolysis – Wastewater to Green Hydrogen, Initial Net Funding Requested £295,824	252
8.2.6	10083736, Distribution Network Information Modelling (DNIM) - Alpha, Initial Net Funding Requested £465,329	258
8.2.7	10084569, SF6 Whole Life Strategy, Initial Net Funding Requested £403,311	264
8.2.8	10085883, REWIRE (REsidential Whole System Integrated REsilience), Initial Net Funding Requested £498,147	270
8.2.9	10078787, Scenarios for Extreme Events, Initial Net Funding Requested £457,899	276
8.2.10	10079059, Digital Inspector, Initial Net Funding Requested £309,790	283
8.2.11	10079341, Hydrogen Cost Reduction (HyCoRe), Initial Net Funding Requested £499,787	289
8.2.12	10084557, Whole Energy System Resilience Vulnerability Assessment (WELLNESS), Initial Net Funding Requested £471,725	295
8.2.13	10085005, Looking-Glass - Alpha, Initial Net Funding Requested £475,136.	300
8.2.14	10085783, WARN - Weather Alerts and Risk analysis for Network operators, Initial Net Funding Requested £469,197.....	306
8.2.15	10085944, Trinity, Initial Net Funding Requested £499,545	312
8.2.16	10086002, CReDo+: Climate Resilience Demonstrator (extension to new climate risks), Initial Net Funding Requested £497,856	317
8.2.17	10086409, CommsConnect, Initial Net Funding Requested £403,382	322
8.2.18	10086458, Connectrolyser, Initial Net Funding Requested £498,483	328
8.2.19	10086622, D-Suite, Initial Net Funding Requested £495,010	333

8.2.20 10086716, Dynamic Networks, Initial Net Funding Requested £499,851 338
8.2.21 10082956, SIF Black start Demonstrator from offshore wind (SIF BLADE), Initial
Net Funding Requested £333,392 344

1. Introduction

Decarbonising Great Britain's energy networks is a huge undertaking - and it is urgent. Government and industry have a joint goal to fully decarbonise the UK's electricity system by 2035. This cannot be done without innovation. The Strategic Innovation Fund (SIF) is a £450m programme Ofgem programme with funding which aims to facilitate the UK's transition to Net-Zero at lowest cost to the consumer and to position the UK as the 'Silicon Valley' of energy, making it the best place for high potential business to grow and scale in the energy market. It was launched in July 2021 within the RII0-2 price control.

The SIF is delivered in partnership with Innovate UK (part of UKRI), who are working to coordinate innovation activities funded by network consumers with other innovation funded programmes, and draws on Innovate UK's established expertise in managing innovation programmes, convening partners, and fostering entrepreneurship.

Innovate UK and Ofgem's strategy in delivering the SIF focuses on:

- Encouraging innovation alignment – between different funders, across different industry sectors, and in line with regulatory change
- Being responsive – making sure that Projects are targeted at challenges and can develop in an agile way
- Enabling commercialisation – helping innovative ideas find markets across the UK energy system and internationally

To achieve this strategy, Innovate UK uses an end-to-end innovation process called Giant Leap Together. The Giant Leap Together process has four main phases, which run on an annual cycle:

- Challenges: Innovate UK and Ofgem work with industry to develop challenge areas for Projects to focus on
- Targeted Ideation: innovators come forward with new ideas that could become SIF Projects
- Incubation: consortia form, Project teams shape proposals and apply for SIF Funding
- Acceleration: Projects gain SIF Funding approval and begin work on Discovery Projects – with potential to go on to further Project Phases in the future.

In the Acceleration stage, SIF Projects approved for SIF Funding begin a journey with three phases:

- Discovery Phase: feasibilities studies, lasting 2-3 months
- Alpha Phase: proof of concept Projects, lasting 6 months
- Beta Phase: large-scale demonstrator developments, last up to 5 years

The aim is to find many potential ideas and identify those with greatest promise as quickly as possible, giving them support they need to become business-as-usual.

At each Project Phase, a Project compete for progressively higher levels of SIF Funding, with fewer Projects being successful at each Project Phase.

Four Innovation Challenges were launched in August 2021 for round 1 of the SIF focusing on strategic issues currently facing networks – whole system integration, data and digitalisation, heat, and zero emission transport¹. Round 2 of the SIF retains this broad area of focus with four separate Innovation Challenges²:

- Supporting a just energy transition
- Preparing for a net zero power system
- Improving energy system resilience and robustness
- Accelerating decarbonisation of major energy demands

For the round 2 Discovery Phase, over £6.1m of SIF Funding was awarded to 53 Projects³. All Projects which completed the Discovery Phase had the following options for the round 2 Alpha Phase:

- submitting an Application
- merging with another SIF Project and submitting an Application
- not submitting an Application

Projects which did not submit an Application for the round 2 Alpha Phase can still submit an Application to a future Alpha Phase, so long as they meet the requirements set out in that future rounds' Innovation Challenge. Additionally, following a consultation and decision from Ofgem, projects from outside the SIF which did not complete a Discovery Phase Project were eligible to submit directly to the round 2

¹ For more information on the round 1 Innovation Challenges, please see: <https://www.ofgem.gov.uk/publications/strategic-innovation-fund-innovation-challenges>

² For more information on the round 2 Innovation Challenges, please see: <https://www.ofgem.gov.uk/publications/strategic-innovation-fund-round-two-innovation-challenges>

³ For more information on the round 2 Discovery Phase Projects please see: <https://www.ofgem.gov.uk/publications/strategic-innovation-fund-round-2-discovery-projects-approved-funding>

Alpha Phase. However, no Applications were submitted directly to the round 2 Alpha Phase.

By the close of competition at 11am on 5 July 2023, across the four round 2 Innovation Challenges, a total of 49 eligible Applications were received for the Alpha Phase from the 53 round 2 Discovery Phase Projects. For the round 2 Alpha Phase Projects, each of the 49 Applications was assessed by three Expert Assessors against the Eligibility Criteria⁴. Projects which were considered by the majority of Expert Assessors (two of the three assessors) to have met each of the Eligibility Criteria and which were recommended for SIF Funding, were not invited to an interview with the Expert Assessors. Projects which did not meet this criteria, as well as some Projects selected by Ofgem in order to better examine their Project and proposed solution, were invited to interview with the Expert Assessors. Of the 49 Applications submitted, 19 Projects were interviewed by the Expert Assessors and 30 Applications were not.

For the round 2 Alpha Phase, Projects must start on 1 October 2023 and end by 31 March 2024, and can request up to £500,000 of SIF Funding.

This report offers recommendations from the Expert Assessors on which of the Applications submitted should continue to be funded in the Alpha Phase. In some instances, the Expert Assessors have also recommended Project-specific conditions for the Projects which they have recommended for SIF Funding in the Alpha Phase. These have been included in circumstances where the assessors considered there to be room for additional clarity than what was provided in the Application, where additional activities or engagements should be considered in the Project Phase, and/or where additional information may be required from the Funding Party to help mitigate potential issues identified. The Project-specific conditions set out below are not final. The final versions which Projects must complete as part of the Alpha Phase activities can be found within each of the round 2 Alpha Phase Project Directions.

Please note, all round 2 SIF Projects must be led by either an Electricity Transmission, Electricity Distribution, Electricity System Operator (ESO), Gas Transmission or Gas Distribution licence holder:

- Cadent Gas Limited (Cadent)
- Electricity North West Limited (ENWL)

⁴ The Eligibility Criteria is set out in chapter 2 of the SIF Governance Document: <https://www.ofgem.gov.uk/publications/updated-sif-governance-document>

- National Grid Electricity Distribution (NGED): West Midlands (WMID)
- National Grid Electricity Distribution (NGED): East Midlands (EMID)
- National Grid Electricity Distribution (NGED): South Wales (SWALES)
- National Grid Electricity Distribution (NGED): South West (SWEST)
- National Grid Electricity System Operator Limited (NGESO)
- National Grid Electricity Transmission Plc (NGET)
- National Gas Transmission Plc (NGT)
- Northern Gas Networks Limited (NGN)
- Northern Powergrid (NPg): Northeast (NPgN)
- Northern Powergrid (NPg): Yorkshire (NPgY)
- Scotland Gas Networks Plc and Southern Gas Networks Plc (SGN)
- Scottish and Southern Energy Power Distribution (SSE): Scottish Hydro Electric Power Distribution (SSEH)
- Scottish and Southern Energy Power Distribution (SSE): Southern Electric Power Distribution (SSES)
- Scottish Hydro Electric (SHE) Transmission Plc
- SP Energy Networks (SPEN): Distribution (SPD)
- SP Energy Networks (SPEN): Manweb (SPMW)
- SP Transmission Plc (SPT)
- UK Power Networks (UKPN): Eastern Power Networks (EPN)
- UK Power Networks (UKPN): London Power Networks (LPN)
- UK Power Networks (UKPN): South East Power Networks (SPN)
- Wales & West Utilities Limited (WWU)

For more information on the Innovation Challenges and their requirements, the assessment process, and the Projects assessed for the Discovery Phase, please see the recommendations report issued for the Discovery Phase⁵.

⁵ For more information on the round 2 Discovery Phase, please see: <https://www.ofgem.gov.uk/publications/strategic-innovation-fund-round-2-discovery-projects-approved-funding>

2. SIF Round 2 Alpha Phase portfolio Gas Sector Projects - Summary

In summary, based on these assessments, the following tables present the gas sector Projects that are recommended to Ofgem for funding under the SIF Round 2 Alpha Phase, subject to the various conditions outlined above, and the gas Projects that are not recommended for funding.

2.1 Gas Sector Projects recommended for SIF Funding

Please note, no Projects under the 'accelerating decarbonisation of major demands' Innovation Challenge were recommended for SIF Funding by the Expert Assessors.

Improving energy system resilience and robustness

Project Name	Funding Licensee	Initial Net Funding Requested (£)
Digital Inspector	Cadent Gas	309,790.00
Hydrogen Cost Reduction (HyCoRe)	Northern Gas Networks	499,787.00
NextGen Electrolysis – Wastewater to Green Hydrogen	Wales & West Utilities	295,824.00

Preparing for a net zero power system

Project Name	Funding Licensee	Initial Net Funding Requested (£)
HyNTS Waste Heat Recovery for Electrolysis	NATIONAL GAS TRANSMISSION PLC	386,732.00

Supporting a just energy transition

Project Name	Funding Licensee	Initial Net Funding Requested (£)
Hy-Fair - Alpha	Southern Gas Networks	463,201.00

Total SIF Funding requested by gas Projects recommended for SIF Funding: £1,955,334.

2.2 Gas Projects not recommended for SIF Funding

Accelerating decarbonisation of major demands

Project Name	Funding Licensee	Initial Net Funding Requested (£)
Integrated Hydrogen transport Hubs	WALES & WEST UTILITIES LIMITED	496,559
Net Zero Community Energy Hubs- Alpha	SOUTHERN GAS NETWORKS PLC	480,712
Carnot Gas Plant - Alpha	SOUTHERN GAS NETWORKS PLC	299,360

Improving energy system resilience and robustness

Project Name	Funding Licensee	Initial Net Funding Requested (£)
HyNTS Supply Chain	NATIONAL GAS TRANSMISSION PLC	448,707
Distribution Network Information Modelling (DNIM) - Alpha	SOUTHERN GAS NETWORKS PLC	465,329

Looking-Glass Alpha	SOUTHERN GAS NETWORKS PLC	475,136
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Preparing for a net zero power system

Project Name	Funding Licensee	Initial Net Funding Requested (£)
HyNTS Hybrid Storage	NATIONAL GAS TRANSMISSION PLC	375,369

All gas Projects which were submitted to the 'supporting a just energy transition' were recommended for SIF Funding.

3. SIF Round 2 Alpha Phase Portfolio Electricity Sector Projects - Summary

In summary, based on these assessments, the following tables present the electricity sector Projects that are recommended to Ofgem for funding under the SIF Round 2 Alpha Phase, subject to the various conditions outlined above, and the electricity Projects that are not recommended for funding.

3.1 Electricity Projects recommended for SIF Funding

Accelerating decarbonisation of major demands

Project Name	Funding Licensee	Initial Net Funding Requested (£)
Inform	NORTHERN POWERGRID (NORTHEAST) LIMITED	388,491
RetroMeter	ELECTRICITY NORTH WEST LIMITED	483,934
Local Energy Oxfordshire - Neighbourhoods (LEO-N)	SCOTTISH AND SOUTHERN ENERGY POWER DISTRIBUTION LIMITED	481,159
Planning Regional Infrastructure in a Digital Environment (PRIDE) (Alpha phase)	NATIONAL GRID ELECTRICITY DISTRIBUTION PLC	499,874
Lightspeed	UK POWER NETWORKS (OPERATIONS) LIMITED	497,928
Indus	UK POWER NETWORKS (OPERATIONS) LIMITED	496,757
Watt Heat	UK POWER NETWORKS (OPERATIONS) LIMITED	486,444
Park & Flex	UK POWER NETWORKS (OPERATIONS) LIMITED	467,470
Heat Risers	UK POWER NETWORKS (OPERATIONS) LIMITED	489,735
Full Circle	UK POWER NETWORKS (OPERATIONS) LIMITED	416,811

Heatropolis	UK POWER NETWORKS (OPERATIONS) LIMITED	483,374
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Improving energy system resilience and robustness

Project Name	Funding Licensee	Initial Net Funding Requested (£)
Scenarios for Extreme Events	NATIONAL GRID ELECTRICITY SYSTEM OPERATOR LIMITED	457,899
REACT	SCOTTISH HYDRO ELECTRIC TRANSMISSION PLC	496,625
NIMBUS	SCOTTISH HYDRO ELECTRIC TRANSMISSION PLC	499,873
Whole Energy System Resilience Vulnerability Assessment (WELLNESS)	NATIONAL GRID ELECTRICITY TRANSMISSION PLC	471,725
SF6 Whole Life Strategy	NATIONAL GRID ELECTRICITY TRANSMISSION PLC	403,311
WARN - Weather Alerts and Risk analysis for Network operator	UK POWER NETWORKS (OPERATIONS) LIMITED	469,197
Trinity	UK POWER NETWORKS (OPERATIONS) LIMITED	499,545

CRDo+: Climate Resilience Demonstrator (extension to new climate risks)	UK POWER NETWORKS (OPERATIONS) LIMITED	497,856
CommsConnect	UK POWER NETWORKS (OPERATIONS) LIMITED	403,382
Connectrolyser	UK POWER NETWORKS (OPERATIONS) LIMITED	498,483
D-Suite	SP MANWEB PLC	495,010
SIF Black start demonstrator from offshore wind (SIF BLADE)	SCOTTISH POWER ENERGY NETWORKS HOLDINGS LIMITED	499,920

Preparing for a net zero power system

Project Name	Funding Licensee	Initial Net Funding Requested (£)
Flexible Queue Management (Alpha)	NORTHERN POWERGRID (NORTHEAST) LIMITED	245,416
Powering Wales Renewably	NATIONAL GRID ELECTRICITY SYSTEM OPERATOR LIMITED	499,176
INSIGHT	SCOTTISH HYDRO ELECTRIC TRANSMISSION PLC	227,093

Artificial Forecasting	NORTHERN POWERGRID (NORTHEAST) LIMITED	467,838
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Supporting a just energy transition

Project Name	Funding Licensee	Initial Net Funding Requested (£)
VIVID - Vulnerability Identification Via Informative Data	SCOTTISH AND SOUTHERN ENERGY POWER DISTRIBUTION LIMITED	448,525
Net Zero Terrace	ELECTRICITY NORTH WEST LIMITED	494,502
SHIELD - Smart Heat and Intelligent Energy in Low-Income Districts	UK POWER NETWORKS (OPERATIONS) LIMITED	475,123
Guidelight	UK POWER NETWORKS (OPERATIONS) LIMITED	487,322

Total SIF Funding requested by electricity Projects recommended for SIF Funding: £16,185,132.

3.2 Electricity Projects not recommended for funding

Accelerating decarbonisation of major demands

Project Name	Funding Licensee	Initial Net Funding Requested (£)
Resilient and Flexible Railway Multi-Energy Hub	SP TRANSMISSION PLC	479,851

networks for Integrated Green Mobility - Round 2		
Tyseley Environmental Enterprise District (TEED) Alpha Phase	NATIONAL GRID ELECTRICITY DISTRIBUTION (SOUTH WEST) PLC	473,333

Improving energy system resilience and robustness

Project Name	Funding Licensee	Initial Net Funding Requested (£)
SCOHL - SuperConductor Overhead Lines	NATIONAL GRID ELECTRICITY TRANSMISSION PLC	417,509
REWIRE (REsidential Whole System Integrated Resilience)	ELECTRICITY NORTH WEST LIMITED	498,147
Dynamic Networks	SSEN DISTRIBUTION LIMITED	499,851

Preparing for a net zero power system

Project Name	Funding Licensee	Initial Net Funding Requested (£)
Shifting Currents	NATIONAL GRID ELECTRICITY DISTRIBUTION PLC	324,926

All electricity Projects which were submitted to the 'supporting a just energy transition' Innovation Challenge were recommended by the Expert Assessors for SIF Funding.

4. SIF Round 2 Alpha Phase Breakdown of Eligibility Criteria

The following tables provide an outline of which Eligibility Criteria each assessed Project met and did not meet. An 'X' has been used in the tables to indicate where the Expert Assessors considered a Project to have met the Eligibility Criteria and it has been left blank where they did not consider it to have met the Eligibility Criteria.

Improving energy system resilience and robustness

Project name	Funding Party	Recommended for funding	Eligibility Criteria 1	Eligibility Criteria 2	Eligibility Criteria 3	Eligibility Criteria 4	Eligibility Criteria 5	Eligibility Criteria 6	Eligibility Criteria 7	Eligibility Criteria 8
Scenarios for extreme events	NGESO	Yes	X	X	X	X	X	X	X	X
REACT	SSE T	Yes	X	X	X	X	X	X	X	X
NIMBUS	SSE T	Yes	X	X	X	X	X	X	X	X
Digital Inspector	Cadent	Yes	X	X	X	X	X	X	X	X
Hydrogen Cost Reduction (HyCoRe)	NGN	Yes	X	X	X	X	X	X	X	X



HyNTS Supply Chain	NGT	No	X	X		X		X		
NextGen Electrolysis - Wastewater to Green Hydrogen	WWU	Yes	X	X	X	X	X	X	X	X
Distribution Network Information Modelling (DNIM) - Alpha	SGN	No	X		X			X		
Whole Energy System Resilience Vulnerability Assessment (WELLNESS)	NGET	Yes	X	X	X	X	X	X	X	X
SF6 Whole Life Strategy	NGET	Yes	X	X	X	X	X	X	X	X

Looking-Glass Alpha	SGN	No	X		X	X	X	X	X	X
SCOHL - SuperConductor Overhead Lines	NGET	No	X		X	X	X	X	X	
WARN - Weather Alerts and Risk analysis for Network operators	UKPN	Yes	X	X	X	X	X	X	X	X
REWIRE (REsidential Whole System Integrated Resilience)	ENWL	No	X		X	X	X			X
Trinity	UKPN	Yes	X	X	X	X	X	X	X	X
CRedo+	UKPN	Yes	X	X	X	X	X	X	X	X

CommsConnect	UKPN	Yes	X	X	X	X	X	X	X	X
Connectrolyser	UKPN	Yes	X	X	X	X	X	X	X	X
D-Suite	SP Manweb	Yes	X	X	X	X	X	X	X	X
Dynamic Networks	SSEN D	No	X	X	X	X	X			
SIF Black start demonstrator from offshore wind (SIF BLADE)	SPEN	Yes	X	X	X	X	X	X	X	X

Accelerating decarbonisation of major energy demands

Project name	Funding Party	Recommended for funding	Eligibility Criteria 1	Eligibility Criteria 2	Eligibility Criteria 3	Eligibility Criteria 4	Eligibility Criteria 5	Eligibility Criteria 6	Eligibility Criteria 7	Eligibility Criteria 8
Inform	NPG	Yes	X	X	X	X	X	X	X	X

Integrated Hydrogen transport Hubs	WWU	No	X	X	X	X	X	X		X
RetroMeter	ENWL	Yes	X	X	X	X	X	X	X	X
Resilient and Flexible Railway Multi-Energy Hub networks for Integrated Green Mobility - Round 2	SP Transmission	No	X	X	X	X	X	X		
Local Energy Oxfordshire LEO-N	SSE-D	Yes	X	X	X	X	X	X	X	X
Net Zero Community	SGN	No	X		X	X	X			

Energy Hubs- Alpha										
Carnot Gas Plant - Alpha	SGN	No	X	X		X	X		X	
Planning regional infrastructure in a Digital Environment (PRIDE)	NGED	Yes	X	X	X	X	X	X	X	X
Lightspeed	UKPN	Yes	X	X	X	X	X	X	X	X
Indus	UKPN	Yes	X	X	X	X	X	X	X	X
Watt Heat	UKPN	Yes	X	X	X	X	X	X	X	X
Park & Flex	UKPN	Yes	X	X	X	X	X	X	X	X
Heat Risers	UKPN	Yes	X	X	X	X	X	X	X	X

Full Circle	UKPN	Yes	X	X	X	X	X	X	X	X
Heatropolis	UKPN	Yes	X	X	X	X	X	X	X	X
Tyseley Environmental Enterprise District TEED	NGED	No				X				

Preparing for a net zero power system

Project name	Funding Party	Recommended for funding	Eligibility Criteria 1	Eligibility Criteria 2	Eligibility Criteria 3	Eligibility Criteria 4	Eligibility Criteria 5	Eligibility Criteria 6	Eligibility Criteria 7	Eligibility Criteria 8
Powering Wales renewably	NGESO	Yes	X	X	X	X	X	X	X	X
HyNTS Waste Heat Recovery for Electrolysis	NGT	Yes	X	X	X	X	X	X	X	X

HyNTS Hybrid Storage	NGT	No	X		X	X	X	X		X
Artificial Forecasting	NPG	Yes	X	X	X	X	X	X	X	X
Flexible Queue Management	NPG	Yes	X	X	X	X	X	X	X	X
Shifting Currents	NGED	No	X					X		X
INSIGHT	SSE T	Yes	X	X	X	X	X	X	X	X

Supporting a just energy transition

Project name	Funding Party	Recommended for funding	Eligibility Criteria 1	Eligibility Criteria 2	Eligibility Criteria 3	Eligibility Criteria 4	Eligibility Criteria 5	Eligibility Criteria 6	Eligibility Criteria 7	Eligibility Criteria 8
Hy-Fair-Alpha	SGN	Yes	X	X	X	X	X	X	X	X

VIVID - Vulnerability Identification Via Informative Data	SSEN D	Yes	X	X	X	X	X	X	X	X
Net Zero Terrace	ENWL	Yes	X	X	X	X	X	X	X	X
SHIELD - Smart Heat and Intelligent Energy in Low-Income Districts	UKPN	Yes	X	X	X	X	X	X	X	X
Guidelight	UKPN	Yes	X	X	X	X	X	X	X	X

5.1 SIF Round 2 Alpha Phase – Support a just energy transition - Summary

This section covers the assessment by the Expert Assessors of round 2 Alpha Applications received into the 'Supporting a just energy transition' Innovation Challenge.

For the Alpha Phase, 7 Applications were submitted to Innovate UK through the Innovation Funding Service (IFS) portal by the closing deadline of 11am 5 July 2023 and are listed below.

Project reference number	Project name	Funding licensee	Total Project costs (£)	Total Project contribution (£)	Total SIF Funding requested (£)	Recommended for funding (Yes/No)
10083475	Hy-Fair - Alpha	SOUTHERN GAS NETWORKS PLC	£547,388.00	£84,187.00	£463,201.00	Yes
10085471	VIVID - Vulnerability Identification Via Informative Data	SCOTTISH AND SOUTHERN ENERGY POWER DISTRIBUTION LIMITED	£516,490.00	£67,965.00	£448,525.00	Yes

10085870	Net Zero Terrace	ELECTRICITY NORTH WEST LIMITED	£578,866.00	£84,364.00	£494,502.00	Yes
10085976	SHIELD - Smart Heat and Intelligent Energy in Low-Income Districts	UK POWER NETWORKS (OPERATIONS) LIMITED	£556,276.00	£81,153.00	£475,123.00	Yes
10086465	Guidelight	UK POWER NETWORKS (OPERATIONS) LIMITED	£547,104.00	£59,782.00	£487,322.00	Yes

5.2 Evaluation of Applications

5.2.1 10083475, Hy-Fair – Alpha, Initial Net Funding Requested £463,201

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
SOUTHERN GAS NETWORKS PLC	£20,040.00	£-	£20,040.00
WALES & WEST UTILITIES LIMITED	£3,624.00	£-	£3,624.00
NATIONAL GAS TRANSMISSION PLC	£2,220.00	£-	£2,220.00
CENTRE FOR ENERGY EQUALITY LTD	£273,705.00	£43,705.00	£230,000.00
FIFE COUNCIL	£6,447.00	£3,197.00	£3,250.00
SP DISTRIBUTION PLC	£3,510.00	£-	£3,510.00
LANE CLARK & PEACOCK LLP	£54,000.00	£5,400.00	£48,600.00
BRITISH GAS NEW HEATING LIMITED	£59,900.00	£19,900.00	£40,000.00
ENERGY SYSTEMS CATAPULT LIMITED	£119,856.00	£11,985.00	£107,871.00
CADENT GAS LIMITED	£4,086.00	£-	£4,086.00

Submitted 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, we 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered "Hy-Fair - Alpha" to have addressed the Innovation Challenge by its focus on aiding vulnerable and disadvantaged consumers during the transition to low carbon technologies. The Project proposes the development of a toolkit for vulnerable consumers, which is aligned with one of the Innovation Challenge's key aims, which is to progress the understanding of consumer vulnerability in the context of energy networks and net zero transition, and develop robust strategies to support these consumers through the project's dedication to developing supportive tools. These tools, underscored by the vital user research behind their creation, could enhance the coordinated efforts of the diverse organizations represented by the consortium partners. The Expert Assessors 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

Eligibility Criterion met

The Expert Assessors considered the Project to have identified a clear potential to deliver a net benefit to gas consumers, primarily facilitated through improved access to energy efficiency advice and actionable insights. Such an approach could

help to ensure that these consumers are well-informed and adequately prepared to engage with energy-efficient practices, leading to tangible benefits in their daily lives and as the energy system transitions to low carbon technologies.

Additionally, the assessors noted a potential broader impact from the Project, extending potential benefits to the wider consumer base. This was considered to be through its potential to minimize delays and reducing planning oversights in network development – issues often stemming from ineffective consumer engagement and messaging.

While high-level, the assessors noted potential net benefits to gas consumers through improved consumer support and greater availability of support, thereby resulting in social benefits. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:
Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to demonstrate network innovation beyond business as usual as it proposes developing a hub and tools to support vulnerable consumers in the transition to low carbon heating. The development of these tools could lead to greater innovation in the way networks integrate and use data and provide support for consumers. This not only augments the support offered to these vulnerable consumers but also signifies a development in network functionality and consumer-centric operations. While the assessors considered the Project to have sufficiently demonstrated network innovation beyond business as usual with the development of these tools, they note that greater clarity on the scope and functionalities of these tools would have strengthened the Application. However, it was also recognised that the Project would be investigating these as part of the Alpha Phase. Overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider the Project to undermine the development of competitive markets because the Project's activities and findings will be openly available, thereby not creating a commercial advantage for specific stakeholders. The outputs could be replicated by other stakeholders and could lead to the development of new or complimentary services and offerings, thereby representing the potential to develop new commercial markets. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative, novel, and risky. It was considered innovative and novel because of its proposal to develop a hub and tools tailored which have the potential to address the significant and difficult challenges and shortcomings with existing approaches. While the assessors noted that greater clarity on the extent of the innovation could have been more clearly articulated in the Application, it was nonetheless considered innovative and novel over existing approaches. The assessors noted that the Project is risky because such an approach has not yet been undertaken and involves a variety of stakeholders and community engagement in a challenging area of the transition, which could alter how the Project progresses. Overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Project was considered to have participation from a sufficient range of stakeholders for the activities set out. The Expert Assessors noted positively the large variety of stakeholders, including several gas distribution and transmission

networks, and representation from electricity distribution networks, energy suppliers, local authorities, housing associations and community-focused social enterprises. Furthermore, they also noted positively the involvement of the Centre for Energy Equality. Overall, the Expert Assessors considered this wide participation of stakeholders to be sufficient for the activities set out and therefore considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to be providing value for money and to be costed competitively. The assessors noted positively the significant financial contributions being made by the consortium partners, which effectively amplify the project's reach and impact without exponentially escalating costs. This was considered to give confidence that the Project's overall costs were providing value for money. Furthermore, the Project's overall costs were considered reasonable for the activities set out, providing confidence that the Project is costed competitively.

Furthermore, the Project's potential social benefits were considered to be greater than its overall costs, which gave further confidence that it was providing value for money. 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.

Eligibility Criterion met

The Expert Assessors considered the Project to have a robust and well thought through methodology, a clear and convincing Project plan, and a clear risk register. They also considered the risk management articulated to be clear and convincing. The assessors noted positively the attention to detail throughout these documents and in the Project management focused work package, which gave them

confidence that the Project will be managed effectively and will be capable of progressing in a timely manner. Overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

During the Alpha Phase, the Project should build a clearer picture of how the capabilities it is developing go beyond the current state of the art, and of how these capabilities will be commercialised into "business as usual" deployment.

The Project proposes a useful and beneficial solution. More detail would have been useful on specific examples of support provided through the tool.

The Project seems to have altered course during the Discovery Phase from a hydrogen transition focus to a broader set of user needs. It might benefit from another Discovery Phase in which it drills down into specific segments with who/how the toolkit might be used and what other existing solutions exist before embarking on the Alpha Phase.

5.2.2 10085471, VIVID - Vulnerability Identification Via informative Data,
Initial Net Funding Requested £448,525

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
SCOTTISH AND SOUTHERN ENERGY POWER DISTRIBUTION LIMITED (SHEPD)	£94,240.00	£10,630.00	£83,610.00
SMART DCC LIMITED	£49,856.00	£5,006.00	£44,850.00
E.ON ENERGY SOLUTIONS LIMITED	£19,262.00	£1,927.00	£17,335.00
ABERDEEN NHT 2014 LLP	£56,100.00	£6,100.00	£50,000.00
UK POWER NETWORKS (OPERATIONS) LIMITED	£14,000.00	£1,400.00	£12,600.00
CGI IT UK LIMITED	£209,468.00	£34,338.00	£175,130.00
QUARRIERS	£73,564.00	£8,564.00	£65,000.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to be clearly aligned with the Innovation Challenge. The Project's core aim is to harness the power of data, in collaboration with multiple stakeholders, to identify and support vulnerable customers more effectively. The emphasis on collaborative data utilization from energy industry, local authorities, and the third sector to pinpoint vulnerable end users underscores its innovative approach. This is directly aligned with one of the Innovation Challenge's key aims, which is to improve coordination between networks and other stakeholders with remit and responsibility for consumer service provision for more targeted and joined-up support. As a result, the Expert Assessors considered 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

Eligibility Criterion met

The Expert Assessors considered the Project to have identified a potential to deliver a net benefit to electricity consumers, particularly those in vulnerable situations. The assessors noted that the Project's proposal could allow for enhanced identification of vulnerable consumers, who would then benefit from identification, support and safeguarding by the networks. The assessors considered this to represent a social benefit for these consumers. As such, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to involve network innovation because it proposes bringing together and examining data sets to identify and support vulnerable users. This was considered to involve network innovation beyond business-as-usual practices because it proposes a different approach to the use of data and Priority Services Register (PSR) for network operators, which could result in new solutions for using rich datasets to identify vulnerable households and consumers. The Expert Assessors therefore considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Project was considered to demonstrate a commitment to fostering, rather than hindering, competitive markets. Its primary objective is not to encroach upon or duplicate existing services but to develop a method for identifying and assisting vulnerable users. By concentrating on this specific facet of the energy sector, the Project remains removed from potential market disruptions or competition. The Expert Assessors did not consider there to be any evidence that the Project would be or is undermining the development of competitive markets. Furthermore, its focus on enhancing the identification and support mechanisms for vulnerable users reaffirms its non-competitive intent by networks. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Project was considered to be innovative and risky because it is bringing together datasets and analysing them to provide new information to support in the

identification and support of vulnerable consumers. It was considered novel and innovative because it is a new approach and requires collaboration and cooperation across multiple datasets and stakeholders in order for the Project's proposal to come to fruition. Furthermore, it was considered risky because it must adhere to the data protection requirements set out for vulnerable consumers. As such, all Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to include participation from a sufficient range of stakeholders for the activities set out. The assessors noted positively the wide range of stakeholders, including specifically the participation from Quarriers and Aberdeen City Council, technology-based organisations such as CGI, as well as consumer groups and representation from third sector. This range of stakeholders was considered sufficient for the activities set out and the Expert Assessors therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project and its overall costs to demonstrate value for money and to be costed competitively. The assessors noted that the Project costs were reasonable and comparable to industry norms for the activities set out, which gives confidence that it is costed competitively. Furthermore, the assessors also noted that the Project could result in fairly significant social benefits for consumers and vulnerable consumers, which they considered to demonstrate value for money against the Project's costs. Overall, the assessors considered the Project's costs for the scope and activities set out to be reasonable and comparable to industry norms, thereby providing assurance that the costs are competitive. The

Expert Assessors have therefore 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.

Eligibility Criterion met

The Project was considered to have a robust methodology which gives confidence that it will be capable of progressing in a timely manner. The assessors noted positively the clearly defined work packages with clear ownership across the Project team, along with clearly set out milestones and timelines. The assessors also noted that the Project has clearly identified the key risks in its risk register and that it was completed to a sufficient level for the activities set out for the Alpha Phase. Together, these gave the assessors confidence that the Project has a robust methodology and that it will be capable of progressing in a timely manner. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities. The Project has identified an area within the Smart Meter Code where existing codes could be streamlined to align with the data provisions for Distribution Network Operators and suppliers to aid in the identification and support of vulnerable consumers. The Project has included a work package as part of the Alpha Phase which is focused on examining this further and opportunities for alignment and streamlining.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

This Project seems to have a clear aim in relation to vulnerable customers. It would be good to think more about the potential product that the Project has to offer to other regions.

5.2.3 10085870, Net Zero Terrace, Initial Net Funding Requested £494,502

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
ELECTRICITY NORTH WEST LIMITED	£115,884.00	£11,588.00	£104,296.00
URBANCHAIN LTD	£35,410.00	£4,046.00	£31,364.00
ROSSENDALE BOROUGH COUNCIL	£11,000.00	£1,100.00	£9,900.00
NORTHERN POWERGRID (NORTHEAST) LIMITED	£7,140.00	£7,139.00	£1.00
CENTRE FOR ENERGY EQUALITY LTD	£67,000.00	£22,110.00	£44,890.00
ROSSENDALE VALLEY ENERGY LIMITED	£73,500.00	£7,350.00	£66,150.00
UK POWER NETWORKS (OPERATIONS) LIMITED	£1,875.00	£1,874.00	£1.00
UNIVERSITY OF SALFORD	£49,980.00	£5,000.00	£44,980.00
BURO HAPPOLD LIMITED	£211,577.00	£21,157.00	£190,420.00
KENSA UTILITIES LIMITED	£5,500.00	£3,000.00	£2,500.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the Innovation Challenge because it focuses on housing which is unable to utilise air source heat pumps due to the terrace housing type, which are more typically associated with more vulnerable/fuel poor consumers. It was noted that this focus could approach has the potential to provide a model to decarbonise a portion of the housing stock, thereby aligning with the aims of the Innovation Challenge. The assessors therefore considered 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

Eligibility Criterion met

The Expert Assessors considered the Project to have clearly identified a potential to deliver a net benefit to gas and electricity consumers because it has the potential to provide low carbon solutions to households not able to transition to air source heat pumps. This was considered to have the potential to deliver a net benefit to consumers through costs savings in reducing the need for network upgrading, thereby delivering a financial benefit. It was also noted that the Project has the potential to further reduce costs through its proposed use of community-owned solar. As a result, the assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to involve network innovation because it examines how to establish a smart local energy system for housing not suitable for air source heat pumps and brings together multiple potential solutions. It was also noted positively that the Project is examining how community-led smart local energy systems could be integrated into the network connections process. Together, these aspects of the Project were considered to involve network innovation because they go beyond the business as usual approach, with the potential to develop innovation local energy system options, and could facilitate collective connection applications. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider the Project to undermine the development of competitive markets because it has the potential to remove barriers to entry for the development of low carbon heat as a service. The assessors noted positively that the Project has the potential to develop new competitive markets. It was also noted that the Project clearly sets out how the deployment of its proposed solution would help develop local supply chains, providing confidence that competitive markets will not be undermined. As a result, the Project was considered to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Project was considered innovative and risky by the Expert Assessors. It was considered this because it brings together a range of smart local energy system technologies and stakeholders and applies them to mixed ownership terrace housing. It was noted that the proposed model has not yet been tested at scale and will involve the utilisation of peer-to-peer trading to facilitate lower cost

energy for consumers. It was considered risky because the Project will need to overcome barriers to grid integration to be implemented because of its first of a kind nature. As a result, the Project was considered to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Project was considered to include participation from a sufficient range of stakeholders for the Alpha Phase activities. It was noted positively that the Project brings together a range of stakeholders representing various technical and social elements of the Project, such as businesses and consumer-focus organisations. It was also noted that the Project has sufficient stakeholders for the dissemination and community engagement activities set out. As a result, the assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to provide value for money and to be costed competitively because the costs were considered appropriate for the activities set out. The assessors also noted that the Project Projects are providing significant contributions towards the contribution, which they considered to give confidence that the Project is costed competitively. The assessors also noted positively the potential for significant benefits from the Project, specifically around the acceleration of decarbonisation for a significant portion of UK housing stock. As a result, 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.

Eligibility Criterion met

The Expert Assessors considered the Project to have set out a strong and robust methodology. They noted the clear Project plan and articulation of the Project's approach. They also noted the clear documentation provided by the Project, including its risk register and Gantt chart. Together, these gave the assessors confidence that the Project would be capable of progressing in a timely manner in the Alpha Phase.

Regulatory barriers identified for the Project Phase**NO**

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority**FUND**

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.

Recommended Project specific conditions

The Project should seek to engage with Community Energy Scotland, Local Energy Scotland and HeatSource. These organisations are all keen to support communities to decarbonise and would assist with dissemination.

5.2.4 10085976, SHIELD - Smart Heat and Intelligent Energy in Low-Income Districts, Initial Net Funding Requested £475,123

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
UK POWER NETWORKS (OPERATIONS) LIMITED (EPN)	£95,725.00	£9,572.00	£86,153.00
ESSEX COUNTY COUNCIL	£11,635.00	£1,164.00	£10,471.00
ELECTRICITY NORTH WEST LIMITED	£1,656.00	£1,655.00	£1.00
URBANCHAIN LTD	£30,639.00	£4,616.00	£26,023.00
POWER CIRCLE PROJECTS LTD	£195,394.00	£19,680.00	£175,714.00
THERMIFY HOLDINGS LIMITED	£88,234.00	£8,823.00	£79,411.00
CITIZENS ADVICE ESSEX LIMITED	£78,184.00	£30,000.00	£48,184.00
EASTLIGHT COMMUNITY HOMES LIMITED	£22,176.00	£2,218.00	£19,958.00
UK COMMUNITY WORKS CIC	£32,633.00	£3,425.00	£29,208.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the Innovation Challenge because it is focused on supporting vulnerable consumers by providing low input cost solutions and potentially vastly reducing their energy bills. This could act as an alternative to low-carbon heating for low-income households. This was considered to have aligned directly with one of the aims of the Innovation Challenge, which is to progress the understanding of consumer vulnerability in the context of energy networks and net zero transition, and develop robust strategies to support these consumers. As a result, the Expert Assessors considered 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

Eligibility Criterion met

The Expert Assessors considered the Project to have clearly identified potential to deliver a net benefit to both gas and electricity consumers because its proposed solution could lower bills and energy transition costs. Its proposed approach was noted to also have the potential to reduce the amount of electricity required by consumers, which could reduce the amount of reinforcement and investment needed in the grid. It was noted that Project's benefits would be across social, environmental, efficiency and financial benefits. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to clearly involve network innovation because it proposes implementing an integrated low carbon domestic solution which involves renewables plus data centre heat. It was noted that this approach has not yet been analysed in GB, which the Expert Assessors considered to demonstrate network innovation beyond business as usual approaches. It was also noted that the Project could result in opportunities for balancing and flexibility services, potentially leading to additional areas for network innovation. Overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider the Project to undermine the development of competitive markets and instead represent the potential to stimulate new competitive markets from the results of the Project. This is because the Project's approach could be replicated, resulting in the stimulation of new competitive markets, while benefiting and supporting vulnerable consumers. None of the assessors considered there to be any potential for competitive markets to be undermined and, therefore, they considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Project was considered to be innovative and risky because it proposes trialling a new way of transitioning households to low carbon solutions. It was considered innovative because it would not normally arise from standard commercial activities. It was considered risky because, in order for it to be successful, it will

require condensing of knowledge and approaches from a number of Project Partners and to engage with network regulators. This mix of approaches and challenges was also considered by one of the assessors to result in the Project having a novel approach. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to have participation from a sufficient range of stakeholders for the activities set out and noted positively the alignment of the Project Partners with their areas of expertise. They also noted positively the large variety of stakeholders in the Project, recognising that this could signify good buy-in by the targeted consumers, and the inclusion of Citizens Advice and Essex County Council in the Project team. The Expert Assessors therefore considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Project was considered to provide value for money and to be costed competitively. The assessors noted the potential high benefits for consumers from the Project compared to the Project's overall costs, which they considered to represent value for money. The Project's overall costs were also considered reasonable for the activities set out and comparable to industry norms, giving them confidence that the Project is costed competitively. 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.

Eligibility Criterion met

The Expert Assessors considered the Project to have set out a robust, methodical approach that is both strategic and detailed. The clarity of the project's trajectory, as depicted in the Gantt chart and workplan, instilled confidence in its potential for timely execution and success. Moreover, the comprehensive milestones and risk registers were noted positively by the Expert Assessors and were considered to be of high quality. The assessors noted the Project was well thought through, which gave them further confidence that it will be capable of progressing in a timely manner. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities. The Project also has a work package as part of its Alpha Phase activities focused on examining this further.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

The Project addresses a relevant problem and suggests a potentially interesting and innovative solution. Nevertheless, it is not clear if the overall cost of that solution, including the investment cost, will be lower than the counterfactual. The Project should investigate as part of the Alpha Phase and provide a summary of its findings on whether the proposed solution by the Project is likely to make commercial sense for investors, once the costs of the equipment (including, for example, solar generation, energy storage and heat pumps) is taken into account. This should be compared against the counterfactual.

The Project sets out an interesting solution and an appropriate plan to move forward. The Project should seek to integrate thinking from some of the IUK pathfinder projects as appropriate.

5.2.5 10086465, Guidelight, Initial Net Funding Requested £487,322

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
UK POWER NETWORKS (OPERATIONS) LIMITED (LPN)	£68,445.00	£6,845.00	£61,600.00
SIA PARTNERS UK PLC	£165,000.00	£24,750.00	£140,250.00
PORTSMOUTH CITY COUNCIL	£11,850.00	£1,775.00	£10,075.00
LONDON BOROUGH OF HACKNEY	£5,600.00	£1,000.00	£4,600.00
SOMERSET COUNCIL	£7,500.00	£1,500.00	£6,000.00
UNIVERSITY OF SOUTHAMPTON	£134,653.00	£11,023.00	£123,630.00
CENTRE FOR SUSTAINABLE ENERGY	£131,260.00	£10,593.00	£120,667.00
UTILITA ENERGY LIMITED	£11,000.00	£1,100.00	£9,900.00
SCOTTISH AND SOUTHERN ENERGY POWER DISTRIBUTION LIMITED	£11,796.00	£1,196.00	£10,600.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered this Project to have addressed the Innovation Challenge because it pioneering social research techniques to engage consumers and by creating an accessible toolkit to promote the adoption of low-carbon technologies (LCT). Its goal is to establish innovative and scalable methods for comprehending the requirements of and offering assistance to marginalised customers. Furthermore, the Project directly addresses the Innovation Challenge by enhancing the involvement of low-income consumers in the energy transition and by facilitating a smoother customer experience for vulnerable individuals during their shift to LCT technologies and retrofit processes. This is related to the aims of the Innovation Challenge and the Expert Assessors therefore considered 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

Eligibility Criterion met

The Expert Assessors considered this Project to have clearly identified potential to deliver a net benefit to electricity consumers because it is exploring enhancing flexibility for network operators, thus diminishing the need for costly network reinforcement, while also directly benefiting vulnerable consumers with lower energy expenses, increased confidence, and engagement. It is imperative to

recognise the value of leveraging data to prevent the exclusion of vulnerable customers.

The projected number of benefiting households annually, pegged at 250, was considered conservative by the assessors and the Project confirmed this in the interview. These advantages of the Project span both the network, through aspects like enhanced flexibility, and consumers, via reduced energy costs and heightened confidence and engagement. However, there is a noticeable lack of evaluation regarding potential adverse effects and mitigation strategies. A deeper dive into quantitative measures for tracking these benefits would have strengthened the Application. However, overall, with its market sizing and detailing of potential perks, the Project evidently stands poised to offer substantial net benefits to electricity consumers. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered this Project to involve network innovation because it is exploring strategies to empower vulnerable consumers for more efficient interaction with the energy system and networks, potentially leading to decreased individual and overall system expenses.

The suggested approach incorporates components of network innovation focused on enhancing engagement with vulnerable consumers and their utilisation of data to support network optimisation. All Expert Assessors noted that the innovation strategy and focus was broad, and they highlighted the importance of having to prioritise use cases. During the interview, there were different views on which consumers the toolkit are intended for which amplified the recommendation from the Expert Assessors to develop more specific outcomes. One way the Expert Assessors suggested doing this is by defining the user archetypes and the

definition of vulnerability. However, overall, the Expert Assessors considered this Project to have met the Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider this Project to be undermining the development of competitive markets because it focuses on research methods and support tools for an underserved user segment, as these aspects are not presently offered in the market due to limited interest from commercial entities.

One Expert Assessor did note that the 'Route to Market' work package should explore the potential long term sustainable toolkit commercialisation in the Alpha Phase. However, overall, the Expert Assessors did not consider there to be any indication that the Project poses a risk to competitive markets' growth. The Expert Assessors consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative and risky because they considered it to be exploring ground breaking research methods and an accessible toolkit tailored to the needs of vulnerable consumers, involving considerable risk in designing and effectively implementing these solutions. The Alpha Phase serves as a vital means to mitigate this risk by enhancing the consortium's understanding of consumer needs and potential designs.

Additionally, the Project's novelty stems from its diverse stakeholder contributions, including network companies, consumer organisations, local authorities, universities, and the not-for-profit sector, a collaboration that would not occur in the absence of the Project. This innovation is further underscored by its utilisation of data and social research methods. The assessors noted that the Application

would have been strengthened considerably from defining the archetypes or use cases for the users and consumers of this toolkit. The assessors have recommended a Project-specific condition for the Project to provide by this by the end of the Alpha Phase. Overall, the Expert Assessors consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered this Project to include participation from a sufficient range of stakeholders for this Eligibility Criteria to be met because includes 2 network operators, 3 local authorities, an energy supplier, a research institute, a consumer-focused social enterprise, and a commercial enterprise. Moreover, it benefits from backing by additional entities with an interest in aiding vulnerable consumers, including mobile network operators. This inclusive approach ensures a comprehensive representation of stakeholders pertinent to the vulnerable consumer segment and were considered sufficient for the activities set out. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to be delivering value for money and be costed competitively because there is a suitable share of expenses through partner contributions, utilising sensible inputs concerning day rates and days worked. This approach ensures the Project's financial feasibility. Furthermore, the Project's potential for substantial value and favourable return on investment relative to its costs underscores its value for money. The Project costs were considered reasonable and aligned with the concept of delivering value for money.

The Expert Assessors therefore 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.

Eligibility Criterion met

The Expert Assessors considered the Project to have a robust methodology which gives confidence that it will be capable of progressing in a timely manner because there is a well-structured project plan, and risk analysis that show a proactive approach to risk mitigation. One Expert Assessor did note that the plan could enhance its effectiveness by breaking larger tasks into smaller components, allowing for agile development tracking.

While the risk assessment is thoughtfully done, encompassing deep considerations on mitigations for each identified risk, there is room for improvement in coordinating learnings across partners to prevent an overemphasis on individual work packages. To enhance this solid foundation, a more detailed Gantt chart delineating task dependencies might be beneficial.

Despite this, the Expert Assessors considered the Project management plan to be clearly articulated and robust, seamlessly aligning milestones, the Project plan, and the risk register, which instils confidence in the Project's timely and efficient delivery. All Expert Assessor also considered there to be potential risk that the Project is too broad and therefore may not deliver useful output which are focussed and have a clear delivery pathway.

However, overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

At the end of phase meeting, the project should provide a deliverable detailed the user archetypes for the toolkit along with any suitable definitions.

6.1 SIF Round 2 Alpha Phase – Accelerating decarbonisation of major demands - Summary

This section covers the assessment by the Expert Assessors of round 2 Alpha Phase Applications received into the 'Accelerating decarbonisation of major demands' Innovation Challenge.

For the Alpha Phase, 16 Applications were submitted to Innovate UK through the Innovation Funding Service (IFS) portal by the closing deadline of 11am 5 July 2023 and are listed below.

Project reference number	Project name	Funding licensee	Total Project costs (£)	Total Project contribution (£)	Total SIF Funding requested (£)	Recommended for funding (Yes/No)
10085805	Planning Regional Infrastructure in a Digital Environment (PRIDE) (Alpha phase)	NATIONAL GRID ELECTRICITY DISTRIBUTION PLC	£558,491.00	£58,617.00	£499,874.00	Yes
10078929	Inform	NORTHERN POWERGRID (NORTHEAST) LIMITED	£449,341.00	£60,850.00	£388,491.00	Yes

10081586	Integrated Hydrogen Transport Hubs	WALES WEST UTILITIES LIMITED	£496,559.00	£62,225.00	£496,559.00	No
10085252	Local Energy Oxfordshire - Neighbourhoods (LEO-N)	SCOTTISH AND SOUTHERN ENERGY POWER DISTRIBUTION LIMITED	£534,619.00	£53,460.00	£481,159.00	Yes
10084666	RetroMeter	ELECTRICITY NORTH WEST LIMITED	£537,937.00	£54,003.00	£483,934.00	Yes
10085218	Resilient and Flexible Railway Multi-Energy Hub Networks for Integrated Green Mobility - Round 2	SP TRANSMISSION PLC	£541,020.00	£61,169.00	£479,851.00	No

10085395	Net Zero Community Energy Hubs - Alpha	SOUTHERN GAS NETWORKS PLC	£552,215. 00	£71,503.00	£480,712.00	No
10085396	Carnot Gas Plant - Alpha	SOUTHERN GAS NETWORKS PLC	£353,433. 00	£54,073.00	£299,360.00	No
10085975	Lightspeed	UK POWER NETWORKS (OPERATIONS) LIMITED	£587,831. 00	£89,903.00	£497,928.00	Yes
10086034	Indus	UK POWER NETWORKS (OPERATIONS) LIMITED	£551,953. 00	£55,196.00	£496,757.00	Yes
10086311	Watt Heat	UK POWER NETWORKS (OPERATIONS) LIMITED	£540,489. 00	£54,045.00	£486,444.00	Yes
10086418	Park & Flex	UK POWER NETWORKS (OPERATIONS) LIMITED	£519,416. 00	£51,946.00	£467,470.00	Yes
10086429	Heat Risers	UK POWER NETWORKS	£544,201. 00	£54,466.00	£489,735.00	Yes

		(OPERATIONS) LIMITED				
10086459	Full Circle	UK POWER NETWORKS (OPERATIONS) LIMITED	£463,123. 00	£46,312.00	£416,811.00	Yes
10086460	Heatropolis	UK POWER NETWORKS (OPERATIONS) LIMITED	£537,089. 00	£53,715.00	£483,374.00	Yes
10087236	Tyseley Environmental Enterprise District (TEED) Alpha Phase	NATIONAL GRID ELECTRICITY DISTRIBUTION (SOUTH WEST) PLC	£593,226. 00	£119,893.00	£473,333.00	No

6.2 Evaluation of Applications

6.2.1 10085805, Planning Regional Infrastructure in a Digital Environment (PRIDE) (Alpha phase), Initial Net Funding Requested £499,874

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
NATIONAL GRID ELECTRICITY DISTRIBUTION PLC (EMID): EAST MIDLANDS PLC	£19,475.00	£1,950.00	£17,525.00
ADVANCED INFRASTRUCTURE TECHNOLOGY LTD	£327,040.00	£32,704.00	£294,336.00
WEST MIDLANDS COMBINED AUTHORITY	£93,634.00	£9,394.00	£84,240.00
NATIONAL GRID ELECTRICITY SYSTEM OPERATOR LIMITED	£11,092.00	£2,219.00	£8,873.00
REGEN SW	£107,250.00	£12,350.00	£94,900.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

All Expert Assessors considered this Project to have addressed the Innovation Challenge because the Project has the potential to enable better utilisation of Local Area Energy Plans to help facilitate place based decarbonisation, this is aligned with one of the aims of the Innovation Challenge. The Project has potential to reduce speculation on demand requirements and solution location planning which aims to enhance investment decision making to enable decarbonisation. Overall, the Expert Assessors considered this Eligibility Criteria to be met.

Eligibility Criterion 2:

Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers

Eligibility Criterion met

The majority of the Expert Assessors considered the Project to have identified a potential to deliver net benefit to consumers through using a digital solution to better utilise local area plans, enabling better decision making in local areas and facilitating successful delivery of wider decarbonisation projects. While majority of Expert Assessors considered the scope of Project to be able to deliver benefits, the Expert Assessors considered it necessary for the Project to provide further granularity around the type of benefits the Project will deliver and the particular use cases in which these benefits will materialise. The Expert Assessors have recommended a Project-specific condition for the Project to provide this granularity should it be selected for SIF Funding to mitigate this risk. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered this Project to involve network innovation because of the focus on Local Area Energy Planning (LAEP) and integration of digital solution therein. More efficient use of LAEPs was considered to have the potential to lead to greater understanding of network capacity and optimised planning for new and existing infrastructure. The Project was also considered to offer a solution to support collaboration of the private and public sector to deliver decarbonisation solutions and prime the market for investment. This offer and its focus on more efficient network planning was consider to demonstrate network innovation beyond business-as-usual approaches. Overall, the Expert Assessors considered this Eligibility Criteria to be met.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors considered the Project to have met this Eligibility Criteria because it does not undermine the development of competitive markets. The assessors noted that the Project articulates its intent for dissemination activities in the Alpha Phase but noted that greater clarity on this in the Project's activities would have strengthened the Application. The assessors also noted positively the Project's focus on introducing competitive elements in the Project, which they noted as developing competitive markets for its proposed solution. Overall, the Expert Assessors considered this Eligibility Criteria to be met.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative, novel and risky because of the ambitious nature of the Project. The assessors noted the elements of risk being partly because of the aim of adoption by other local areas, where each comes with its own licence and data governance challenges. Secondly, digital

twinning and integration of LAEPs were considered new to market, therefore integrating them was considered inherently innovative. Finally, the collaboration with public sector was considered to be novel approach to the proposed solution. Overall, the Expert Assessors considered the Project to meet the Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to meet this Eligibility Criteria. The Project demonstrates engagement with representatives of customers and network companies. Additionally, The Project has demonstrated engagement with the wider energy sector and beyond, such as with HS2 and EV chargers, in addition to stakeholders within water industry. This was considered sufficient for the Alpha Phase activities set out.

While the Expert Assessors considered the Eligibility Criteria to have been met, they noted stakeholder engagement could have strengthened by incorporating more activities which seek to learn about other work in this domain. Overall, however, the Expert Assessors considered this Eligibility Criteria to be met.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to have met the Eligibility Criteria because, overall, the Project costs were considered reasonable for the activities set out and reflective of the complexity of digital solution to be developed. They noted positively that the several of the Project Partners having included lower than usual day rates, which gave the Expert Assessors confidence that it is costed competitively.

The Expert Assessors also noted that the Project could have included greater costs and activities for stakeholder engagement, as they noted that the benefits set out

by the Project somewhat rely on ensuring it incorporates existing work in this area. They also noted that greater costs allocated to stakeholder engagement would have also strengthened the value for money of the Project.

Overall, however, the Expert Assessors considered the Project to have met this 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.

Eligibility Criterion met

The Expert Assessors considered the Eligibility Criteria to be met because the Project governance and plan demonstrate a well-thought through, robust approach to project management and delivery. The Project team highlighted that the agile methodology will used be to deliver the Project which provided the assessors with confidence that the Project will be able to progress in a timely manner. The assessors also noted positively the alignment of the Project team with the activities set out, which provided further confidence in the Project’s capability of progressing in a timely manner in the Alpha Phase. Overall, the Expert Assessors considered this Eligibility Criteria to be met.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

The Project Team should use midpoint meeting to highlight consumer benefits. Such benefits should be highlighted in respect of different use cases (including multi local area adoption)

The Project team should use the mid-point meeting to explain how they have investigated other work which is ongoing in this area

6.2.2 10078929, Inform, Initial Net Funding Requested £388,491

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
NORTHERN POWERGRID (NORTHEAST) LIMITED	£15,900.00	£15,899.00	£1.00
RENEWABLE ENERGY NETWORK LIMITED	£6,500.00	£650.00	£5,850.00
NEWCASTLE HOSPITALS	£1,500.00	£1,499.00	£1.00
EA TECHNOLOGY LIMITED	£330,228.00	£33,023.00	£297,205.00
KENSA CONTRACTING LIMITED	£3,843.00	£642.00	£3,201.00
CITY OF YORK COUNCIL	£1,700.00	£170.00	£1,530.00
ENERGY SYSTEMS CATAPULT LIMITED	£89,670.00	£8,967.00	£80,703.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the Innovation Challenge due to its focus on supporting the decarbonisation of large electricity demands. This is closely aligned with one of the central aims of the Innovation Challenge, which is to integrate energy efficiency together with flexibility to reduce costs of connecting and operating decarbonised heat and transport demands. Moreover, the Project underscores the acceleration potential for network connections catering to major energy users, offering a potential solution to the present challenges. The Project was considered to provide a compelling justification for this innovation, further demonstrating its alignment with the Innovation Challenge. As a result, the Expert Assessors considered 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

Eligibility Criterion met

The Expert Assessors considered Project as having identified multiple potential net benefits for electricity consumers. Foremost, by reducing socialised network connection costs and expediting the connection requests from customers with decarbonisation plans, which was considered to represent both cost and time efficiencies for consumers. Furthermore, the Project's innovative approach offers a potential net benefit to major energy users by potentially accelerating new network connections, thereby easing the transition process. It was also noted the software proposed by the Project could be helpful in assisting industrial customers in decarbonising. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to involve network innovation because its proposal of developing a new tool represents a potential significant improvement over the counterfactual currently in use. By creating a portal that offers users a manner of accessing network connection information, the Project has displayed a distinct form of network innovation. The software's capability to assist industrial entities, especially the industrial SMEs, in self-evaluating the potential upgrades on their sites without necessitating extensive network modifications was considered to further demonstrate network innovation. As a result, the Expert Assessors considered the Project to involve network innovation and they therefore considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

From the Expert Assessors' perspective, the Project was not considered to undermine the development of competitive markets. The Project's primary focus is centred around diminishing customer connection costs and minimizing waiting durations, which the assessors did not consider to intersect with competitive markets. Moreover, the Project was considered to support customer benefits and learnings, which will be disseminated, thereby potentially stimulating additional competitive markets. While one assessor noted that EA Technology, which is set out to receive a significant portion of the Project's SIF Funding, has previously undertaken similar Projects in the past, they also noted the potential for the Project to accelerate the development of the proposed solution which would enable further solutions to be developed. On balance, the Expert Assessors considered the Project to not be undermining the development of competitive markets.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

From the Expert Assessors' perspective, the Project was considered to have an innovative, novel and risky nature. The proposed solution, although imbued with elements of risk that would make it infeasible as a standard commercial activities, has the potential to benefit a large number of consumers. The Project's innovative and novel nature were considered to be in its proposal of developing new methodologies and information to end-users. Furthermore, in the current market landscape, the Expert Assessors did not consider there to be similar offerings available. It was noted that there is an element of risk as much of the Project's success, hinges on the broad-based adoption and support from DNOs. Overall, however, the Expert Assessors considered the Project to be novel, innovative and risky and therefore considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors' considered the Project to have participation from a sufficient range of stakeholders for the activities set out. The inclusion of stakeholders such as a DNO, consultancies, software developers, local authorities, customers, the Expert Assessors positively viewed the NHS and decarbonisation solution providers. The Project's methodology, which mentions stakeholder interviews, was also viewed positively by the Expert Assessors as way of ensuring a wide variety of feedback is considered in the development of the proposal. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to provide value for money and to be costed competitively. The Project was considered to provide value for money because its proposed solution puts forward both economic and environmental advantages for consumers. The assessors also considered the proposed rates and

overall costs for the Project to be appropriate for the activities set out and to be aligned with industry norms. The Expert Assessors also recognized the Project's potential benefits as credible, suggesting that the SIF Funding requested is reasonably allocated. As a result, 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.

Eligibility Criterion met

The Expert Assessors considered the Project to demonstrate a robust methodology underpinned by a clear Project plan, which they considered to provide confidence that the Project will be capable of progressing in a timely manner. They noted that the Project clearly builds from its Discovery Phase activities and findings, which they viewed positively. It was also noted that EA Technology's experience in this area gave confidence in the Project team's ability to progress in a timely manner. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

The Project should ensure a range of potential customers are involved in the Alpha Phase.

The Project should consider a tie-in with the Transforming Foundation Industries Innovate UK funding programme, as many of these companies struggle with decarbonisation in part due to grid constraints/upgrade costs.

6.2.3 10081586, Integrated Hydrogen Transport Hubs, Initial Net Funding Requested £496,559

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
NATIONAL GRID ELECTRICITY DISTRIBUTION PLC	£9,814.00	£982.00	£9,814.00
WALES & WEST UTILITIES LIMITED	£45,600.00	£5,080.00	£45,600.00
VITAL ENERGI UTILITIES LIMITED	£14,406.00	£1,601.00	£14,406.00
PEMBROKESHIRE COUNTY COUNCIL	£2,723.00	£273.00	£2,723.00
PROTIUM GREEN SOLUTIONS LIMITED	£16,281.00	£1,809.00	£16,281.00
GUIDEHOUSE EUROPE LIMITED	£407,735.00	£52,480.00	£407,735.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered this Project to have addressed the Innovation Challenge because the technical approach is novel as it aims to develop a solution that will manage integrated energy demands across heat and transport. The demand side solution also has potential to address network needs in areas such as provision of flexibility and management of losses. This was considered to be directly aligned with the aims of the Innovation Challenge and the Expert Assessors have therefore considered this Eligibility Criteria to have been met.

Eligibility Criterion 2:

Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers

Eligibility Criterion met

The Expert Assessors considered this Project to have clearly identified potential to deliver a net benefit to electricity and gas consumers through potentially delivering heating at lower cost. There is also potential for indirect financial benefits to all consumers by reducing costs of network reinforcement and societal benefit through carbon savings.

The Expert Assessors, however, considered the potential benefits to depend on the ability to scale up the proposed solution and noted that the services and technologies are in their infancy. They noted that greater details on the proposed solution and its potential benefits at various scale up stages would have strengthened the Application. On balance, the Expert Assessors considered the Project to have clearly identified potential to deliver a net benefit to consumers and therefore considered the Eligibility Criteria to have been met.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered this Project to have met this Eligibility Criteria because it involves network innovation. This is because it seeks to develop a solution that has potential to reduce the need for network reinforcements, both through directly managing loads on the networks and indirectly by providing additional flex to the network. The solution aims to harness demand nodes and link with heat networks. This focus and inclusion of demand nodes and linking with heat networks were considered to demonstrate network innovation beyond business-as-usual.

The assessors that the incorporating renewable generation into the Project's approach would have strengthened its network innovation by more clearly capturing constraint values. However, overall, the Expert Assessors considered the Project's approach and proposed solution to involve network innovation.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors considered the Project to not undermine the development of competitive markets because the Project has set out its plan to make all its findings and data openly available. The assessors noted that this approach would not undermine current or future competitive markets and also noted that this has the potential to stimulate additional and new competitive markets based on the Project's findings. As a result, the Expert Assessors considered this Eligibility Criteria to have been met.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered this Project to be innovative, novel and risky because it aims to develop a solution that entails both technical and commercial innovation, with the integration of components within the hubs, and the integration of revenue streams addressed by the hubs. This integration of various streams and

corresponding stakeholders was considered innovative and novel. The assessors also noted that the Project has elements of risk due to policy and regulatory uncertainties surrounding hydrogen and heat networks, and the current commercial readiness level of the proposed solution. As a result, the Expert Assessors considered the Project to meet the Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to have met this Eligibility Criteria because it includes partners and or subcontractors from across the value chain for the Problem it seeks to address. The assessors noted that this includes gas, electricity and heat network operators, technical and commercial solution design expertise, and local authorities. While the Expert Assessors noted that greater involvement of the local authority and that inclusion of Premzero as a Project Partner rather than subcontractor would have strengthened the Application. However, overall, the Expert Assessors considered the Project to include participation from a sufficient range of stakeholders for the activities set out for the Alpha Phase. The Expert Assessors therefore considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion not met

The Expert Assessors did not consider the Project to provide value for money and be costed competitively.

First, the Expert Assessors considered the day rates of some of the Project Partners to be higher than anticipated and higher than industry norms. The assessors queried during the interview whether an open procurement process had been followed to appoint Guidehouse, noting that approximately 80% of the funding requested would be awarded to them. Following this, the assessors did not

consider the Project to have provided sufficient justification or clarity around these higher than anticipated costs and day rates for them to have confidence that it was providing value for money and is costed competitively.

Second, the Expert Assessors did not consider the Project to be delivering value for money due questions and concerns around the scalability of the solution and its potential benefits to consumers, thereby limiting the potential value for money and the assessment of whether the costs set out were reasonable for the potential benefits. Furthermore, the solution was considered to be at a low technology readiness level, which therefore carries financial risk, but the assessors did not consider this risk to have been sufficiently offset or addressed by the contributions set out.

Third, the assessors noted that there is potentially significant benefits for the Project Partner Vital Energi Utilities, should the proposed solution be successful, but did not consider its contributions to accurately reflect this potential for benefits.

Finally, the assessors noted that the budget set out by the Project did not provide sufficient clarity on what aspects of the Project's costs would be covered by each of the Project Partners and the Funding Party. This did not provide confidence to the assessors that the Project was therefore providing value for money or costed competitively.

Overall, the Expert Assessors did not consider the Eligibility Criteria to have been met.

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.

Eligibility Criterion met

The Expert Assessors considered the Project to have a robust methodology which gives confidence that it will be capable of progressing in a timely manner in the Alpha Phase. This is because it the Project demonstrated it be managed through

proven project management methods and the Project set out a sufficiently detailed Project plan and Gantt chart and sufficiently defined work packages with interdependencies highlighted. The assessors did note that the work packages could have been strengthened by breaking them down into smaller work packages with clear costings.

The Expert Assessors considered the risk register and mitigation options identified to be sufficient, though they noted it could have been strengthened with greater attention to wider risks in addition to the immediate risks which were set out, such as commercial and regulatory risks to full deployment.

Overall, however, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities. The Project has also set out specific work packages to further examine potential barriers and engage with relevant stakeholders.

Recommendation to the Gas & Electricity Markets Authority

DO NOT FUND

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.

Recommended Project specific conditions
N/A

6.2.4 10085252, Local Energy Oxfordshire - Neighbourhoods (LEO-N),
Initial Net Funding Requested £481,159

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
SCOTTISH AND SOUTHERN ENERGY POWER DISTRIBUTION LIMITED (SSEPD)	£54,168.00	£5,417.00	£48,751.00
UNIVERSITY OF OXFORD	£100,000.00	£10,000.00	£90,000.00
BARINGA PARTNERS LLP	£189,997.00	£19,000.00	£170,997.00
OXFORDSHIRE COUNTY COUNCIL	£19,822.00	£1,982.00	£17,840.00
OXFORD CITY COUNCIL	£19,942.00	£1,994.00	£17,948.00
THE LOW CARBON HUB IPS LTD	£129,998.00	£12,998.00	£117,000.00
RETROFIT WORKS LIMITED	£20,692.00	£2,069.00	£18,623.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered this Project to have addressed Innovation Challenge because it provides a comprehensive approach to delivery of additional net zero flexibility services, including outreach to less affluent households and small businesses. The Expert Assessors recognised that the proposal builds upon key learnings from previous innovation projects which have been successful and provides justification for how major energy demands created by rollout of distributed energy resources may be better managed. This is aligned with one of the aims of the Innovation Challenge and the Expert Assessors therefore considered 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

Eligibility Criterion met

The Expert Assessors considered this Project to have clearly identified potential to deliver a net benefit to electricity consumers because it is about integrating flexibility, noting that locally embedded flexibility is critical for the net zero transition and that the Project's approach could help deliver this systemically. Some concerns were raised about the suitability of the outputs for other local regions. However, the Project did offer justification that follow-on regions were engaged as first followers and that the Alpha phase would examine this further to ensure that the outputs have suitability for other areas. This assuaged the assessors' concerns and, overall, the Expert Assessors considered the Eligibility Criteria to have been met.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to involve network innovation because it is because it is examining how to integrate FutureFit, Smart Community Energy System (SCES) and Local Net Zero Coordination (LNZC) to come together to optimise use of the network and deliver Net Zero fairly and efficiently. Linking up these aspects to create digital platform to allow better management of flexibility is considered to involve systems and network innovation beyond business-as-usual, as it was noted that such innovation in such processes is needed to design an approach to residential decarbonisation given network constraints. Overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors considered that the Project does not undermine the development of competitive markets because it proposes to deliver a framework for better local energy management. The assessors considered this approach to not undermine future competitive markets from developing or current competitive markets based on existing legislation and regulation. As a result, the Expert Assessors considered the Eligibility Criteria to have been met.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative, novel and risky because it involves several parallel workstreams (which they considered a risk to potential successful outcomes) and the combination of the workstream outputs have never been demonstrated before. There were some concerns on the tangibility of the innovation, and how outputs have never been demonstrated before, though it was noted that if successful these will result in economic benefit for consumers.

The Project demonstrated that innovative and novel processes are needed to design a residential decarbonisation approach given network constraints and that commercial models are needed to enable the leveraging of flexibility. The assessors therefore considered this to be innovative and novel. Additionally, it was noted that the Project could deliver planning models which help DNOs to reinforce and upgrade infrastructure strategically. The Expert Assessors considered the Project to have the potential to provide the proof of concept needed to support wider rollout of locally based flexibility projects, thereby demonstrating its innovative and novel approach. If successful, they considered it have the potential to help unlock new opportunities to use locally generated energy locally and reduce local grid constraints. As a result, the Expert Assessors considered this Eligibility Criteria to have been met.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered this Project to include participation from a sufficient range of stakeholders for this Eligibility Criteria to be met because a wide range of participants are included who will be regularly involved in the Project's activities. The assessors also noted positively the Project's significant dissemination activities planned which they considered key to raising external awareness of the proposed solution. The wide range of stakeholders and Project Partners across both the private and public sector was noted positively. Overall, the Expert Assessors considered the Eligibility Criteria to have been met.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to be delivering value for money and to be costed competitively because the split across the Project Partners was considered reasonable and day rates were considered appropriately priced

compared to industry norms and for the activities set out. The Project team provided clarification around the original spending in Project LEO, the precursor to the Project, which was noted positively as it provided assurance that the activities set out are not duplicative and provide value for money. The clear articulation of the Project's potential benefits provided further confidence to the Expert Assessors that the Project represented value for money. Overall, the Expert Assessors considered this Eligibility Criteria to have been met.

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.

Eligibility Criterion met

The Expert Assessors considered the Project to have a robust methodology which gives confidence it is capable of progressing in a timely manner because the approach to Project management and governance is clear and well defined. While the Project has several parallel workstreams in the Alpha Phase which need to converge at the end of the Project, the Expert Assessors were satisfied that the delivery methodology could support this approach. Overall, the Expert Assessors considered the Eligibility Criteria to be met.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

It is recommended the Project produce a CBA (looking at a national view) in the Alpha Phase and include a local assessment of benefits to demonstrate difference between place-based and transferable benefits.

6.2.5 10084666, RetroMeter, Initial Net Funding Requested £483,934

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
ELECTRICITY NORTH WEST LIMITED	£60,686.00	£7,282.00	£53,404.00

THE SOCIETY FOR THE REDUCTION OF CARBON LIMITED	£114,090.00	£11,425.00	£102,665.00
ENERGYPRO LIMITED	£105,224.00	£10,522.00	£94,702.00
ENERGY SYSTEMS CATAPULT LIMITED	£247,732.00	£24,774.00	£222,958.00
MANCHESTER CITY COUNCIL	£10,205.00	£-	£10,205.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have met the Eligibility Criteria and to be directly aligned with the Innovation Challenge's aim of developing approaches to integrated planning and connecting of low carbon technologies that reduce overall costs and timescales. They acknowledged the Project's emphasis on retrofitting in diminishing energy demand. The Project, with its focus on the heat demands within structures, prioritizes advanced metering techniques, with the aim of establishing appropriate business strategies. The assessors considered it to have addressed the urgent requirement to accurately measure and, wherever feasible, assign a tangible value to energy efficiency enhancements in the expansive realm of domestic heating. As a result, the Expert Assessors considered 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

Eligibility Criterion met

The Expert Assessors considered the Project to have identified the potential to deliver a net benefit to electricity consumers. The focus of this Project was considered to its emphasis on establishing a sustainable funding model for retrofitting. Such a focus was considered to have the potential to result in reduced heat demands, which could therefore reduce the upfront costs for retrofits and low carbon heat pump systems. The assessors considered this to represent the potential for financial benefits, mainly through the reduction of costs, and therefore considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to involve network innovation. This was primarily considered to be through its focus on addressing key drivers of significant increased investment in networks from the uptake of low carbon technologies by examining approaches to measuring and valuing demand reduction measures which could decrease the need for investment.

While the assessors noted that the Project involves network innovation, it was also noted that the benefits of the Metered Energy Systems approach set out by the Project could be much wider than the Project's current focus. They encouraged the Project to consider this as part of its Alpha Phase activities but did not recommend a Project-specific condition as they considered its planned activities to involve network innovation.

Overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider the Project to undermine the development of competitive markets. They noted positively the Project's strong focus on open source solutions, which gave them confidence that the Project is not undermining the development of competitive markets. The Project's open source focus was considered to support retrofit business models, which could result in further competitive market opportunities through the development of market-based solutions for alternatives to network investment.

One assessor did note that the Funding Party will need to ensure that the Project Partner 'EP Group' did not receive an advantage from their participation in the Project as it progresses. However, they did not consider the Alpha Phase to have the potential to result in any unfair advantages and therefore did not consider the Project to undermine the development of competitive markets. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative and novel, with some elements of risk to it. It was considered innovative because the Project's proposal of developing 'pay by performance' or similar funding models is innovative in the UK energy sector. It was considered novel because it aims to establish an open source standard for metering energy savings for use in energy performance related business models, which they recognised could result in competitive markets being developed. The assessors also noted that the Project has elements of risk to it as its approach goes beyond current approaches, thereby requiring development of new research and development. Overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to have participation from a suitable range of stakeholders for the Alpha Phase activities set out. They noted positively the wide range of stakeholders engagement in the Project and with which they plan on engaging. The assessors considered the Project to have representation from across the energy system, including specialist expertise, commercialisation partners, local community and user representatives. While it was noted that the Project would have been strengthened with greater inclusion by a consumer representative body and other DNOs, they considered the participation set out to be sufficient. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to be providing value for money and to be costed competitively. The potential for widespread benefits, combined with its proposed approach of producing a standardized approach for energy-saving metering that can be universally adopted, were considered to demonstrate value for money. The assessors also considered the Project's overall costs to be appropriate for the complexity of Project, which gave them confidence that it is was overall costed competitively. One assessor noted that the funding for the Project Partner 'ESC' was on the higher end of what was expected, but still considered it to be aligned with industry norms. Overall, the Expert Assessors considered the Project to be costed competitively and to provide 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.

Eligibility Criterion met

The Expert Assessors considered the Project's approach to be well thought through which gave them confidence in its capability to progress in a timely manner. They considered the work packages, timing and costs to be appropriate, with a Project consortium which has relevant skills to the activities set out. The assessors also noted that the Project has developed and clearly articulated the main risks to the Project, with steps to address those identified. Overall, the Expert Assessors considered the Project to give confidence that it will be capable or progressing in a timely manner through its strong Project team and well thought through Project plan. The assessors therefore considered the Project to have met the Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

The Project should focus more on the huge amount of learning that has been undertaken around energy efficiency in the UK context (including on comfort taking and wider barriers to take-up). While it is good to be looking to learn from the US who are ahead here, the housing, climate and market conditions are quite different and I worry that the US learning will not transfer as readily as the team hope - and that without drawing on the wider learning of other projects that have tried to do more in the UK albeit imperfect (including SMETER and SERL) that the project is missing key learnings.

The Project should capture a wide range of building archetypes, and to make the tool as easy to use as possible.

The Project should engage early with British Standards Institute over existing standards and the process for bringing this approach into a PAS as a key stakeholder.

6.2.6 10085218, Resilient and Flexible Railway Multi-Energy Hub Networks
for Integrated Green Mobility - Round 2, Initial Net Funding
Requested £479,851

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
SP TRANSMISSION PLC	£320,525.00	£41,585.00	£320,525.00
NATIONAL GRID ELECTRICITY SYSTEM OPERATOR LIMITED	£13,548.00	£3,387.00	£13,548.00
UNIVERSITY OF LEEDS	£145,778.00	£16,197.00	£145,778.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered this Project to have addressed the Innovation Challenge because it focuses on the decarbonisation of railway operations and supporting the electrification of rail at a potentially lower cost for both rail and electricity consumers. By creating energy hubs across the railway network, the Project enables the use and storage of renewable energy in an increasingly electrified railway system, reducing the reliance on the grid network and the need

for reinforcements. This would allow rail stations equipped with energy hubs to supply energy to other transport modes that interface at these stations, further enhancing its impact on sustainable transportation. This was considered aligned with one of the aims of the Innovation Challenge and therefore the Expert Assessors considered 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

Eligibility Criterion met

The Expert Assessors acknowledged that the Project showed promise in providing a net benefit to electricity consumers through various means, such as reducing renewable energy curtailment costs, avoiding expenses for network reinforcement, and offering additional flexibility resources for the grid. However, they also noted that the overall benefits of the Project needed further examination, as some of the additional benefits were not fully accounted for.

Additionally, the assessors noted that the Project has the potential to bring significant advantages to rail users and local communities by incorporating electric vehicle charging infrastructure and other amenities. Addressing the increasing electricity demand in the railway system and reducing future demand from the rail sector, allows National Grid to concentrate on serving non-rail electricity consumers. Overall, the assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered this Project to involve network innovation because it explores the integration of microgrids, storage, and interaction with local energy demand against the railway use case. Although the Application was considered to lack some clarity in explaining the novelty of single energy hubs'

interaction with the grid, it was evident that this approach connects grid supplies to renewable energy hubs with storage, resulting in minimised demand fluctuations on the grid and yielding operational savings, both financially and in terms of reduced CO2 emissions. One Expert Assessor did note that the Application appeared to be solution driven rather than problem focussed. However, overall, the Expert Assessors considered this Project to have met the Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider this Project to be undermining the development of competitive markets because it takes a "plug and play" approach to technology implementation in which a variety of technology solutions could provide services. However, the long-term commercialisation pathway could have been more clearly presented. It is worth noting that the Project's focus on the rail sector, a significant energy consumer facing decarbonisation challenges and strict government oversight, does not impede the development of competitive markets. In fact, there are various other deregulated market segments where similar energy hub solutions can foster the growth of competitive markets. As a result, the assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative, novel and risky because it incorporates a multi-energy hub approach with microgrids on the rail network, managing interactions between local resources, the existing grid, and the rail's traction load. The innovative element lies not only in the use of microgrids in a rail infrastructure setting, but also in the introduction of a promising new technology configurations that offer potential financial benefits and social amenity.

However, the main risk factor revolves around the reliable operation of the energy hubs at railway stations. This necessitates uninterrupted station operations while meeting the stringent requirements set by Network Rail and within any remaining grid constraints. While they noted that the operational risk primarily rests with Network Rail, who are a subcontractor rather than a Project Partner, they considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered this Project to include participation from a sufficient range of stakeholders for this Eligibility Criteria to be met because it has a well-rounded consortium, involving stakeholders with expertise in electricity network operation, microgrids, and the rail industry.

However, all Expert Assessors agreed that Network Rail should be Project Partner rather than a subcontractor as they will benefit greatly from the outcomes of this Project and there is a level of large operational risk should the project not achieve the outcome expected. The Expert Assessors did note that some stakeholders' roles in the team are could have been more clear and aligned with their skills and experience, particularly the role of University of Leeds who appear central to the commercialisation planning. The assessors noted that the Project would benefit from a clear champion and sponsorship in order to drive delivery of the Project's ambitions.

Overall, however, the assessors noted that the Project team and stakeholder mix were sufficient for the activities set out but also that there was room for improvement in the stakeholder mix and alignment of activities to stakeholders.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion not met

The Expert Assessors did not consider the Project to be delivering value for money and be costed competitively because the Project scope remains unclear despite £650k being allocated to its development to date through a previous SIF Discovery Phase and NIA funded projects.

Additionally, while the consortium partners' split of costs were considered reasonable, the assessors noted that justification of the value for money through a better understanding of their level of input would have strengthened the Application. The day rates are deemed reasonable, although more detail on the plan's resourcing would have been welcome for confirmation. There is a reasonable level of contribution in kind offered from Project Partners, achieving the 10% funding contribution however, there is it unclear the level of financial contribution from Network Rail.

As a result of these concerns, the Expert Assessors did 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.

Eligibility Criterion not met

The Expert Assessors considered the Project's methodology to not be sufficiently robust and to not provide confidence that it will be capable of progressing in a timely manner because there are uncertainties regarding the pathway forward for the Project into the Alpha Phase and beyond.

The focus of the Project seems to have shifted away from its original primary end goal. The Expert Assessors noted that while it was clear the Project had incorporated changes as a result of earlier feedback and identified other potential benefits, including participation in flexibility markets, EV charging etc, the Project approach had lost some of its focus for the Alpha Phase and beyond. While the flexibility market analysis has proven useful to understand the potential benefits for end consumers and the prior experience of the Project team working together

on previous projects is a positive aspect, the Expert Assessors expected a greater understanding and clarity in the Project scope and planning given the amount of funding that has been received by the Project to date.

The Expert Assessors considered the primary benefit of the Project, and its long term investment case, to be firmly related to the benefits which could accrue to Network Rail in its move to electrification (rather than to Port Operators etc, which may follow). As a result of this, the assessors considered the benefits to electricity consumers (other than Network Rail) to be secondary.

The assessors also noted that following the interview there were still questions around the clarity and confidence in understanding roles and responsibilities of the Project team.

As a result, the Expert Assessors did not consider the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

DO NOT FUND

Whilst, all Expert Assessors agreed that they liked the idea of the project, 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 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.

Recommended Project specific conditions

N/A

6.2.7 10085395, Net Zero Community Energy Hubs - Alpha, Initial Net
Funding Requested £480,712

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
SOUTHERN GAS NETWORKS PLC	£8,712.00	£-	£8,712.00
UNIVERSITY OF BIRMINGHAM	£118,750.00	£20,000.00	£98,750.00
NATIONAL GRID ELECTRICITY DISTRIBUTION PLC	£2,337.00	£2,336.00	£1.00
HILDEBRAND TECHNOLOGY LIMITED	£86,180.00	£12,500.00	£73,680.00
MUA ELECTRICITY LIMITED	£5,850.00	£585.00	£5,265.00
VITAL ENERGI SOLUTIONS LIMITED	£292,270.00	£32,270.00	£260,000.00
SGN COMMERCIAL SERVICES LIMITED	£38,116.00	£3,812.00	£34,304.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the Innovation Challenge because it focuses on demonstrating alternative flexible heat network opportunities. The Project is investigating options for a defined site and how these can be modelled and implemented and the overarching goal is create a system that will optimise the availability of decarbonised heat in less densely populated Ares. This is aligned with one of the aims of the Innovation Challenge and the Expert Assessors therefore considered 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

Eligibility Criterion not met

The Expert Assessors did not consider the Project to have met this Eligibility Criteria because it has not clearly identified a potential to deliver a net benefit to consumers. The Project is centred on retrofitting using an approach of double network charging, which would result in a high capital expenditure outlay. The reasoning behind this approach was considered to have been insufficiently justified in the Application, with it being unclear how benefits would materialise for consumers. The assessors also noted that the wider impacts were not fully developed. Additionally, the Project was considered overly complex, raising questions around deliverability and overall likelihood of the net benefits set out. Overall, the assessors considered the aims of the Project to lack focus, and did not consider it to have met the Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered this Project to involve network innovation because of its aim to produce evidence for the viability of electric heat networks in communities in addition to developing the tools to support it. While the Expert Assessors considered the Eligibility Criteria to have been met, there were some considerations as to whether it did demonstrate network innovation because the most innovation lay beyond the network in local control systems and operations. However, the assessors also noted that the Project could result in broader system impacts and some were considered to be on the network, through the potential guiding of infrastructure development and influencing loads. They considered this aspect to demonstrate network innovation. Overall, the Expert Assessors considered this Eligibility Criteria to have been met.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider this Project to be undermining the development of competitive markets because they considered the outputs of the Project to be replicable by other commercial entities, should they prove successful. This approach gave them confidence that the Project is not and would not undermine the development of competitive markets because the replicability of it would potentially stimulate the development of competitive markets. The Expert Assessors also noted that the dissemination of the Project's would enable the solution to be widely available and contribute to competition in the space, should the solution be deployed. Overall, the Expert Assessors consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative and risky because of the technology involved. The focus on larger heat pumps combined with solid state

heat storage to support high capacity heat provisions was considered to be a novel technological approach by the Expert Assessors. The Expert Assessors noted that there were a range of uncertainties and interdependencies within the Project which contributed to the risk element, and these were considered captured in the risk register. Overall, the Expert Assessors considered this Eligibility Criteria to be met.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion not met

The Expert Assessors did not consider the Project to have met the Eligibility Criteria. Firstly, because there were considered to be key stakeholders missing from the consortium for the activities set out. For example, there was insufficient transmission involvement in the Project, and how the system would work in conjunction with the system operator was not adequately explained. Secondly, the assessors noted there was no involvement of consumer representatives. The Expert Assessors considered end user uptake to be critical for the Project, and a lack of consumer engagement was considered an oversight. Instead, they noted that the potential users and their needs were only identified at a high level. They also noted the aims of the project were to at a high level and not fully defined against the Project's consortium. As a result, they considered the Eligibility Criteria to not have been met.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion not met

The Expert Assessors did not consider the Project to be value for money and costed competitively. This is because the level of resource required for the Alpha Phase by some of the Project Partners was not sufficiently justified against the Project planning and was considered to result in higher than anticipated costs. The assessors also noted that the benefits case in its current form did not support a claim of value for money as the assessors did not consider it to be reasonable.

They noted specifically that the evidence provide to support the Project’s cost benefit analysis was lacking. The Project was considered complex in approach, contributing to high resource requirements, and that this approach was not sufficiently justified or evidenced for the Eligibility Criteria to be met.

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.

Eligibility Criterion not met

The Expert Assessors considered the Project's methodology to not be sufficiently robust and to not provide confidence that it would be capable of progressing in a timely manner because of the wide fields of activity that the Project proposed to address in the Alpha Phase. The Expert Assessors considered the Project to lack direction and focus and was considered to being overly ambitious given the multiple different work areas to explore within the six month period. As a result, the Expert Assessors did not consider the Project to have met the Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

DO NOT FUND

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.

Recommended Project specific conditions
N/A

6.2.8 10085396, Carnot Gas Plant - Alpha, Initial Net Funding Requested
£299,360

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
SOUTHERN GAS NETWORKS PLC	£8,712.00	£-	£8,712.00
UNIVERSITY OF BIRMINGHAM	£74,750.00	£15,000.00	£59,750.00
VITAL ENERGI SOLUTIONS LIMITED	£188,165.00	£28,165.00	£160,000.00
NATIONAL GRID ELECTRICITY DISTRIBUTION PLC	£2,337.00	£2,336.00	£1.00
HILDEBRAND TECHNOLOGY LIMITED	£55,130.00	£6,250.00	£48,880.00
NATIONAL GAS TRANSMISSION PLC	£1,110.00	£-	£1,110.00
SGN COMMERCIAL SERVICES LIMITED	£23,229.00	£2,322.00	£20,907.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors were split on whether the Project met this Eligibility Criteria but reached the consensus that it meets the Eligibility Criteria although they noted that the evidence provided could have stronger.

Ultimately, the Expert Assessors considered this Project to have addressed Innovation Challenge because the problem statement is geared towards and provides justification for a cost-effective integration of flexible storage assets alongside heat decarbonisation, which contributes to an efficient energy system design.

Furthermore, the Project is noted for its innovative approach by employing Carnot turbine technology to decrease the necessity for peak demand generation capacity. This technology not only lowers CO2 emissions but also channels waste heat into local heat distribution networks, offering a dual benefit in emissions reduction and heat utilisation.

However, during assessment the core focus appeared to be more on the technical design and demonstration of performance of the turbine. The assessors noted that if the final turbine design was successfully deployed and coupled with heat networks, whilst providing system support services, it would directly address the Innovation Challenge. However, they considered the extent to which this is being worked upon within the proposed Alpha Phase activities to be fairly unclear.

Overall, the Expert Assessors considered the Project 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

Eligibility Criterion met

The Expert Assessors considered the Project's scope to have met this Eligibility Criteria because it could deliver the efficient system integration of novel net zero peaking plant designs, which enhances the overall efficiency of electricity supply. This has potential to provide a net benefit to electricity consumers, as well as heat network customers.

Furthermore, the Project's potential to deliver net benefits extends to both gas and electricity consumers. This is attributed to the reduction in electricity supply costs and the corresponding decrease in gas consumption or costs for heating, facilitated by waste heat recovery and distribution.

However, a concern was raised regarding the potential bias towards lowering individual site owners' gas-operated engine bills, without a clear articulation of the specific advantages of the heat network application compared to alternative methods of thermal storage using inexpensive electricity. The assessors recommend a deeper examination of the heat network's benefits in relation to other available thermal storage options, thereby ensuring a well-rounded evaluation of its consumer benefits.

Overall, however, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion not met

The Expert Assessors do not consider the Project to have met this Eligibility Criteria. There is an overall focus on the plant unit development, with weak incorporation of novel and network-focused innovative approaches to system support through peaking plant load. The assessors noted that the sector coupling

aspects which were discussed during assessment do not necessarily relate directly to the operation of the regulated aspects of the energy networks.

A significant reason that the Project has not met this Eligibility Criteria is on the basis of the Project's primary focus, which appears to be towards individual site applications of on-site generation. Although it was noted that the Project may lead to cost reductions within the network and for network customers, its primary emphasis on site-level generation takes precedence with the vast majority of benefits likely to accumulate with those stakeholders during operation, rather than returned to energy network consumers. The assessors did not consider this approach to involve network innovation and they recommended a need to further delineate the scope and impact of the network innovation component within the overall Project objectives.

Overall, the Expert Assessors did not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors considered the Project to not undermine the development of competitive markets. Instead they considered it to have the potential to foster investment opportunities that could be replicated by others through knowledge dissemination. This potential for wider adoption is implied, even if not explicitly stated.

Similarly, the Project's impact on competitive markets was considered positive, as it aims to provide a specialised solution targeting emissions reductions associated with peak electricity demand within the electricity networks. Additionally, the commercialisation of waste heat transfer into local district heating markets is envisioned, although could be a stronger component of the proposed Alpha activities.

The Expert Assessors did raise the need for the Project to assess potential counterfactual solutions to this approach as part of their cost benefit analysis. For instance, the emergence of commercial thermal storage providers outside within the energy system could potentially influence the landscape, as an example of the need for ongoing monitoring of market dynamics.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative and novel because decoupling of the gas compression process from turbine generation has not yet been commercially realised, and the use of a Carnot cycle certainly represents a novel approach. However, it is less clear that this would be a first of a kind approach to providing net zero peaking capability, whilst also providing customer benefits by coupling for heat decarbonisation purposes.

The Project's classification as innovative is accompanied by an inherent level of risk. This risk emerges from the intended application of Carnot cycle technology to address a new use case. The coupling of waste heat with heat networks has however been more widely explored, and may be a reason for the focus of the Alpha Phase upon the innovative turbine design rather than the system integration benefits.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion not met

The Expert Assessors did not consider the Project to have met this Eligibility Criteria. There were significant concerns raised that the Project does not have support or interest from gas turbine manufacturers and operation companies. There was also a disproportionate representation from the technology providers within the consortium during assessment, with little contribution from the gas

network in the interview and none from an academic partner, which the assessors considered to be critical in design development.

The Expert Assessors did acknowledge that the Project planned dissemination activities that demonstrate a commitment to frequent consultations with pivotal industry organizations. This indicates a proactive approach to engagement and alignment with industry requirements. However, the absence of the aforementioned critical organisations and ownership of deliverables by the full consortium resulted in the Expert Assessors considering the Project to not have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

This Expert Assessors considered the Project to have met this Eligibility Criteria but did note that there was split opinions across assessors on this.

The Project was assessed positively due to its contributions toward energy efficiency and environmental benefits, achieved by the implementation of the Carnot gas plant turbine design. This approach aligns well with the target aims of decarbonisation and system cost reduction perspective, providing confidence that the Project is providing value for money. From a costs for the deliverables of a turbine design the assessors considered the overall costs to be reasonable, thereby resulting in the Project providing value for money and being costed competitively. However, they also noted that the energy network consumer may not realise significant benefits compared to the technology developers and operators.

Furthermore, the Project scope described in the interview did not appear to align with the written proposal with far more emphasis on technical desktop build and little activities relating to sector coupling, heat network and system integration activities.

It was noted that given the scoping and focus of the Alpha Phase activities, the Project is likely to result in a large capital investment for testing of the turbine design, with a disproportionate amount of the benefits accruing outside the energy network consumer, who would likely be making the majority investment.

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.

Eligibility Criterion not met

The Expert Assessors did not consider the Project to have met this Eligibility Criteria. The Expert Assessors questioned whether the full technical design could be successfully delivered within the Alpha Phase, especially if the full scope of work for heat network and system integration were carried out to an extent which would meet the Innovation Challenge.

Despite this, the Project's methodology was considered robust, instilling confidence in its ability to progress within the defined timeline. The Project team displayed good project management practices and accompanying documentation.

The Expert Assessors also raised a concern regarding the benefits case's thoroughness. There did not appear to be a plan to incorporate and develop the full system integration benefits and costs, and the assessment of comparisons against other counterfactual approaches was absent.

Overall, the assessors did not consider the Project to have met this Eligibility Criteria because the assessors did not have confidence the Project would be capable of delivering the full scale of work set out for the Alpha Phase.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

DO NOT FUND

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.

Recommended Project specific conditions

N/A

6.2.9 10085975, Lightspeed, Initial Net Funding Requested £497,928

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
UK POWER NETWORKS (OPERATIONS) LIMITED (SPN)	£80,525.00	£8,053.00	£72,472.00
EV DOT ENERGY LTD	£84,608.00	£8,500.00	£76,108.00
SP MANWEB PLC	£21,500.00	£2,150.00	£19,350.00
Brighton & Hove City Council	£11,098.00	£1,200.00	£9,898.00
OTASKI ENERGY SOLUTIONS LTD	£390,100.00	£70,000.00	£320,100.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the Innovation Challenge as it presents a potential solution geared towards the integration and

management of resources, tackling a salient demand-side barrier in the transport decarbonisation journey. This focus was considered to have the potential to aid in the decarbonisation of a significant portion of the energy system, thereby aligning with one of the key aims of the Innovation Challenge, which is to develop approaches to integrated planning and connecting decarbonised heat and transport demand that reduces overall costs and reduces timescales. As a result, the assessors considered 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

Eligibility Criterion met

The "Lightspeed" Project was considered to have clearly identified a clear potential benefit to electricity consumers. This was considered to be through the reduction of costs, as it proposes direct cost savings to EV owners by minimizing their energy charging expenses, as well as indirect benefits to electricity consumer users. This is achieved by introducing flexibility in the system and curbing the necessity for network reinforcements, which would then result in a reduction of costs for all electricity consumers. By leveraging street lamps for low-cost flexibility services, power system operators stand to gain, which in turn can translate into decreased system costs that benefit end consumers. Additionally, the designed system could make vehicle charging more affordable and convenient. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Project was considered to involve network innovation as it is examining the intricacies of bidirectional charging for a significant chunk of the future EV fleet in GB. This was considered to have the potential to change the current approach to EV charging, as it could assist in managing peak loads effectively and unlocking

flexibility which in turn aids in the efficient handling of network and operational costs. The assessors considered this to involve network innovation beyond business as usual, and noted that the potential for further network innovation through its focus on storage, Demand Side Management (DSM), and Vehicle-to-Grid (V2G) concepts. As a result, the assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider the Project to undermine the development of competitive markets. This was considered to be because the Project has set out its intent to publish all learnings and IPR developed in the Alpha Phase in the public domain, which could lead to the development of additional competitive markets. It was also noted positively that the Project could help with the roll-out of EV charging in a way which does not lock out potential solution providers, thereby providing confidence to the assessors that the Project is not undermining the development of competitive markets. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative, novel and risky. It was considered innovative because, in order for the proposed solution to be developed, there will need to be innovations in the hardware and software used, as well as in the business model which develops. The Project was considered novel because its proposed solution is not one which has been extensively examined in GB. It was considered risky because the Expert Assessors noted that Project will need to address a number of risks on multiple fronts for its progress, such as

technical risks, user experience, and with consumer engagement. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to include participation from a sufficient range of stakeholders for the activities set out. It was noted positively that the Project has participation from across the EV charging value chain, including two network operators, a local authority, chargepoint manufacturer and flexibility market aggregator. The assessors also noted that with the Project's planned dissemination activities, additional interested parties may become involved in the Project. Overall, for the activities set out, the assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Project was considered overall to be providing value for money and to be costed competitively. The Expert Assessors considered the Project to be providing value for money because the overall costs were considered reasonable for the activities set out. It was noted in particular that the costs are reasonable given the level of complexity required for the proposed solution, which could result in benefits for electricity consumers.

The Expert Assessors also noted that the costs set out by the Project Partners were sufficient and aligned with industry norms. However, they also noted that greater financial contribution from the technology developer Project Partner would have strengthened the Application as, should the proposed solution progress to deployment, there could be financial benefits for the developer.

Overall, the Expert Assessors considered the Project to costed competitively and to be delivering value for money given the complexity of the Project's activities. As a result, the 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.

Eligibility Criterion met

The Expert Assessors considered the Project to have a robust methodology which gives confidence that it will be capable of progressing in a timely manner. They noted the Project plan and Gantt chart were clear and well thought through; broken down into logical work packages, with sufficient granularity to track progress. They also noted positively that the Project will be managed by the Funding Party, which gave them confidence in the Project's ability to progress in a timely manner. Finally, they noted that there is clear breakdown of accountability across the Project Partners. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities. The assessors also recognised that the Project has not identified any regulatory or policy barriers which would prevent a route to market for this solution.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

The Project should consider the additional cost of deploying fast, bidirectional chargepoints and supporting infrastructure (e.g. batteries) versus the counterfactual of slow, unidirectional charging. This needs to link to factors such as driver behaviours, e.g. in terms of length of time connected and amount of charge required. There also needs to be more consideration of the business and operating model to commercialise the solution / take it to widescale deployment into BAU.

At this stage it seems more appropriate as a SIF Project to identify the conditions and criteria for locations which would lead to a successful demonstration.

Developing the full technical solution for demonstration seems premature.

Overall, an interesting Project dealing with an issue which is going to become critical very quickly, especially in urban areas where many residents do not have off-street parking and easy access to chargers. The Project also addresses other useful topics such as energy storage, DSM and V2G.

6.2.10 10086034, Indus, Initial Net Funding Requested £496,757

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
UK POWER NETWORKS (OPERATIONS) LIMITED (EPN)	£52,100.00	£5,210.00	£46,890.00
GUIDEHOUSE EUROPE LIMITED	£255,024.00	£25,502.00	£229,522.00
Peterborough City Council	£14,042.00	£1,404.00	£12,638.00
NEW ANGLIA LOCAL ENTERPRISE PARTNERSHIP LIMITED	£16,500.00	£1,650.00	£14,850.00
CADENT GAS LIMITED	£14,472.00	£1,448.00	£13,024.00
M3MAS LIMITED	£40,200.00	£4,020.00	£36,180.00
CAMIRUS LIMITED	£59,615.00	£5,962.00	£53,653.00
AMERESCO LIMITED	£100,000.00	£10,000.00	£90,000.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the Innovation Challenge as it was considered to presents a fresh and collaborative approach to tackle the challenges of industrial heat decarbonisation by providing a novel collaborative toolkit for industrial consumers. This was considered to have the potential to more effectively facilitate, manage and integrate multiple demands and demand-side solutions, which is directly aligned with one aims of the Innovation Challenge, which is to develop approach to integrated planning for decarbonised heat and transport. As a result, the assessors considered 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

Eligibility Criterion met

The Expert Assessors considered the Project to have clearly identified a net potential benefit to electricity consumers, with potential cost savings of £33m by 2050. The primary benefit identified was considered to be a reduction in costs, thereby resulting in a financial benefits, through a reduction in network reinforcement being required and optimised connections for industrial consumers. The assessors also noted potential benefits through a reduction in energy use as well as potential new revenue streams to be generated by the proposed solution. As a result, the assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to involve network innovation because its proposed solution sets out a potential new role for DNOs and DSOs in spearheading industrial heat decarbonisation, coordinating demands to minimise network costs. It was also noted that the Project involve network innovation because, if successful, it could lead to solutions that reduce dispersed network reinforcement by clustering industrial sites as low carbon energy hubs. This potential new role for DNOs and DSO, as well as the potential development of low carbon energy hubs which reduce dispersed network innovation, were considered to demonstrate network innovation above business as usual activities as these are not yet areas which have been extensively examined and could lead to collaborative connection approaches, which do not currently happen to the same extent. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider the Project to undermine the development of competitive markets because the outcomes of the Project were considered to have the potential to facilitate the development of facilitation services for industrial consumers to benefit from commercial net zero hubs. The Project also set out in its Application that it would publish its findings and ensure the IPR generated from the Project does not result in a restrictive environment.

One Expert Assessor noted that the Project would have strengthened had it included greater detail about the interaction with competition in connections for intersections in competition for connections, such as where an Independent Connection Providers (ICPs) might offer private networks for industrial net zero hubs. While greater detail on this would have strengthened the Application the assessors overall considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative, novel and risky. It was considered innovative and novel because it proposes examining an under-investigated aspect of heat-decarbonisation and proposes an innovation solution with its development of a whole system toolkit to tackle this major area of heat demand. The facilitation of shared energy infrastructure that the Project proposes was considered risky and well aligned with the goals of the SIF. As a result, overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Project was considered to have participation from a sufficient range of stakeholders for the activities set out. The assessors not positively the strong set of partners which were considered to be bringing the requisite skills to the Project and the activities set out for the Alpha Phase. They also noted positively the use of an advisory board to test out the proposed solution with relevant stakeholders, and the wide stakeholder engagement through a range of different channels. The Expert Assessors therefore considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to present a compelling value proposition, offering significant work at a competitive cost with the potential for transformative benefits. The proposed solution could result in major cost savings for industrial consumers while also examining the potential economic pitfalls of

maintaining the status quo – notably, escalating reinforcement expenses and potential stranded assets.

The Project's overall costs, predominantly allocated labour costs of subject matter expertise in the Project Partners, was considered to demonstrate value for money while remaining costed competitively. The potential environmental benefits set out by the Project, if realized, could have environmental benefits across GB, which the assessors considered to further demonstrate value for money by the Project.

As a result, the Expert Assessors considered 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.

Eligibility Criterion met

The Expert Assessors considered the Project to have set out a clear and robust methodology through an thorough Project plan which neatly breaks down tasks into well-defined work packages. Furthermore, the designated responsibilities and detailed milestones provided the assessors with confidence in the Project's capability to progress in a timely manner in the Alpha Phase. This confidence was a result of the strong Project consortium and the clearly set out roles and responsibilities within the work packages and Project plan. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

The Expert Assessors considered the Project 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.

Recommended Project specific conditions

The one area that might usefully be expanded is the link with competition in connections and the role of ICPs / IDNOs in thinking about regulatory issues.

6.2.11 10086311, Watt Heat, Initial Net Funding Requested £486,444

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
UK POWER NETWORKS (OPERATIONS) LIMITED (LPN)	£89,485.00	£8,945.00	£80,540.00
BARINGA PARTNERS LLP	£333,450.00	£33,345.00	£300,105.00
PASSIV UK LIMITED	£80,454.00	£8,045.00	£72,409.00
TEPEO LTD	£33,600.00	£3,360.00	£30,240.00
GREATER LONDON AUTHORITY HOLDINGS LIMITED	£3,500.00	£350.00	£3,150.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Project was considered to have addressed the Innovation Challenge as it aligns directly with the aim of the Innovation Challenge, focusing on the decarbonisation of major energy demands, particularly heat. The Project proposes solutions that not only aim to considerably mitigate the associated costs of heat decarbonisation but also bolster the transition towards sustainable energy by removing barriers for the incorporation of heat storage technologies. The Project's emphasis on supporting and accelerating the decarbonisation of heat was considered to have addressed the Innovation Challenge and the Expert Assessors 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

Eligibility Criterion met

The Project was considered to have identified potential to deliver a net benefit to electricity consumers. Through the integration of thermal storage with low-carbon heating systems, the assessors noted that electricity customers could benefit from reduced electricity bills. These direct cost savings, which were estimated to be between £100 - £600 for those utilizing a Time of Use Tariff combined with appropriate heat storage technologies, represent a net benefit to consumers primarily through a financial benefit. Furthermore, the Project was considered to have the potential to enhance network benefits that would subsequently flow to the consumers. The overarching aim of the Project to encourage the adoption of low-carbon heat technologies by delivering DSO system services was considered to further demonstrate potential net benefits for consumers, as it could result in both immediate and future benefits for consumers. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to involve network innovation, as its proposed solution focused on the utilization of thermal storage to better manage and potentially alleviate peak electrical loads stemming from electrified heat. The benefits of such an approach could be monumental for network operation and reinforcement, providing both enhanced visibility and deployment of thermal storage systems. The Project was considered to be go beyond business as usual practices because it proposes a new approach to heat flexibility and its consequential impacts on networks. As a result of this, the Project was considered to likely require a reimagining of current connection processes, accommodating this newfound flexibility. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors considered the Project to not undermine the development of competitive markets. The assessors considered the Project's proposed solution to be wide enough for it to potentially apply to a variety of heat storage solutions and their incorporation into as broader framework of domestic heat decarbonisation. The assessors noted positively the presence of a diverse array of equipment manufacturers and solution providers in this sector, which gave them confidence that competitive markets will not be undermined. They also noted that the Project has the potential to enhance or stimulate new competitive markets focused on heat storage flexibility. The assessors noted positively the Project's commitment to maintaining open-access solutions, ensuring that its findings and the resultant products are readily accessible to all relevant heat technology and flex providers. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative and novel with some elements of risk. It was considered innovative and risky because it is seeking to test out how heat storage technologies can provide potential diversity to the electricity network. The assessors noted that there is little data available currently as to how these technologies can be optimised to provide network services and that the Project's proposed solution will require a deeper understanding of this area. The Project was also considered novel because of the wide range of technologies being considered by the proposed solution as well as the amount of flexibility it could provide. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to include participation from a sufficient range of stakeholders for the activities set out. They noted positively the variety of stakeholders in the Project and their demonstratable experience and skills in the Project's focus area. They also noted positively the inclusion of smaller innovative organisations in the Project consortium, which gave them confidence that the Project will also be able to engage relevant stakeholders throughout the Alpha Phase. While it was noted that greater details on the plans for engagement in the Alpha Phase would have strengthened the Application, the assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to demonstrate value for money and that it is costed competitively. At its core, the Project was considered to demonstrate a strong ensemble of Project Partners who bring a diverse range of expertise necessary for the activities set out. With the Project Partners offering

their services at discounted rates compared to industry norms, the Project's overall costs were considered to demonstrate value for money and that they are costed competitively. This was also considered to be further strengthened when taking into consider the potential benefits set out by the potential solution. Additionally, the Project's focus on harnessing heat storage technologies holds the potential to result in further cost savings for electricity networks and consumers. As a result, 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.

Eligibility Criterion met

The Expert Assessors considered the Project to have a strong and well-structured methodology, which gave them confidence that it would be capable of progressing in a timely manner. They considered the Project to have set out a comprehensive Project plan coupled with a risk register which maps out potential pitfalls and suitable mitigation opportunities. The alignment between different work packages and the integration with the Project Partners gave the assessors confidence that the Project has a well-thought-out strategy which should allow the Project to progress in an efficiency manner. The well-established links between partners and their respective work packages and the clear documentation gave the Expert Assessors confidence in the Project's management. As a result, overall the Expert Assessors considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

The Expert Assessors considered the Project 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.

Recommended Project specific conditions

The Project should give more thought to dissemination given the wider interest in the whole area of heat and flexibility.

Heatsource is a Scottish collaboration focused on enabling low carbon heat in Scotland - it would be good for the project to engage with them regarding zero emissions heating being rolled out. <https://heatsource.org/>

6.2.12 10086418, Park & Flex, Initial Net Funding Requested £467,470

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
UK POWER NETWORKS (OPERATIONS) LIMITED (SPN)	£78,265.00	£7,830.00	£70,435.00
FERMATA ENERGY LLC	£56,950.00	£5,695.00	£51,255.00
UK POWER NETWORKS SERVICES (COMMERCIAL) LIMITED	£37,676.00	£3,768.00	£33,908.00
GREATER LONDON AUTHORITY HOLDINGS LIMITED	£2,500.00	£250.00	£2,250.00
BARINGA PARTNERS LLP	£344,025.00	£34,403.00	£309,622.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project's focus to have addressed the Innovation Challenge. The assessors highlighted the Project's aim to develop business models that manage and integrate demand and flexibility associated with EVs in carparks, which is directly aligned with one of the aims of the Innovation Challenge, which is to integrate energy efficiency together with flexibility to reduce costs of connecting and operating decarbonised heat and transport demands. This approach not only facilitates the deployment of solutions that handle various demands but also brings benefits to network operators, carpark operators, and EV drivers, making it clearly aligned with the objectives of the Innovation Challenge. As a result, the Expert Assessors considered the Project 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

Eligibility Criterion met

The Expert Assessors considered the Project to have identified a clear potential to provide a net benefit to electricity consumers. This potential was considered to be in primary ways. Firstly, directly, by mitigating costs related to owning and operating EVs. This could be achieved by offering cost-saving measures in areas such as parking. Secondly, the Project indirectly adds value by augmenting the amount of flexibility available to network operators, which could result in an additional reduction in the costs required to maintaining the electricity grid and in network reinforcement. Additionally, the assessors noted that by utilising EVs in carparks to provide low-cost flexibility services, there are overarching benefits for power system operators. This, in turn, translates to reduced system costs, ultimately benefiting the end consumers. The users of EVs also stand to gain from this project as there is a potential for value-sharing derived from the services they offer, possibly leading to reductions in parking or charging expenses. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to involve network innovation because it is examining models for making more flexibility available to network operators through the use of EV car parks. While it was noted that the innovation set out by the Project is not a new technology, it is rather the Project's proposed use at a far greater scale than is currently in use where the innovation lies. This greater scale was considered to involve network innovation beyond business as usual which could result in a range of short and medium-term services to the network and operators and which could avoid or delay network investment. As a result, the assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors considered the Project to not be undermining the development of competitive markets. The Expert Assessors had confidence in this because of the Project's commitment to transparency and inclusivity, as evidenced by its intention to make any developed propositions and business models accessible to all participants in the market. This decision by the Project was considered to align well with the standard Intellectual Property (IP) provisions laid out in the SIF Governance document and gave the assessors confidence that competitive markets would not be undermined. Moreover, the introduction of a novel, scalable flexibility service not only enhances the market landscape but also injects an element of competitiveness, where new competitive markets could be developed. The intrinsic design of the solution is highly distributed, and the accruing benefits are dispersed across a variety of stakeholders, such as the EV owner, car park operator, charging system operator, and the network operator. This widespread distribution ensures that no single entity has undue advantage. As

a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to involve innovation, novelty, and inherent risks. One standout aspect of this project is its aim to develop commercial and business models tailored to EV charging within carpark settings. By nature, these models were considered to be innovative but also with commercial and market risks due to the prevailing uncertainty about the projected returns and the overall appeal of these innovative models. A heightened sense of risk arises from the unclear perceptions and potential reservations of EV owners regarding the adoption of Vehicle-to-Grid (V2G) charging frameworks, issues that the Project articulate it will aim to address.

However, a distinguishing feature of the Project is its comprehensive approach. While certain components or ideas might currently exist in some fragmented capacity, a comprehensive solution that integrates these elements, especially on the commercial front, and at the scale proposed, is absent from the landscape. This gap and the Project's proposed solution to bridge it was considered to involve novelty. As a result, overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Project, as reviewed by the Expert Assessors, was considered to include participation from a sufficient range of stakeholders for the activities set out in the Alpha Phase. The assessors noted positively the collaborative nature of the Project, as it includes various partners that span almost the entirety of the carpark charging solution spectrum. The Expert Assessors also noted positively the

Project's stakeholder engagement plan for incorporating any additional stakeholders and perspectives depending on the solutions development. The assessors also viewed positively the engagement with the industry association for car parks, the Greater London Authority and airports, which could result in a more implementable solution. As a result the Expert Assessors considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Project was considered to be providing value for money and to be costed competitively overall. The Expert Assessors considered it to be providing value for money because it is addressing what was considered to be a significant problem with high potential for payback. While the costs were considered to be on the higher end of what was expected, it was noted positively that these were largely derived from an open competitive procurement process. This gave the assessors confidence that the Project was costed competitively. Furthermore, the assessors noted that the overall costs, while slightly higher than anticipated, were appropriate for the activities set out. As a result, the 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.

Eligibility Criterion met

The Expert Assessors considered the Project to have a robust methodology and clearly thought through Project plan. A primary strength was considered to be the Project's well-structured approach, with well-thought-out packages with sufficient levels of detail. This appropriate level of detail was considered to support the Project so that progress can be effectively monitored and steered in the right direction, minimizing potential delays or deviations from the project's main objectives. It was also noted that this level of detail will also support a better

examination of the interdependencies between the work packages and risks identified. This delineation of tasks was considered to be further complemented by the decision to adopt well-established project management practices throughout the Project's lifecycle, which gave the assessors confidence that it will be capable of progressing in a timely manner.

Overall, the Expert Assessors considered the Project to have laid down a strong foundation in terms of its planning and methodology and the Expert Assessors considered the Project to have met the Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

The Expert Assessors considered the Project 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.

Recommended Project specific conditions

The Project should be re-scoped to reconsider what criteria need to be met to make a Beta Phase viable. The technical solutions are not currently important since these will progress over time. The valuable aspect of this Project is to define the commercial arrangements and business model so that they can be tested at the appropriate time.

Overall this is an interesting Project and one which can fit well with UK travel patterns where the long, medium and short stay solutions have been identified. One recommendation is to clarify the extent to which EV OEMs would need to be engaged for this to be a large scale solution.

6.2.13 10086429, Heat Risers, Initial Net Funding Requested £489,735

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
UK POWER NETWORKS (OPERATIONS) LIMITED (LPN)	£82,105.00	£8,211.00	£73,894.00
DG CITIES LIMITED	£50,050.00	£5,050.00	£45,000.00
ROYAL BOROUGH OF GREENWICH	£17,750.00	£1,775.00	£15,975.00
PASSIV UK LIMITED	£24,486.00	£2,449.00	£22,037.00
BARINGA PARTNERS LLP	£369,810.00	£36,981.00	£332,829.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have met the Innovation Challenge as it focuses on a significant barrier of heating decarbonisation in a large portion

of the UK's buildings. The Project was considered to be particularly challenging due to the necessity for coordination across several stakeholders and innovation. Importantly, the project doesn't just address the technical aspect of energy decarbonisation but also the importance of a just and equitable transition, which are directly aligned with the Innovation Challenge's aims. The specific emphasis on the challenge of transitioning multi-occupancy buildings currently reliant on distributed gas heating systems was considered to be aligned with the aim of demonstrating coordination with local energy planning activities that reduces costs and improves consumer experience for decarbonisation. As a result, the assessors considered 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

Eligibility Criterion met

The Expert Assessors considered the Project to have identified a potential to deliver a net benefit to electricity and gas consumers. This was considered to be because the Project could speed up the implementation of decarbonised heating solutions, especially in targeted segments. Such acceleration and the transition to low carbon heating was considered to have a potential benefit for consumers through carbon emission reductions and financial savings for consumers involved. While it was noted that a significant portion of these advantages seem to directly favour the impacted customers, they also recognised that there is an overarching aim of assisting those on distributed gas systems who might otherwise be left behind. This was considered to align with the aims of the Innovation Challenge and meet the Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Project was considered to involve network innovation, particularly in addressing the challenges tied to upgrading shared network infrastructure within

buildings housing multiple occupants. The Project's proposed solution touches on areas which otherwise might have had blurred boundaries concerning responsibility amongst various stakeholders. These areas carry significant implications for costs related to reinforcement and operation of the broader network, and the Project's focus was therefore considered to involve network innovation in defining these roles while undertaking the Project. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Project was considered to not undermine the development of competitive markets. The was considered by the Expert Assessors to be a result of the Project's commitment to making any developed intellectual property freely available, ensuring transparency and adhering to stipulations laid out in the SIF Governance document. Additionally, any solutions derived by the Project Partners will be introduced through competitive markets, ensuring a fair playing field. The Expert Assessors did not identify any conflicts or issues in this domain, and the assessors recommended the Project team disseminate their learnings widely. Overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Project was considered to be both innovative and risky. Its focus on an intricate domain characterized by unclear responsibilities also underscored its novelty. The Project's proposed solution could result in innovations in several areas, notably in coordination mechanisms and funding structures, due to the Project's unique approach. Its exploration into previously unexamined territories and the intricate web of stakeholders further heightens the associated risks and

demonstrates the Project's innovative and novel approach. As a result, the Expert Assessors considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Project was considered to have participation from a sufficient range of stakeholders for the activities set out. The Expert Assessors noted a broad spectrum of stakeholders, which they considered helpful with ensuring a comprehensive representation from the entire "supply chain" associated with proposed solution. This includes network operators, heating system specialists, and parties directly liaising with households and property owners, ensuring diverse perspectives and comprehensive solutions. While the Expert Assessors considered the Project to have met this Eligibility Criteria, they did not that the Application could have been strengthened with greater participation from GDNs to further bolster the project's comprehensive approach. However, overall the assessors considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Project was considered to be competitively costed and to be delivering value for money. A significant portion of the costs, especially those associated with the largest partner Baringa, are rooted in rates set via open procurement, which have then been discounted for Project. This open procurement ensures transparency and gives the Expert Assessors confidence that the Project is costed competitively.

Additionally, the costs associated with other partners are based on relatively lower day rates, further demonstrating competitive costing. The assessors also noted that the Project's total costs align well with the intricacy of the challenge being

tackled and the potential benefits that could arise from its solutions, which they considered to demonstrate that the Project is delivering value for money.

As a result, the 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.

Eligibility Criterion met

The Project as considered by the Expert Assessors to have set out a methodical approach to its proposed solution which gives them confidence that the Project will be capable of progressing in a timely manner. The assessors considered the project plan to be detailed, complemented by a Gantt chart and a comprehensive risk assessment. The Project articulated that project management practices will be applied throughout the Project's lifecycle, further bolstering its chances of timely completion. While the assessors noted that the greater details on the exact methodology which will be followed beyond further examination of proposed solution would have strengthened the Application, they considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities. The assessors did note positively that the Project has identified several regulatory enablers which could help accelerate the delivery of the Project and for which there are work packages allocated to during the Alpha Phase.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

The Application would be stronger with clearer definition of the potential solutions it will explore, and with more thought about routes to bring these to market. This Alpha Phase should ensure it addresses these issues.

The Project should consider a stronger commitment to engage with GDNs during the Alpha Phase given the challenges they face themselves with multi-occupancy buildings (in terms of BAU maintenance issues as well as longer term).

Understanding differences across DNO areas is also important at this stage.

More clarity is needed on the aims underpinning this on technical solutions. It would appear that the focus is on enabling heat pumps but other solutions exist. It is recommended to bring in building decarbonisation specialists into the project asap.

6.2.14 10086459, Full Circle, Initial Net Funding Requested £416,811

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
UK POWER NETWORKS (OPERATIONS) LIMITED (LPN)	£73,350.00	£9,597.00	£63,753.00
ATELIER TEN (SCOTLAND) LIMITED	£30,104.00	£3,009.00	£27,095.00
SGN COMMERCIAL SERVICES LIMITED	£99,772.00	£17,550.00	£82,222.00
OVE ARUP & PARTNERS LIMITED	£263,973.00	£20,232.00	£243,741.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Project was considered to have addressed the Innovation Challenge by focusing on a unique and innovative approach of capturing waste heat from

distribution transformers. This waste heat recovery system was considered to have the potential to make efficient use of an otherwise overlooked energy source while providing benefits to consumers. Furthermore, the potential of an extended lifetime of transformers was considered an added bonus. This was considered to be directly aligned with one of the Innovation Challenge's aims, which is to demonstrate coordination between energy efficiency and local energy planning activities to reduce costs and improve consumer experience for decarbonisation.

Eligibility Criterion 2:

Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers

Eligibility Criterion met

The Project was considered to have identified a potential net benefit through its potential to bring tangible benefits for gas and electricity consumers. Central to this potential is the use of waste heat recovery and distribution, which holds promise to provide heating at reduced costs. The Project was considered to have the potential to translate this into savings in the form of decreased costs of delivered heat and possible reductions in Distribution Use of System charges, leveraging increased transformer efficiency. While the assessors considered the Project to have the Eligibility Criteria, they noted that the net benefit presented in the current model could have been more clearly set out in practice. Overall however, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Project was considered to involve network innovation because of its focus on innovative methods for the energy networks. Specifically, the assessors noted that the Project delves into the potential of harnessing the waste heat produced by distribution transformers. The process not only aims to redirect this heat into local heat networks, enhancing their efficiency, but also envisions accruing economic

benefits. By doing so, the project suggests that DNOs can derive revenue, and the life of the transformers might be prolonged due to decreased operating temperatures. The connection between District Heating Networks (DHNs) and electricity distribution networks serves as the backdrop for the project, bringing forth opportunities to optimize both entities' performance. This holistic perspective was considered to demonstrate network innovation beyond business as usual as it is examining a proposed solution with a combination of DHNs and DNOs which has not yet been extensively examined in GB. As a result, the assessors considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Project was considered not be undermining the development of competitive markets. The Expert Assessors noted that the Project exhibits a clear trajectory towards augmenting the efficiency of existing network systems without impinging on the growth of competitive markets. The emphasis here is not on developing new technology, but rather on optimizing what's already in motion. While there's recognition that there are emerging external district heat solutions leveraging different technologies, the assessors did not consider the Project to overshadow or stifle their commercial prospects. The assessors also noted that such schemes might even end up becoming consumers of the waste heat generated from this project, thereby resulting in new competitive markets. As a result, the Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Project was considered to be primarily innovative and novel in its focus on repurposing transformer losses, tapping into the waste heat and subsequently utilizing it in local district heating schemes. It was considered a simple but

innovative and novel approach as transformers wouldn't need alterations for the proposed solution to work and the longevity of the transformers might be extended owing to the decreased operating temperatures. While the initiative is commendably innovative for GB, the assessors did note that similar projects exist internationally. It was also noted that the focus in GB could result in new approaches by DNOs and ESCOs and where the two work together.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Project was considered to have active and diverse engagement with a sufficient range of stakeholders involved throughout the Alpha Phase. It was noted that the engagement spans across well-planned dissemination events which are geared to resonate with a broad audience – from local governing bodies to property magnates. The stakeholder mix was noted positively, as it encapsulates the expertise of local authorities and district heat network operators, and includes participants with the right skills and know-how for a project of this magnitude and importance. As a result, the assessors considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to present a compelling value proposition, as evidenced by the juxtaposition of its funding demands against the prospective revenue streams and heightened longevity of transformers. They considered the costs and the overall potential benefits to represent value for money by the Project. The Expert Assessors also considered the costs of the Project Partners to be appropriate for the activities and to be aligned with industry norms. As a result, the assessors considered 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.

Eligibility Criterion met

The Project was considered to demonstrate a well thought through and detailed planning, demonstrated throughout the Application and notably in the Gantt chart. This precision gives confidence to the assessors in the Project's capability to progress in a timely manner throughout the Alpha Phase. Building on the foundations of the Discovery Phase, the methodology was considered clear and thorough, boasting well-structured work package sequences and defined accountabilities. As a result, overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase**NO**

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities. The assessors noted that the Project had identified that local planning policies and building regulations could potentially impact the delivery of the Project beyond the Alpha Phase but noted that the Project had plans to further examine this area as part of the Alpha Phase.

Recommendation to the Gas & Electricity Markets Authority**FUND**

The Expert Assessors considered the Project 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.

Recommended Project specific conditions

It would be good to understand how similar schemes in EU countries and CH operate and what can be learnt from them.

Recommendations are to not make this a site specific assessment but broaden it and look at the risks associated with network upgrades and asset replacement.

6.2.15 10086460, Heatropolis, Initial Net Funding Requested £483,374

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
UK POWER NETWORKS (OPERATIONS) LIMITED (LPN)	£49,800.00	£4,980.00	£44,820.00
METROPOLITAN INFRASTRUCTURE LIMITED	£142,200.00	£14,220.00	£127,980.00
PASSIV UK LIMITED	£345,089.00	£34,515.00	£310,574.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the Innovation Challenge because it has the potential to highlight reduced emissions from significant infrastructure developments in heat networks. Notably, the Project's design centres around the infrastructure venture at Kings Cross, where it plans to model and trial various solutions, spanning from technical to commercial

innovations. The Project's central focus is its intent to circumvent barriers to decarbonising district heat networks without inducing a substantial spike in the peak electrical load on the overarching network. This focus was considered to be directly aligned with the aims of the Innovation Challenge, which is to demonstrate coordination between flexibility and planning activities that reduce costs and improve consumer experience for decarbonisation. As a result, the assessors considered the Project 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

Eligibility Criterion met

The Project was considered to have demonstrated a clear potential net benefit to electricity consumers. Its focus lies predominantly in managing network loads in areas where constraints are prevalent, achieved through the pioneering control of the heat network. This approach promises notable advantages to the consumer, particularly when juxtaposed against the reinforcement costs currently projected by network stakeholders and could result in cost savings for consumers. Moreover, the carbon emission reduction, in addition to several other benefits, were identified by the Project with its proposed solution and the assessors noted the estimated £35m of savings by 2050. Such savings would be redirected to electricity consumers in the form of diminished standing charges. As a result, the assessors considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Project was considered to involve network innovation. Its core focus revolves around the development of a heat network with the electricity network, specifically situated at a major infrastructure location. The overarching aspiration is the development of an approach which is replicable for future infrastructure projects, actively aiding networks in proficiently managing load without leaning

heavily on infrastructural expansion. The Project's network innovation was also noted to be in its emphasis on flexibility and replicability, ensuring its applicability across diverse electricity networks. Furthermore, the Assessors noted that the Project ventures into the relatively unexamined area of using machine learning to even out peak electrical loads stemming from decarbonized district heating networks. This unique application of machine learning, aimed at enhancing demand response, combined with its approach of developing heat networks alongside electricity networks in a way which is replicable was considered to demonstrate network innovation beyond business as usual. As a result, the assessors considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider the Project to undermine the development of competitive markets. The Project's approach includes outputs focused on formulating commercial arrangements that are not only beneficial but are also poised to stimulate and elevate the competitive landscape. To achieve a broader impact, the Project emphasizes the wide dissemination of these innovative arrangements, which the assessors considered to give them confidence that the competitive markets are not being undermined. It was also noted that there are currently no DSO services available to promote adoption by district heat network operators of smart optimisation which could lead to significant unnecessary network reinforcement, but that the Project's focus could help develop new offerings focused on these offerings. As such, the assessors considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative, novel and risky. It was considered innovative and novel because it proposes a new approach to achieve the technical and commercial solutions necessary for there to be a business case for heat networks. The system integration proposed by the Project was also considered innovative. The Project was also considered risky because there was considered to be currently a low level of understanding of the potential impacts of decarbonised district heating networks on the electricity networks, and this Project could help develop this further. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Project was considered to have participation from a suitable range of stakeholders for the activities set out. At its core, the Project team comprise an electricity network well-versed in local and national dynamics, assets, and system design; a heat network optimization company with previous innovative solutions; and a heat system installer with an in-depth understanding of present and prospective developments in heat networks. Complementing this core are subcontractors aligned with the project's distinct needs. The Expert Assessors considered this to be sufficient for the activities set and also noted positively the engagement activities planned with the Camden Borough Council. As a result, the assessors considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to demonstrate value for money and to be costed competitively, grounded in a transparent and detailed breakdown of costs and a well-conceived Project plan. The assessors considered the costs to be justified against capability and market value, which gave the assessors confidence

that it is costed competitively. They also noted that the cost are appropriate for the activities set out, with the contributions by the Project team demonstrating additional value for money. Overall, the Project was considered 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.

Eligibility Criterion met

The Project was considered to have a robust methodology which gave confidence to the assessors that it will be capable of progressing in a timely manner. The assessors noted positively the strong Project team and well thought through Project plan and methodology, underpinned by a robust project management framework with comprehensive controls in place. Notably, the active involvement of the infrastructure site and the endorsement from Camden Council provided further assurance to the assessors that the Project will be capable of progressing in a timely manner.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

The assessors did note that the Project had identified some potential barriers which may impact the Project beyond the Alpha Phase. The assessors did note that the Project plans on further exploring these potential barriers as part of the Alpha Phase and will share any developments from the Project with relevant stakeholders, including Ofgem, to support mitigation strategies for any barriers identified.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

The only area where the Project requires more effort is in the dissemination plan where engagement with a wider range of stakeholder to include the academic research base, policy makers, NGOs and city planners would bring benefit.

6.2.16 10087236, Tyseley Environmental Enterprise District (TEED) Alpha Phase, Initial Net Funding Requested £473,333

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
UNIVERSITY OF BIRMINGHAM	£112,214.00	£24,063.00	£88,151.00
SSE UTILITIES SOLUTIONS LTD	£72,977.00	£7,298.00	£65,679.00
NATIONAL GRID ELECTRICITY SYSTEM OPERATOR LIMITED	£10,364.00	£2,072.00	£8,292.00
NATIONAL GRID ELECTRICITY DISTRIBUTION (SOUTH WEST) PLC	£44,403.00	£4,441.00	£39,962.00
SMART GRID CONSULTANCY LIMITED	£140,470.00	£50,540.00	£89,930.00
PINNACLE POWER LIMITED	£93,903.00	£18,784.00	£75,119.00
TYSELEY ENERGY PARK LIMITED	£50,895.00	£5,895.00	£45,000.00
EQUANS SERVICES LIMITED	£68,000.00	£6,800.00	£61,200.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion not met

The Expert Assessors considered the Project to not have addressed the Innovation Challenge. There was consensus across the assessors that, while the general aims to address the decarbonisation of existing gas particular commercial users was consistent with the sentiment of the challenge, there was a lack of clarity with the delivery aims for Alpha Phase of the Project. The Expert Assessors therefore did not consider the Project to have addressed the Innovation Challenge because there were a range of uncertainties, including the energy supply demand profiles for Tyseley Energy Park and the transferability of the outputs for flexibility. Overall, the Expert Assessors 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

Eligibility Criterion not met

The Project was considered not to have met this Eligibility Criteria because it has not clearly identified a potential to deliver a clear benefit to gas or electricity consumers. The Expert Assessors considered the benefits to consumers to be unclear in the Application and had not been sufficiently quantified for them to have confidence in the potential to deliver a net benefit to consumers.

The assessors also noted that the Project's proposal of transitioning gas consumers from their existing heating solution may be difficult to justify due to unclear differences of technology and the assessors did not consider the Project to have sufficiently addressed why consumers would go through the hassle of

changing their heating solutions. Overall, the Expert Assessors did not consider the Project to meet the Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion not met

The Expert Assessors did not consider this Project to involve network innovation because the assessors considered there to be limited innovative elements in the proposal. They noted that it was unclear to what extent the capture of sub-daily demand and supply information involves network innovation beyond business-as-usual.

Whilst they noted the Project applies a whole systems approach to heat decarbonisation and a creative use of an unutilised site, they noted that the details around the actual innovation were unclear. They also noted that while there was intent to use National Grid's flexibility market to support the commercial case of the Project, further clarification around this point particularly in relation to regulatory considerations would have enhanced the answer.

The Expert Assessors therefore did not consider this Eligibility Criteria to be met.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider this Project to undermine competitive markets because at this stage in the Project is considered an information gathering exercise and there may be opportunities to create new services. Specifically, the assessors noted that there is no existing commercial market for the services in the proposed solution, which could result in the development of competitive markets. They also did not consider the proposed solution to undermine the development of competitive markets.

Overall, the Expert Assessors considered this Eligibility Criteria to be met.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion not met

The Expert Assessors did not consider the Project to be innovative and or risky. This is because the Project does not clearly articulate where the innovation lies. The Expert Assessors considered the Project to not go beyond a standard approach to industrial and commercial process, sizing and potential flexibility.

The Expert Assessors noted that there was commercial risk within the Project, however they considered the Application to fall short of being an innovative or novel solution to decarbonising industrial clusters.

Overall, the Expert Assessors considered the Project did not meet the Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion not met

Overall, the Expert Assessors considered the Project to not include participation from a sufficient range of stakeholders, highlighting the absence of key stakeholders from the consortium. For example, the Heat Recovery Unit was not involved as a Project Partner, and there had not been engagement with load centre from an early stage, which the assessors considered to indicate limited buy-in from these key entities.

The Expert Assessors also considered there to be a lack of meaningful engagement with Project Partners on the Project, such as Birmingham University, in addition to the Project's vague plans for community engagement. At interview aspect of assessment, there was a disproportionate level of engagement by the Project Partners on the call with some Project Partners contributing little or nothing to the

discussion. This did not provide the assessors with confidence that there was buy-in or meaningful engagement from the Project Partners.

Overall, the Expert Assessors considered that the Project to not have met the Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion not met

The Expert Assessors considered the Project to not have met this Eligibility Criteria. The Expert Assessors did not have concerns with Project Partner contributions and found day rates for the work to be reasonable. However, due to the lack of clear benefits for the consumer, the assessors did not consider the overall costs to be sufficiently clear for them to have confidence that the costs were reasonable and providing value for money. Additionally, the Expert Assessors raised concerns on whether the Project's proposed activities would deliver value for money being funded by consumers.

Due to these reasons, the Expert Assessors did 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.

Eligibility Criterion not met

The Expert Assessors considered the Project's methodology to not provide confidence that it would be capable of progressing in a timely manner because both the scope and the methodology of the Project were considered unclear. The Project clearly articulates its milestones, which was noted positively, however the Expert Assessors also raised concerns around the ambition of the Project to deliver 9 reports in a 6 month period and whether it would be feasible to deliver these to a

high standard in the time allocated. Overall, the Expert Assessors considered that the Project to not have meet this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

The Project has identified several areas where existing regulatory boundaries, licence conditions and market structure may represent limits to the Project progressing beyond the Alpha Phase. The Project has included work packages which will further investigate these potential barriers and any potential derogations and/or exemptions required. However, for the Alpha Phase, no regulatory barriers were identified which impact the planned activities.

Recommendation to the Gas & Electricity Markets Authority

DO NOT FUND

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.

Recommended Project specific conditions

N/A

7.1 SIF Round 2 Alpha Phase – Preparing for a net zero power system -

Summary

This section covers the assessment by the Expert Assessors of round 2 Alpha Phase Applications received into the 'Preparing for a net zero power system' Innovation Challenge.

For the Alpha Phase, 6 Applications were submitted to Innovate UK through the Innovation Funding Service (IFS) portal by the closing deadline of 11am 5 July 2023 and are listed below.

Project reference number	Project name	Funding licensee	Total Project costs (£)	Total Project contribution (£)	Total SIF Funding requested (£)	Recommended for funding (Yes/No)
10080246	Artificial Forecasting	NORTHERN POWERGRID (NORTHEAST) LIMITED	£522,445.00	£54,607.00	£467,838.00	Yes
10080276	Flexible Queue Management (Alpha)	NORTHERN POWERGRID (NORTHEAST) LIMITED	£302,022.00	£56,606.00	£245,416.00	Yes

10085756	Shifting Currents	NATIONAL GRID ELECTRICITY DISTRIBUTION PLC	£482,150.00	£157,224.00	£324,926.00	No
10078792	Powering Wales Renewably	NATIONAL GRID ELECTRICITY SYSTEM OPERATOR LIMITED	£777,909.00	£278,733.00	£499,176.00	Yes
10079461	HyNTS Waste Heat Recovery for Electrolysis	NATIONAL GAS TRANSMISSION PLC	£429,703.00	£42,971.00	£386,732.00	Yes

10079465	HyNTS Hybrid Storage	NATIONAL GAS TRANSMISSION PLC	£418,949.00	£43,580.00	£375,369.00	No
10079053	INSIGHT	SCOTTISH HYDRO ELECTRIC TRANSMISSION PLC	£252,553.00	£25,460.00	£227,093.00	Yes

7.2 Evaluation of Applications

7.2.1 10080246, Artificial Forecasting, Initial Net Funding Requested

£467,838

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
NORTHERN POWERGRID (NORTHEAST) LIMITED	£38,220.00	£3,822.00	£34,398.00
EV DOT ENERGY LTD	£20,000.00	£2,000.00	£18,000.00
OAKTREE POWER LIMITED	£15,000.00	£1,500.00	£13,500.00
FACULTY SCIENCE LIMITED	£449,225.00	£47,285.00	£401,940.00

Submitted Project description

As 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered this Project to have addressed the Innovation Challenge because it focuses on preparing for a net-zero emissions power system by improving our understanding of load profiles, particularly at the low voltage level in different network areas. In the short term, it aims to better forecast loads for the DNOs. Ultimately, this solution has the potential to boost the efficiency of operations, easing the path to providing a Net Zero energy service. This is aligned with one of the aims of the Innovation Challenge and the assessors therefore considered 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

Eligibility Criterion met

The Expert Assessors considered this Project to have clearly identified potential to deliver a net benefit to electricity consumers because it explores enhanced load flow modelling which enables network companies to improve the resilience of the network. This focus was considered to involve primarily cost reductions for consumers as networks pass on operational savings. As a result, the Expert Assessors consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered this Project to involve network innovation because is exploring advanced forecasting and data utilisation for precise load estimation, which will potentially provide a step-change improvement beyond existing approaches used to forecast loads, particularly at a granular level.

The Application supplied a comprehensive roadmap detailing how the innovation will be executed which was noted favourably. However, the Expert Assessors noted that it would be beneficial for the Project team to demonstrate how the proposed solution and outputs in the Application substantially improve existing

business as usual solutions as the Project progresses through the Alpha Phase. The assessors noted specifically that they would also like to see how the proposal could benefit existing processes for triaging and accessing low voltage data within the distribution networks. The assessors recommended a Project-specific condition be included for the Project to provide this information.

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

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider this Project to be undermining the development of competitive markets and instead considered the Project to have the potential to strengthen competitive markets by facilitating accurate evaluation and trading of flexibility services for network operators and participants. A potential link to market dynamics lies in the possibility of other software providers creating similar products, thereby resulting in the development of competitive markets. This should be considered in development of the Project, with an importance on creation of APIs and/or whitepapers explaining methodologies. The Expert Assessors consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative, novel and risky because it attempts to aggregate diverse data sources to optimise network operations. However, there's a viewpoint that the classification as innovative, novel, or risky could be strengthened.

This is in part because this function is a core part of network operations which should be consistently making incremental improvements. Whilst integrating AI

into forecasting is increasingly becoming a common practice globally, this work introduces innovation by applying advanced forecasting in the context of DNOs and novel flexibility markets. The Project's classification as innovative could be reinforced if the Funding Party increased its financial contribution to cover some of the more business as usual aspects. However, the assessors also noted that this is expected to be explored during the Alpha Phase should the Project be successful.

Overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project Partners to be sufficient for the Project because it encompasses key participants and represents a comprehensive range of stakeholders, including customers and some engagement with other DNOs. Furthermore, a suitable set of stakeholders was referenced to be engaged with during Alpha Phase. The Expert Assessors therefore considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to be delivering value for money and be costed competitively because there was considered to be substantial value for the network users. It was noted that the cost rates were towards the high level of market expectations, particularly those focused on algorithm de-risking. However, there was recognition that this is also driven by the demand of these specialist skill types. The costs overall were also considered reasonable, thereby providing confidence that the Project is costed competitively and is providing value for money.

The Expert Assessors also encouraged additional dissemination activities be included and absorbed into the Project costs to demonstrate how the Project will add value to current processes regarding LV data triaging and accessibility. The Expert Assessors encouraged the Project to drive towards best cost efficiencies should the Project be successful. However, overall, the Expert Assessors considered 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.

Eligibility Criterion met

The Expert Assessors considered the Project to have a robust methodology which gives confidence to the Expert Assessors that it will be capable of progressing in a timely manner because the Project plan effectively outlines the execution of work packages, and provides a well-structured path to attain milestones.

It was noted there are some minor gaps, particularly in addressing data requirements and business process integration risks. It details tasks, responsibilities, and timelines for each package, establishing a roadmap with dependencies. The Project team should take serious account of these risks at the earliest stage of the Project (such as data availability) and build on their mitigating actions.

The assessors also noted that the interview could have been enhanced by including more technical representation to provide full confidence of technical data abilities and understanding of the energy system from the technology developer. However, overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

The Project should explain in greater detail the data triage approach and what data results will be made available by the Project. It should also consider a dissemination activity relating to how they will demonstrate an improvement to the processes around access and triaging to LV data which is a challenge for EDNOs currently.

7.2.2 10080276, Flexible Queue Management (Alpha), Initial Net Funding Requested £245,416

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
NORTHERN POWERGRID (YORKSHIRE) LIMITED	£21,800.00	£21,799.00	£1.00
NATIONAL GRID ELECTRICITY SYSTEM OPERATOR LIMITED	£16,707.00	£3,341.00	£13,366.00
WSP UK LIMITED	£249,514.00	£17,466.00	£232,048.00
ENERGY OPTIMISATION SOLUTIONS LIMITED	£14,001.00	£14,000.00	£1.00

Submitted 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 upmost 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?

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the Innovation Challenge because it is focused on expediting and optimising the connection of low carbon technologies to the network, potentially reducing consumer costs and wait times for new supplies. This was considered to be directly aligned to the Innovation Challenge’s aim of supporting the integration of novel assets and their market accessibility to help increase the pool of resources providing system stability services ahead of 2035. By exploring innovative approaches to optimize queue management, the project not only aims to improve network management but also contributes towards Net Zero through better connection of low carbon technologies to the network. The Expert Assessors therefore considered 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

Eligibility Criterion met

The Expert Assessors considered the Project to have identified a potential to deliver a net benefit to electricity consumers, including both small consumers and larger users or consumers. By facilitating faster connections of low carbon technologies (LCT), the Project proposes an approach which expedites the realization of carbon benefits and reduces costs for consumers. The likelihood of faster renewable electricity source connections without extensive reinforcement work not only presents economic advantages to electricity consumers but also offers environmental benefits by having more low carbon technologies connected to the grid. It was noted that this could directly benefit larger consumers awaiting connection and average domestic consumers.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to offer a new and novel approach to the connections process at Grid Supply Points (GSPs), an area which the Expert

Assessors recognised as being prioritized for advancements and new developments. The Project was considered to incorporate network innovation through sophisticated data analysis of load patterns and generation sources, aiming to dynamically optimize network capacity, which was considered to go beyond business-as-usual network innovation. The goal is to harness the grid's 'maximum rating' whenever feasible, bypassing the need for reinforcement works. Moreover, this initiative seeks to enhance the management and integration of new additions to the network. The Expert Assessors therefore considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider the Project to undermine the development of competitive markets and therefore considered the Project to have met this Eligibility Criteria. This is because the Project's proposed scope and activities are not anticipated to influence or disrupt competitive markets as its primary focus is on the approach and management of UK electrical supply grid, which is operated by the DNO. Since the benefits derived from this Project were considered widespread and generic, the Project was not considered to demonstrate any specific advantage to a single entity, thereby ensuring that it is not undermining competitive market developments.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative, novel and risky. The Project was considered novel and innovative because it proposes a new approach to connection queues on the electricity network. However, it was noted that greater detail on the level of analysis and granularity that the Project will examine would have benefited the Application as it would have provided more evidence on

the level of innovation. However, the Expert Assessors still considered the Project's approach to be innovative. Furthermore, it was noted as risky because there is a degree of uncertainty with the Project's proposed approach and the novelty in its approach. Overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to include participation from a suitable range of stakeholders for the activities set out. The assessors noted that the Project group includes a number of relevant industry and regulatory stakeholders, and their inclusion in dissemination activities, which was considered to be a crucial part of the Project's path. One Expert Assessor also noted that even though the Project has a suitable range of stakeholders, a risk remains in ensuring that they are all engaged in the Project's delivery so that any solutions proposed are suitable for all stakeholders. Overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project's overall costs to, on the whole, be reasonable given the scope of work. While it was noted that a significant portion of the work and the Project's overall costs were directed towards one Project Partner, these costs were considered to be costed competitively because they were appropriate and aligned with industry norms. The assessors also considered the costs to be appropriate for the simulation nature of the Project. The Expert Assessors also noted positively the contributions by the Project group, which they considered to further deliver value for money for 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.

Eligibility Criterion met

The Expert Assessors noted positively that the Project has adopted a methodology that is in line with international standards and that its approach is in a manner which is logical and which provides confidence that it will progress in a timely manner. It was noted that much of the Project's overall potential success hinges on the depth of analysis undertaken in work package 1, but the Expert Assessors had confidence in the Project's plan and approach. Overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase**NO**

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority**FUND**

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.

Recommended Project specific conditions

There should be thought given to what is the minimum viable output from WP1 to allow the other WPs to progress.

7.2.3 10085756, Shifting Currents, Initial Net Funding Requested £324,926

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
NATIONAL GRID ELECTRICITY DISTRIBUTION PLC	£46,740.00	£4,674.00	£42,066.00
UK POWER NETWORKS (OPERATIONS) LIMITED	£23,300.00	£2,330.00	£20,970.00
ANGLIAN WATER SERVICES LIMITED	£14,700.00	£7,350.00	£7,350.00
SMART GRID CONSULTANCY LIMITED	£318,530.00	£103,430.00	£215,100.00
SOUTH WEST WATER LIMITED	£61,600.00	£30,800.00	£30,800.00
SEVERN TRENT WATER LIMITED	£17,280.00	£8,640.00	£8,640.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered this Project to have addressed the Innovation Challenge because it is enabling the introduction of more flexible services. It addresses the Innovation Challenge through its capacity to achieve carbon emission reductions via innovative load shifting between water and electricity networks, aligning with the Net Zero goal. By focusing on water network operation and plant efficiency, the Project anticipates substantial site-specific and nationwide impacts, offering a novel approach to challenging industry load shifting and potential stakeholder benefits.

Eligibility Criterion 2:

Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers

Eligibility Criterion not met

The Expert Assessors did not consider the Project to have identified a clear potential to deliver a net benefit to gas or electricity consumers because whilst it recognises the advantage of providing grid flexibility services to enhance cost-effective system operation, the primary beneficiary was considered to be the water companies. It was also noted by the assessors that electricity consumers could potentially be worse off as there could be less competition for flexibility services. The Application was considered to lack detailed information regarding its potential benefits to electricity consumers.

The Expert Assessors did acknowledge that some guidance is needed from Ofgem about exploring a single flexibility service and what the regulatory rules would be around and where responsibilities would lie between Ofwat and Ofgem. The Project may benefit from reapplying with a joint application into both Ofgem and Ofwat's innovation funds.

Overall, the Expert Assessors do not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion not met

The Expert Assessors did not consider the Project to involve network innovation because whilst the water use case is an untapped flexibility service and there may be commercially innovative aspects, in the interview, the networks innovation elements were not clarified. The answers provided were largely focused around water innovation.

The Application emphasises on interoperability, load management, and delivery for the electricity network, which demonstrates innovative use of the flexibility inherent in both networks. While the potential for deploying network innovation exists in the Project, it requires further evidence. During the interview, the Expert Assessors probed this with the Project and considered that the 'special communications between water and energy controls' were understated and after further probing the Project Partner did note that there was limited innovation in this approach and that it is all quite simple, which made the Expert Assessors question why this innovation had not been completed without network innovation funding.

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

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion not met

The Expert Assessors did not consider the Project to have clearly articulated that it is not undermine the development of competitive markets because it is unclear who would take ownership of the overall benefits and the regulatory interlinks which the Project proposes, and how other electricity consumers could still compete within flexibility markets and not be worse off from water utilities providing this service. As a result, the Expert Assessors do not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion not met

The Expert Assessors considered the Project to be novel because it focuses on the use case of water flexibility which has not be explored. However, the Expert Assessors did not see the Project as innovative or risky as it was unclear how this was different to other flexibility services or load shedding techniques. As stated above for Eligibility Criteria 3, it was also unclear to the assessors why this was related to energy network innovation and why the electric consumers were paying for it. It was acknowledged that there may be some innovation within the commercial arrangement but limited evidence was given. The Expert Assessors therefore did not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered this Project to include participation from a sufficient range of stakeholders for this Eligibility Criteria to be met because it involves a diverse array of stakeholders, with sufficient representation from both industries and regulatory bodies. The 16 illustrative use cases underscore the necessity for broader stakeholder engagement beyond existing participants, ensuring relevance to the Project's goals.

The Expert Assessors did express concern that the Project Partners may have been included in name only and may not provide material contribution as there was limited evidence to support their involvement within the interview. Notably, the lack of other Project Partners participation in the interview and the Funding Party's perceived limited role in the Project. However, it was noted that there is a successful track record of the Project team, who delivered a previous NIA project (FLOWERS) which suggests competence. Overall, however, the Expert Assessors considered this Eligibility Criteria to have been met.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion not met

The Expert Assessors did not consider the Project to be delivering value for money and be costed competitively because the benefits associated with electricity consumers were low and there was limited justification of resources provided. It was also noted that the day rates for the Smarter Grid Solutions were considerable higher than industry averages, which the Expert Assessors considered not be costed competitively. Upon probing in the interview, the answers related to the Project's cost questions were considered by the assessors to have been avoided by the Project Partners. As a result, the Expert Assessors did 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.

Eligibility Criterion met

The Expert Assessors considered the Project to have a robust methodology which gives confidence that it will be capable of progressing in a timely manner because the Application was well-organised and structured, with a clear plan and a strong methodology that instils confidence in its timely progress. The Project's solid planning, built upon previous outputs, was considered appropriately defined and presented. The Expert Assessors therefore considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

DO NOT FUND

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.

Recommended Project specific conditions
N/A

7.2.4 10078792, Powering Wales Renewably, Initial Net Funding Requested
£499,176

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
NATIONAL GRID ELECTRICITY SYSTEM OPERATOR LIMITED	£154,029.00	£28,363.00	£125,666.00
NATIONAL GRID ELECTRICITY TRANSMISSION PLC	£18,211.00	£1,821.00	£16,390.00
SCOTTISH POWER ENERGY NETWORKS HOLDINGS LIMITED	£13,375.00	£1,338.00	£12,037.00
NATIONAL GRID ELECTRICITY DISTRIBUTION PLC	£19,475.00	£1,948.00	£17,527.00
CENIN RENEWABLES LIMITED	£5,880.00	£588.00	£5,292.00
CGI IT UK LIMITED	£566,939.00	£244,675.00	£322,264.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the Innovation Challenge as it proposes establishing a platform that will promote the integration of innovative assets into the electricity system and associated energy and flexibility markets. This was considered to be directly aligned with the one of the aims of the challenge, which is to develop innovations in technologies, markets and standards that help the power system be ready for net zero by 2035. The Expert Assessors also noted positively the Project's alignment with zero-carbon power systems, and considered the geographical selection of Wales as the pilot location as fitting due to its ambitious renewable energy transformation goals. It was also noted that the project's approach to compiling datasets and instituting governance holds potential for widespread adoption, not just within Wales but possibly beyond its borders as well.

Eligibility Criterion 2:

Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers

Eligibility Criterion met

The Expert Assessors considered the Project to present clear potential to deliver a net benefit to electricity consumers. The assessors noted a key feature of the Project is its emphasis on the introduction of new digital twinning, which provides a comprehensive view of local renewable electricity demand and supply dynamics. This was noted to have the potential to deliver a net benefit to electricity consumers through multiple avenues, such as the reduction of flexibility service costs, minimization of constraint costs, optimization of both supply and demand-side assets, and the facilitation of more effective Local Area Energy Planning. These were considered to have the potential to deliver a net benefit through

proposed reduction in costs. Moreover, the Project also sets out a potential environmental benefit through potential carbon reductions. Overall, the Project was considered to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to involve network innovation because it proposes integrating digital assets and data from networks at a scale well beyond the current conventions of the energy sector, thereby demonstrating network innovation beyond business as usual.

The Project's core initiative revolves around the development of a Transmission and Distribution (T&D) digital twin, catered towards addressing challenges and use-cases shaped by stakeholder input. While there's recognition of its novelty, it was cautioned by one of the assessors that there could be concerns regarding the alignment of stakeholders on use cases and the potential underemphasis on community energy, especially given its pivotal role in the Welsh energy landscape. However, overall, the Expert Assessors considered the Project to demonstrate network innovation as it could facilitate the renewable-powered electrification of heat, transport, and local energy systems, and demand response and flexibility facets. Overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider the Project to undermine the development of competitive markets. The Project has set out its intention of disseminating its findings in accordance with the SIF Governance Document and it was noted that the Project proposes developing new information and insights that can inform markets. This was considered to have the potential to stimulate the development

of competitive markets through the development of a digital common model, which could support the establishment of competitive platform. It was noted by one Expert Assessor that this is something which the Project should continue to monitor as it progresses. Overall, the Project was not considered to undermine the development of competitive markets and the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be ambitious, with innovative and risky undertakings. This Project seeks to go beyond existing practice by integrating digital assets and data on a scale unparalleled, which will also involve levels of risk, resulting in the assessors considered the Project innovative and risky. Its ambition is further demonstrated by its proposal to develop a digital twin of the Welsh T&D system and incorporating bottom-up information, which, while risky and innovative, is backed by a well suited Project team. The proposed solution could provide a route to power Wales renewably, tapping into local renewable resources and local planning. While it was acknowledged that a stronger incorporation of community ownership would have strengthened the Application, overall, the Expert Assessors considered the Project to be innovative and risky.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to benefit from a robust consortium geared towards developing the technical platform and comprehending the energy system's needs. National Grid as the Funding Party was considered to add credibility to the Project and its activities. The assessors also noted positively the inclusion of a diverse mix of private and public sector entities, underscored by the inclusion of the Welsh Government.

However, the Expert Assessors also noted that the stakeholder engagement in the Project could have been strengthened with greater representation from asset operators, consumers, communities, and non-energy businesses. These groups, who have vested interests in flexibility, local area energy planning, and more, could provide a broader perspective on the Project's goals and development plans.

While the Expert Assessors considered the Project to have met this Eligibility Criteria, they have recommended a Project-specific condition for the Project to examine opportunities for bringing greater participation into this Project during the Alpha Phase, where a broader perspective could help shape the development of solutions to the Problem ahead of potential deployment of the proposed solution.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to offer sufficient value for money, with the consortium members significantly contributing to the Project's overall costs. These expenses set out were considered reasonable, given the Project's scope, ambitions, and inherent risks, thereby providing confidence that the Project is costed competitively. It was noted by one Expert Assessor that greater clarity on how the SIF Funding set out for the DNOs and renewable energy experts in the Project consortium would ensure that there is sufficient SIF Funding for the potential scale of their role in the Project. Overall, however, 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.

Eligibility Criterion met

The Expert Assessors considered the Project to be built on a strong and credible methodology, which provides confidence in its ability to progress in a timely manner. The Project plan, Gantt chart, and risk analysis are comprehensive,

addressing the significant activities and risks that could potentially impact the delivery of the envisaged platform and its applications. Notwithstanding, there is a suggestion that a more granular breakdown of larger activities, paired with regular interim deliverables, would have strengthened the plan. While the team behind the Project is skilled and dependable, there is an underlying risk associated with stakeholder alignment on key use cases and adequate stakeholder engagement. To further enhance the Project's efficacy, greater clarity and consideration for how it is being integrated with other Welsh renewable energy initiatives would have strengthened the Application.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

This is an ambitious Project that potentially addresses key issues of transitioning the energy system to net zero. It would be stronger with:

- a) more attention to incorporating the perspectives of consumers, communities, non-energy businesses, energy asset operators, etc, as these all have an interest in issues such as LAEPs
- b) breaking the Project plan down into smaller units with more frequent interim deliverables
- c) more attention to the model for commercialising and operating the platform once it has been proven. This needs to consider both how ongoing development and maintenance of the platform will be financed, and models for operating the platform without undermining competitive markets.

Key recommendations are:

- Consider whether you need specific engagement with community energy groups and key Welsh institutions, including the Renewable Energy Developer and the Energy Service.
- Consider better integrating your key partners, including the DNOs and the renewable energy company.
- Given that the LAEPs for all Welsh regions will not be completed until 2024, you could engage specifically with the delivery partners (for example Arup and ESC)

7.2.5 10079461, HyNTS Waste Heat Recovery for Electrolysis, Initial Net
Funding Requested £386,732

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
NATIONAL GAS TRANSMISSION PLC	£77,126.00	£42,971.00	£34,155.00
ANGLIAN WATER SERVICES LIMITED	£49,800.00	£-	£49,800.00
ALFA LAVAL AALBORG OY	£139,600.00	£-	£139,600.00
HYDROGENUS GROUP LTD	£78,375.00	£-	£78,375.00
CARDIFF UNIVERSITY	£82,624.00	£-	£82,624.00
SOUTHERN GAS NETWORKS PLC	£2,178.00	£-	£2,178.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Project was considered to align with the Innovation Challenge through its novel approach towards carbon emission reduction in the current gas transmission system. This Project proposes to leverage waste heat from hydrogen compressors in the National Transmission System (NTS), both to improve the efficiency of hydrogen electrolysis and possibly pave the way for its wider industrial application.

This contributes towards preparing for a net-zero power system and aligns with one of the Innovation Challenge’s core aims, which is to develop innovations in technology, markets and standards that help the power system be ready for net zero by 2035. One Expert Assessor did note that greater clarity on the Project’s overall pathway to net zero by 2035 and the carbon emission reductions would have strengthened the Application. Overall, however, the Expert Assessors considered 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

Eligibility Criterion met

The Expert Assessors considered the Project to have identified a net potential benefit for primarily gas consumers, but also for electricity consumers. While the Expert Assessors noted that the benefits identified were from a higher-level analysis than anticipated, they did note that the Project had identified benefits for consumers primarily through cost and emission reductions, as it proposes a possible reduction in compressor running costs by utilizing hydrogen which would also reduce emissions. The high-level nature of the analysis, however, left one assessor to comment that there was a level of uncertainty about whether these projected reductions would materialize, even though such uncertainties are not unusual in innovative and risk-taking projects. It was also noted that the financial viability of a green hydrogen-fuelled compressor system, in comparison to business as usual (BAU) scenarios, is still undetermined but could also result in greater benefits for consumers. Nevertheless, the assessors considered the Project to have identified tangible benefits to gas consumers, particularly CCGT gas generators that heavily utilize the gas transmission system. The Expert Assessors therefore considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to sufficiently and clearly set out network innovation. The Project proposes a novel approach of leveraging waste heat from gas compressors to enhance the efficacy of hydrogen electrolysers and potentially produce electrical generation. This innovative approach has not been previously explored, thereby demonstrating its innovative ambition above business as usual approaches. Building upon a lineage of relevant innovations, this Project furthers the development pathway for hydrogen use, extending to on-site demonstrations. Moreover, it was also noted to demonstrate network innovation in its approach of curtailing emissions produced during the compression of gas into the national gas transmission system. The Expert Assessors therefore considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Project was not considered to undermine the growth of competitive markets. The Expert Assessors noted positively that some aspects of the Project are already inclining towards open tendering, reflecting its adherence to market-friendly practices which could further stimulate competitive markets. While the provision of NTS compressors is a niche market, the Project's intent is to navigate and manage this domain as the Project progresses. Notably, the assessors did not identify any conflicts with the development of competitive markets through this approach or the Project's approach in the Alpha Phase. Broadening the scope, the technological enhancements being explored could find relevance beyond the gas transmission system, thereby stimulating competitive markets in other industries as well. The Expert Assessors therefore considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative, novel and risky overall because it is examining a potential future for the NTS with hydrogen and how it would interact with the future assets. It was considered innovative because it is focusing on the use of hydrogen compressors, how they would function with hydrogen in the NTS, and how the compressors and hydrogen could interact. The interaction between the two, and using heat to improve the overall efficiency of the process, was considered novel as this approach is not currently being explored elsewhere. It was also noted that there are future policy and regulatory decisions which could impact the deployment of this Project's proposal, which the Expert Assessors considered to introduce an element of risk to the Project. The Expert Assessors therefore considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to have participation from a sufficient range of stakeholders for the activities set out. The Expert Assessors noted positively the inclusion from both gas transmission networks and a commercialisation-focused partner. However, it was noted that while there are mentions of stakeholder engagement in the Project plan, greater clarity on the approach to illustrate this engagement would have strengthened the Application. Additionally, the assessors also noted that the inclusion of an electrolyser technology provider could potentially have enriched the project's technological depth and practical implementation, and have recommended a Project-specific condition for the Project to consider bringing one onboard as a Project Partner. Overall, however, for the activities set out, the Expert Assessors considered the Project consortium to be sufficient and therefore considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to offer value for money and to present costs that align with the benchmarks set by other Alpha Phase Projects, which gives confidence that the Project is costed competitively. The financial outline was considered sufficient, but there is an element of ambiguity regarding the innovation's cost-effectiveness relative to the business-as-usual approach for gas customers. While the Project's value for money is highlighted when juxtaposed with alternate approaches presented, a clearer breakdown or standard of measurement to confirm the reasonableness of these costs would augment the Project's financial transparency and assurance to stakeholders. Greater clarity on this would have strengthened the Application, but 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.

Eligibility Criterion met

The Expert Assessors considered the Project to exhibit a robust methodology underpinned by the comprehensive details embedded in the Project plan and risk register. Furthermore, the experience of the Project Partners, especially the Funding Party, in overseeing innovation Projects boosts the Expert Assessors' confidence in the Project's potential to progress in a timely manner. The Project leans heavily into engineering specifics and taps into existing innovation paradigms, which was viewed positively. While the absence of an electrolyser partner introduces some uncertainties, particularly concerning requirement assessment, it simultaneously opens up the possibility of devising an innovative heat recovery solution. This balance between challenges and opportunities further underscores the well-thought-out methodology of the Project. The Expert Assessors therefore considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

General recommendation is to firm up the potential customer benefits of the project if taken through to BAU. There is little detail on future compression needs in a net-zero energy system and as there is pretty widespread agreement on the reduced role of a gaseous vector in a net-zero energy system, how does that translate across to the compressor needs for the NTS? The potential savings of 106,000t of CO₂, although not insignificant, are also not a large wedge at a

national level either. Some consideration of this in relation to underpinning a net-zero power sector would be interesting to have some thought around.

The key gaps in the project are:

- A lack of engagement with local communities despite opposition being raised as a material risk
- A lack of justification this is better value for gas customers compared to BAU
- Insufficient emphasis on the uncertainty of gas as an energy vector despite this being raised as a material risk.

It may be worth exploring in greater detail how the project aims to address no longer having an electrolyser specialist as part of the core team.

7.2.6 10079465, HyNTS Hybrid Storage, Initial Net Funding Requested
£375,369

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
NATIONAL GAS TRANSMISSION PLC	£71,606.00	£41,895.00	£29,711.00
THE MANUFACTURING TECHNOLOGY CENTRE LIMITED	£154,414.00	£-	£154,414.00
UK POWER NETWORKS (OPERATIONS) LIMITED	£18,525.00	£1,685.00	£16,840.00
H2GO POWER LTD	£150,179.00	£-	£150,179.00
HYDROGENUS GROUP LTD	£24,225.00	£-	£24,225.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered this Project to have addressed Innovation Challenge because it sets out how it will contribute to the decarbonisation of the grid through novel technologies to reduce emissions at key compression sites. The Project seeks to use green hydrogen to fuel the turbine compressors that feed natural gas into the gas network, removing the use of natural gas as the turbine

fuel and so eliminating CO2 emissions. A novel hybrid hydrogen storage arrangement will reduce the amount of compressed hydrogen on site, leading to a safer operating environment. This aligns to one of the aims of the innovation Challenge. Therefore, the Expert Assessors 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

Eligibility Criterion not met

The Expert Assessors did not consider the Project to have met this criteria because the majority of the Expert Assessors considered the Project to not have clearly justified a potential to deliver a net benefit to consumers through the hybrid storage solution proposed compared to the counterfactual, which is to not employ this solution onto the UK compressor fleet.

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 to justify this Project. As a result, the Project was not considered to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered this Project to involve network innovation because it aims to use hydrogen to fuel the UK's gas compression fleet on the National Transmission Systems which is central to the Project. The innovation described was considered to have the potential to enable emission reductions as well as introducing safer solid storage of the hydrogen on the site.

Overall, this would likely have a direct impact on the network, potentially making operation safer for network staff on site. The Expert Assessors agreed that the

Project requires a high degree of innovation beyond business as usual across the systems and equipment described to achieve its decarbonisation objectives. For this reason, they considered this Project to have met the Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider this Project to be undermining the development of competitive markets because the technology to be developed in this Project could be applicable in other energy supply chains, such as fuelling stations for transport applications. They recognised that there are alternative solutions to fuelling compressor engines, and these markets may choose to use alternative solutions or they may choose to adopt the novel solution proposed by the Project. As a result, the Expert Assessors consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative, novel and risky because the Project seeks to combine solid state with gas storage of hydrogen at a scale which has not currently been achieved yet in the energy industry. The Expert Assessors recognised that the storage of hydrogen is by its very nature risky, but solid state storage is operationally safer. The AI technology proposed in this Project will assist in determining the flow of hydrogen required to feed the turbine, and was considered novel by the assessors. The Project has presented several elements that could be considered risky in this context, and overall it requires high levels of ingenuity and innovation. The Expert Assessors therefore considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered this Project to include participation from a sufficient range of stakeholders for this Eligibility Criteria to be met because all stakeholders were clearly identified, represented and engaged and commensurate with the scope of the Project. The Expert Assessors noted that there is a good mix of companies and stakeholders involved in the project who represent regulators, energy users and technical specialists which gave confidence in the consortium. The Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion not met

While the Expert Assessors considered the Project's costs to be costed competitively compared with industry norms, they did not consider the Project to provide value for money. This is because the assessors did not consider the costs for the Project's activities to be sufficiently justified or articulated against the counterfactual (as mentioned in Eligibility Criteria 2), thereby resulting in them not having confidence that the Project's overall costs were reasonable. The assessors also noted uncertainty as to how the Project could provide cost savings from its proposed solution due to its implementation as a temporary solution in the run up to the transition to hydrogen, at which point the compressors can be fed directly from the NTS. They noted that this could result in stranded assets, which further impacted the value for money the Project could provide.

As a result, while the Expert Assessors considered the Project to be costed competitively, they did 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.

Eligibility Criterion met

The Expert Assessors considered the Project to have a robust methodology which gives confidence to the Expert Assessors that it will be capable of progressing in a timely manner because the Application was considered well written and the methodology set out was logical and deliverable based on the planned resources. All key steps and milestones were identifiable to allow the Project to progress through the Alpha Phase. For this reason, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

DO NOT FUND

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.

Recommended Project specific conditions
N/A

7.2.7 10079053, INSIGHT, Initial Net Funding Requested £227,093

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
SCOTTISH HYDRO ELECTRIC TRANSMISSION PLC	£83,587.00	£8,359.00	£75,228.00
NATIONAL GRID ELECTRICITY SYSTEM OPERATOR LIMITED	£69,521.00	£6,952.00	£62,569.00
UNIVERSITY OF STRATHCLYDE	£99,445.00	£10,149.00	£89,296.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to address an important and emergent technical issue in the realm of power network oscillations. As the energy sector witnesses a surge in renewable integrations into the grid, the potential for network oscillations increases. This has already been observed both in the UK and internationally. If unaddressed, these oscillations could lead to frequent power

disruptions, adversely affecting many consumers and threatening the reliability of our power supply. Therefore, the Project was considered to be directly aligned with the Innovation Challenge scope, aiming to ensure that renewable integrations do not compromise the grid's stability. The Expert Assessors 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

Eligibility Criterion met

The Expert Assessors considered the Project to present a multifaceted value proposition for consumers. At its core, the initiative seeks to bolster the risk management strategies of network companies. By doing so, it sets the stage for enhanced operational efficiency over time. For end consumers and bill payers, the ability to have a more robust balancing system, which seamlessly integrates higher volumes of renewables, translates to value through cost savings and greater system reliability. Furthermore, it promises a tangible reduction in technical risks associated with power network oscillations. The Expert Assessors also noted positively benefits being identified in a qualitative and quantitative approach. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to clearly demonstrate network innovation. Anchored in research from academia, the Project intends to expand upon state-of-the-art findings and methodologies and could result in new detection and management systems for oscillations, thereby going above a business as usual approach. The Expert Assessors also noted that the Project's innovative approach could result in a need for additional research and innovation

to come forward. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors considered the Project to not undermine the development of competitive markets. The assessors noted that the Project's proposed solution would provide a generic solution which would benefit all relevant stakeholders, thereby not undermining the development of any competitive markets and potentially stimulating new competitive markets. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project's approach of addressing the complexities and uncertainties inherent in the methodologies essential for understanding and countering the Problem identified to be innovative and risky. The Project's innovative and risky profile is underscored by its early-stage data collection, engagements with international learning touch points, and the nascent level of existing capabilities. Moreover, the Expert Assessors noted that there are several areas within the Project's focus where the solutions are not obvious, thereby demonstrating the innovative and risky nature of the Project. As such, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to have incorporated participation from a sufficient range of stakeholders for the activities set out. The Project team

was considered to cover a range of stakeholders with relevant experience, spanning private entities, public institutions, and academia. Given the experience and relevance of the participating entities, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to be providing value for money and to be costed competitively. They identified that the overall costs were modest given the complexity of the Problem identified, which they considered to be due to the relevant experience of the Project team and to give confidence that the Project is costed competitively. It was also noted positively that even though this Project is predominantly focused on academic research, the overall costs and SIF Funding requested were not considered to be misaligned with the Project's activities, thereby providing confidence that the Project is providing value for money. The Expert Assessors therefore 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.

Eligibility Criterion met

The Expert Assessors noted positively the detailed documentation provided within the appendices, including the Gantt chart and a clearly defined methodology. The Project was also considered to have clearly identified interdependencies in the Project. Together, these were considered to provide a comprehensive and organized plan for achieving the Project's specific objective and to give confidence that it will be capable of progressing in a timely manner. The Expert Assessors noted that the timescale presented were clear, which gives further confidence that

the Project will be capable of progressing in a timely manner. As a result, the Expert Assessor consider the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions
N/A

8.1 SIF Round 2 Alpha Phase – Improving energy system resilience and robustness - Summary

This section covers the assessment by the Expert Assessors of round 2 Alpha Phase Applications received into the 'Improving energy system resilience and robustness' Innovation Challenge⁶.

For the Alpha Phase, 20 Applications were submitted to Innovate UK through the Innovation Funding Service (IFS) portal by the closing deadline of 11am 5 July 2023 and are listed below.

Project reference number	Project name	Funding licensee	Total Project costs (£)	Total Project contribution (£)	Total SIF Funding requested (£)	Recommended for funding (Yes/No)
10085408	SCOHL - SuperConductor OverHead Lines	National Grid Electricity Transmission PLC	£514,191.00	£96,682.00	£417,509.00	No
10079052	REACT	SCOTTISH HYDRO ELECTRIC TRANSMISSION PLC	£553,671.00	£57,045.60	£496,625.40	Yes

⁶ <https://www.ofgem.gov.uk/publications/strategic-innovation-fund-innovation-challenges>

10079058	NIMBUS	SCOTTISH HYDRO ELECTRIC TRANSMISS ION PLC	£574,921.0 0	£75,048.00	£499,873.00	Yes
10079467	HyNTS Supply Chain	National Gas Transmissio n PLC	£498,707.0 0	£50,000.00	£448,707.00	No
10080646	NextGen Electrolysis – Wastewater to Green Hydrogen	WALES WEST UTILITIES LIMITED	£328,761.0 0	£32,937.00	£295,824.00	Yes
10083736	Distribution Network Information Modelling (DNIM) - Alpha	SOUTHERN GAS NETWORKS PLC	£499,653.0 0	£34,324.00	£465,329.00	No

10084569	SF6 Whole Life Strategy	National Grid Electricity Transmission PLC	£448,124.00	£44,813.00	£403,311.00	Yes
10085883	REWIRE (REsidential Whole System Integrated REsilience)	ELECTRICITY NORTH WEST LIMITED	£564,612.00	£66,465.00	£498,147.00	No
10078787	Scenarios for Extreme Events	NATIONAL GRID ELECTRICITY SYSTEM OPERATOR LIMITED	£508,982.00	£51,083.00	£457,899.00	Yes
10079059	Digital Inspector	CADENT GAS LIMITED	£343,809.00	£34,019.00	£309,790.00	Yes

10079341	Hydrogen Cost Reduction (HyCoRe)	NORTHERN GAS NETWORKS LIMITED	£593,133.00	£93,346.00	£499,787.00	Yes
10084557	Whole Energy System Resilience Vulnerability Assessment (WELLNESS)	National Grid Electricity Transmission PLC	£543,998.00	£72,273.00	£471,725.00	Yes
10085005	Looking-Glass - Alpha	SOUTHERN GAS NETWORKS PLC	£621,873.00	£146,737.00	£475,136.00	No
10085783	WARN - Weather Alerts and Risk analysis for Network operators	UK POWER NETWORKS (OPERATIONS) LIMITED	£523,298.00	£54,101.00	£469,197.00	Yes

10085944	Trinity	UK POWER NETWORKS (OPERATIONS) LIMITED	£557,751.00	£58,206.00	£499,545.00	Yes
10086002	CReDo+: Climate Resilience Demonstrator (extension to new climate risks)	UK POWER NETWORKS (OPERATIONS) LIMITED	£555,297.00	£57,441.00	£497,856.00	Yes
10086409	CommsConnect	UK POWER NETWORKS (OPERATIONS) LIMITED	£463,355.00	£59,973.00	£403,382.00	Yes
10086458	Connectrolyser	UK POWER NETWORKS (OPERATIONS) LIMITED	£555,330.00	£56,847.00	£498,483.00	Yes

10086622	D-Suite	SP MANWEB PLC	£550,224.0 0	£55,214.00	£495,010.00	Yes
10086716	Dynamic Networks	SSEN DISTRIBUTI ON LIMITED	£561,822.0 0	£61,971.00	£499,851.00	No
10082956	SIF Black start Demonstrato r from offshore wind (SIF BLADE)	SCOTTISH POWER ENERGY NETWORKS HOLDINGS LIMITED	£711,020.0 0	£211,100.00	£499,920.00	Yes

8.2 Evaluation of Applications

8.2.1 10085408, SCOHL - SuperConductor OverHead Lines, Initial Net

Funding Requested £417,509

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
NATIONAL GRID ELECTRICITY TRANSMISSION PLC	£60,771.00	£50,709.00	£10,062.00
UNIVERSITY OF STRATHCLYDE	£99,997.00	£-	£99,997.00
THE UNIVERSITY OF MANCHESTER	£50,950.00	£-	£50,950.00
VEIR	£100,872.00	£25,872.00	£75,000.00
FRAZER-NASH CONSULTANCY LIMITED	£201,601.00	£20,101.00	£181,500.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the Innovation Challenge because it examines alternative means of increasing the capacity of existing transmission. This was considered to be directly aligned with the aims of the Innovation Challenge because it could to reinforce the electricity grid, thereby resulting in increased resilience and robustness. As a result, the Expert Assessors considered 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

Eligibility Criterion not met

The Expert Assessors did not consider the Project to have met this Eligibility Criteria because it has not clearly identified a potential to deliver a net benefit to electricity consumers. This is because the assessment of the net present value is negative at this point in the Project, which did not give confidence to the assessors that the Project has the potential to deliver a net benefit to consumers.

The Expert Assessors recognised that this is, in part, due to unknown costs that might be clarified and mitigated through live trial. This was also articulated and acknowledged by the Project team during assessment, as they noted that some of the operational and technical issues that are challenging to cost at this point of Project development might be better evidenced through trialling. The assessors also noted that other elements, for instance the costs of coolants, were not covered in the cost benefit analysis. The Project also highlighted their proposed structure of having their business case development work running alongside the trialling, which would inform the analysis to better understand performance and cost impacts (such as the cost associated with cable towers to support the novel cables under all conditions).

However, overall, the Expert Assessors considered there to be significant technical dependencies that the Project would need to resolve ahead of the development of a fuller cost benefit analysis. As the Project is currently scoped, they considered

there to be likely be major risks to the Project for the Alpha Phase. As a result, the assessors considered the Project to have not met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered this Project to involve network innovation because it is establishing the baseline technical and economic applicability of an early to mid-stage transformational superconducting technology for direct use as an electricity transmission network asset. This would be a novel approach to expanding electricity transmission network capacity beyond a business as usual approach. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider this Project to be undermining the development of competitive markets because the Project specified that the output cable design would be provisioned to the market of cable manufacturers under licence. Furthermore, the inclusion of multiple academic partners, was considered to the potential to can act as channels for the dissemination of technical learning in an open way which does not undermine competitive markets.

The Expert Assessors highlighted that given the small number of client Transmission Operator (TO) organisations in the GB market, the Project and technology provider should be proactively engaging the other TOs to create further market opportunities. However, the assessors noted positively that the Project did emphasise that they were regularly talking to the other TOs.

As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors all considered the Project to be innovative, novel and risky because it is focussed on the assessment and proving of an early stage high temperature superconducting cable design. They noted the early nature of the technology used in the Project introduces elements of risk to it, but the assessors also considered to be key to the innovative and novel elements of the Project. As a result, they considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered this Project to include participation from a sufficient range of stakeholders for this Eligibility Criteria to be met because the Project consortium was considered to have the range of organisations required to assess the viability of the design and scope a test trial, and the Project emphasised during assessment that they were engaging with the full range of transmission operators.

While they considered the Project to have met this Eligibility Criteria, the assessors also noted that the Application would have been strengthened with inclusion of a Project Partner with deep technical expertise on cryogenic systems. While they noted that this expertise exists in the main technology provider, they also noted that the wider team lacks deep technical expertise on cryogenic systems and an additional Project Partner would strengthen this expertise within the team.

Overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to be delivering value for money because the Project costs were considered reasonable, there are contributions from the Project Partners which are aligned to their potential benefits and which exceed the minimum contribution required, and the labour rates are reasonable and aligned with industry norms.

While it was noted by one Expert Assessor that there is potential for the technology development which arises from the Project to be leveraged by overseas economies and commercialised by a non-GB technology provider, thereby limiting the potential value for money from the Project, this was identified to be a longer term risk to the Project. On balance, the potential benefits to GB consumers from a small number of deployment would likely deliver sufficient benefits to warrant this investment.

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.

Eligibility Criterion not met

The Expert Assessors did not consider the Project to have met this Eligibility Criteria. Although the Project management documentation and methodology have been presented to a good standard, the technology risk was considered to be very significant for this phase of the Project. The mitigating activities to manage the major risks presented by the Project in the Alpha Phase were considered insufficient to give confidence of the Project's likely progression. The assessors also noted a host of significant uncertainties that the Project, as scoped, will struggle to resolve in the Alpha Phase and beyond. While the Project Team did state that they would undertake a reassessment of need and the method of delivery between milestones 4 and 5, the assessors considered the mitigating activities to manage these major risks to be insufficient. As a result, the assessors did not consider the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

DO NOT FUND

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. The Expert Assessors considered this 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 techno-economic assessment activities.

Recommended Project specific conditions

N/A

8.2.2 10079052, REACT, Initial Net Funding Requested £496,625

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
SCOTTISH HYDRO ELECTRIC TRANSMISSION PLC	£51,002.00	£7,650.00	£43,352.00
SOUTHERN GAS NETWORKS PLC	£8,712.00	£-	£8,712.00
NATIONAL GRID ELECTRICITY TRANSMISSION PLC	£18,211.00	£1,821.00	£16,390.00
ICEBREAKER ONE LIMITED	£123,006.00	£12,300.60	£110,705.40
MAPSTAND LIMITED	£153,500.00	£15,350.00	£138,150.00
OLWG LTD	£199,240.00	£19,924.00	£179,316.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have directly addressed the Innovation Challenge of electricity distribution network's physical capacity, which was considered crucial for ensuring a resilient future energy system. By scoping a tool for visualizing the electricity network and power flows, the Project has the potential to enhance the efficiency of energy system connections, which could improve energy system resilience and robustness on the journey to Net Zero.

This was considered to be aligned with the challenge's aim of improving the understanding of robustness in future energy system configurations and developing solutions to improve and strengthen it. The assessors noted that the tool leverages a hydrogen development as a case study and also exhibits the potential to be extended universally for all connections. The assessors also noted positively its focus on Transmission Operator/Distribution Network Operator supply/demand pinch-point modelling, which could provide enhanced visibility to connections while accelerating the energy transition and managing costs for consumers. As a result, the assessors considered 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

Eligibility Criterion met

The Expert Assessors considered the Project to have clearly identified potential to deliver a net benefit to electricity consumers. It was noted positively that the Project has the potential to significantly enhance current procedures for network operators and developers connecting to the electricity grid, presenting clear potential to reduce costs for end consumers. The Project therefore has identified the potential to result in net benefits for electricity consumers via financial benefits by streamlining connections.

Moreover, it was noted that the Project also has the potential to deliver a net benefit to gas consumers, particularly within the context of hydrogen development connections. It was also noted positively that the Project could help in refining the

decision-making process for connections which could also deliver a reduction in carbon emissions. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:
Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to involve network innovation through its focus on exploring ways to address network constraints, utilizing hydrogen development in a region with high renewable generation as an illustrative model for potential carbon emission reductions. This innovation extends to both the strategic planning and operation of networks, aiming for enhanced efficiency and resilience, and was therefore considered to demonstrate innovation beyond a business as usual approach.

Furthermore, it was noted that the Project’s planned development will also require considerable innovation in data handling—encompassing aggregation, integration, and reconciliation—to offer an improved perspective on network connections from both technological and economic standpoints. As a result, the Expert Assessors considered the Project to have met the Eligibility Criteria.

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

Eligibility Criterion met

The Expert Assessors considered the Project to not undermine the development of competitive markets. Instead, the assessors considered it to demonstrate a commitment to fostering competition within the market. The Project's intention to make the tool universally accessible to a wide range of stakeholders, post-development, provides assurance that competitive markets will not be undermined.

Additionally, the Project's design ensures that all developers have open access to the provided information via the licensees. Plans are in place to grant access to the product to all licensees through a commercial agreement, and it was noted that it has the potential to become an essential component of future regulatory procedures or price reviews. As a result, the Expert Assessors did not consider the Project to undermine the development of competitive markets and instead noted its potential to develop new competitive markets through the use of its tool.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The majority of the Expert Assessors considered the Project to be innovative, novel and risky. One assessor noted that the Project could have provided greater clarity on the innovation within its approach as they noted that most of the information provided in the Application was at a higher level than anticipated, which limited their overall assessment of whether the Project was innovative.

However, the other two assessors noted that the Project is novel and innovative because it was considered to be the first Project to bring together various aspects that, although identified individually in stakeholder consultations from other projects, have not been approached within a singular holistic ambition. The assessors also noted that the Project's riskiness was in its proposed development of software, with an additional area of risk noted on the integration with hydrogen. As a result, overall, the majority of the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to include participation from a sufficient range of stakeholders for the activities set out. The Project was considered to display an inclusive stance by incorporating a broad spectrum of

stakeholders in its Alpha Phase activities. The composition of the Project Partners is considered sufficient, integrating the original project team from the Discovery Phase while also adding NGET and SGN as additional networks in the project. The assessors noted the importance of stakeholder engagement as a pivotal activity embedded within the Project's design and have recommended a Project-specific condition for the Project to consider the stakeholders required for activities beyond the Alpha Phase and into business as usual. As a result, the Expert Assessors considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The majority of the Expert Assessors considered the Project to have clearly demonstrated that it is providing value for money and is costed competitively. One assessor noted that work package 3 was costed higher than anticipated, with less of a contribution from the Funding Party. However, the other two Expert Assessors did consider the Project's overall costs to be competitive and reasonable for the activities set out, which gave them confidence that it will be capable of progressing in a timely manner. The assessors noted positively the cost effective use of subcontracting and the overall cost effectiveness of the work packages, as well as the potential benefits of the proposed solution, which could help to deliver greater value for money for consumers. While one assessor noted that the costs per Project Partner could have been broken down in greater detail, they considered the overall costs from the Project Partners to be reasonable for the activities set out. Overall, the majority of the Expert Assessors considered 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.

Eligibility Criterion met

The Expert Assessors considered the Project to demonstrate a robust methodology which is clear and well-structured, and instils confidence in the likelihood of its timely progression. The Project plan was considered clear and to have set out easily understood work packages with dependencies and responsibilities. The Gantt chart, in particular, was noted positively by the Expert Assessors for its clarity and alignment with the Project timeline. As a result, the Expert Assessors considered it to have met the Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

The Expert Assessors considered the Project 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.

Recommended Project specific conditions

It would be beneficial for the Project to carefully evaluate and examine the methodology for innovation and the value for money in certain proposed work packages to ensure that the Project's goals are met efficiently and effectively while maximizing the value of the allocated resources.

The Project should consider engaging with the Alan Turing Institute with respect to a digital twin for the energy system, work has already taken place and may overlap with some of the planned work.

The Project should consider the stakeholders required for deployment and whether these stakeholders need to be brought into the Project during the Alpha Phase to support not only deployment but progression to business as usual.

8.2.3 10079058, NIMBUS, Initial Net Funding Requested £499,873

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
SCOTTISH HYDRO ELECTRIC TRANSMISSION PLC	£54,284.00	£5,429.00	£48,855.00
PALANTIR TECHNOLOGIES UK, LTD.	£351,000.00	£52,650.00	£298,350.00
ICEBREAKER ONE LIMITED	£135,625.00	£13,563.00	£122,062.00
SCOTTISH HYDRO ELECTRIC POWER DISTRIBUTION PLC	£5,052.00	£506.00	£4,546.00
IBM UNITED KINGDOM LIMITED	£28,960.00	£2,900.00	£26,060.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered this Project to have addressed Innovation Challenge because it introduces an innovative probabilistic approach to asset risk and predictive maintenance, allowing network companies to detect weather-related asset degradation early and respond with precision. This approach not only prioritises asset renewal and repair, eliminating redundant maintenance and thereby reducing carbon emissions, but also conserves capital for vital network upgrades. A successful widespread implementation will bolster system resilience in alignment with the Challenge requirement. The Expert Assessors therefore considered 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

Eligibility Criterion met

The Expert Assessors considered this Project to have clearly identified potential to deliver a net benefit to consumers because it aims to assist network companies to facilitate predictive maintenance of assets, thereby decreasing operation and maintenance costs and reducing asset replacement costs which will ultimately benefit consumers. It was noted that the benefits identified in the Application are conservative as they only reflect a single use case on the transmission network and do not therefore consider wider rollout and application to both transmission and distribution networks. It was noted in the interview that distribution benefits would likely be considered in a Beta Phase Project. Overall, the Expert Assessors considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered this Project to have met this Eligibility Criteria as it integrates novel data and methodologies to facilitate predictive asset maintenance in a novel manner and which complements other SIF projects. By innovatively enhancing the modelling of network asset conditions –factoring in

weather data over the asset's lifespan — it allows for optimised management of maintenance and replacement. This will deliver cost savings that benefit consumers and can contribute to CO2 emissions reduction.

Furthermore, by examining the influence of weather on network assets, the Project offers potential improvements in network availability and system resilience. Some concerns were raised by the Expert Assessors over the degree of innovation being delivered by Palantir. During the interview, Palantir expressed that they had a number of existing innovation projects already using their software technology (i.e. whether their contribution to the project is product development rather than innovation) which brought concern to the Expert Assessors that their financial contribution should have been higher and/or that the requested SIF Funding was for product development rather than innovation. This added to the Expert Assessor view that this was incremental innovation rather than step-change innovation. However, overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider this Project to be undermining the development of competitive markets. While there were questions about the IPR terms, which are still being finalised, the interview did provide some clarity particularly around the role of Icebreaker One exploring data availability and access within the Alpha Phase. Given that mechanisms are in place for sharing knowledge among different network operators, and the tool will improve efficiency in the lead partner's network, the technology will be available to others through licensing. This gave the assessors confidence that competitive markets will not be undermined and the Expert Assessors therefore considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative and novel, particularly welcoming that it incorporates user-centred design, and leverages previously untapped data sources, like weather, to refine asset renewal predictions. This can lead to cost savings that benefit electricity consumers. The uniqueness and inherent risk of the project justifies funding beyond standard business-as-usual allocations. The Expert Assessors consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered this Project to include participation from a sufficient range of stakeholders for this Eligibility Criteria to be met because the application heavily emphasises stakeholder involvement, ensuring their insights shape both the problem definition and solution. All necessary data for model development is available for the Project Partners. Additionally, the Project will keep external stakeholders informed through extensive dissemination activities. The Project encompasses diverse stakeholders from the energy sector and will further liaise with an advisory group composed of non-participating network operators and other industry participants. The Application would have been strengthened if it had considered engaging another network operator as a Project Partner to ensure roll out across GB networks. However, overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to be delivering value for money and to be costed competitively based on the activities that will be delivered. The Expert

Assessors did, however, note that the wider financial benefits from the Project's solutions, especially those directly transferring to consumers, remain more ambiguous than anticipated but the assessors also noted that these would be further refined during the Alpha Phase. The Expert Assessors also noted that the level of financial contribution that Palantir would be receiving could have been higher, and recommended further scrutiny of their costs in terms of ensuring that their funding would support innovation rather than direct product development. However, 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.

Eligibility Criterion met

The Expert Assessors considered the Project to have a robust methodology which gives confidence that it will be capable of progressing in a timely manner. Coupled with the expertise of the Project Partners, there is a strong belief that the Project will proceed efficiently and conclude successfully. The structured plan, team skills, and resource distribution further reinforce confidence in its timely delivery, although the Project may have benefit from a smaller number of work packages. The interview was well structured and provided further confidence in the team's delivery capability. As a result, the assessors considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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-centered 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.

Recommended Project specific conditions

It is recommended that Palantir and Icebreaker One provide clarity on what data and IP (specifically) will be accessible for wider exploitation by Third Parties as result of this project.

It is recommended that the Project engage with the other SIF Projects: Predict for Resilience, WARN and CREDO+ to consider a joint work package as part of deployment activities and to understand synergies.

It is recommended that the Project provide a further breakdown and assessment of Palantir costs to ensure that all SIF funding will be dedicated to the innovative aspects of their activities and not standard product development.

8.2.4 10079467, HyNTS Supply Chain, Initial Net Funding Requested
£448,707

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
SOUTHERN GAS NETWORKS PLC	£2,178.00	£-	£2,178.00
NATIONAL GAS TRANSMISSION PLC	£98,014.00	£50,000.00	£48,014.00
INSIDER PRO LTD	£199,950.00	£-	£199,950.00
DIGITAL CATAPULT SERVICES LIMITED	£198,565.00	£-	£198,565.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered this Project to have addressed the Innovation Challenge because the enhanced coordination of gas transmission and distribution aligns with the cohesive operation of the future energy system, and the Project demonstrates an effort to explore this aspect. The Project's approach was considered to be directly aligned with the aims of the Innovation Challenge and the Expert Assessors considered it to have the potential to de-risk the energy

supply chain and therefore promote sectoral resilience. As a result, the assessors considered 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

Eligibility Criterion met

The Expert Assessors considered this Project to have identified a clear benefit for gas consumers through better and more efficient operations for gas transmission operators, which is expected to result in cost reductions for end consumers. The potential for a net benefit via cost savings was considered to be the primary benefits identified by the Project.

While the Expert Assessors agreed that this Project meets the Eligibility Criteria, they also noted that the Application could have been strengthened by providing more clarity on how benefits could be delivered the gas consumers if the solution is implemented into distribution network strategies.

However, overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion not met

The Expert Assessors did not consider the Project to involve network innovation because the assessors considered the central area of innovation to be in the digitisation of the gas supply chain and its procurement processes, rather than the networks itself. The assessors also considered there to be a lack of clarity surrounding the value proposition to the wider gas networks who may want to adopt this solution, thereby demonstrating in their view limited network innovation. As a result, the Expert Assessors did not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider this Project to be undermining the development of competitive markets because the existing markets for gas transmission assets are very limited and it was noted that, should the Project be successful, it has the potential to promote market access through appropriate procurement channels to its supply chain. The assessors also noted the potential for this to result in the stimulation of competitive markets.

As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion not met

The Expert Assessors did not consider the Project to be innovative and novel because the level of detail in the Application of the digital procurement processes and digital software was considered insufficient to determine the level of innovation, novelty and risk compared to existing digital supply chain solutions that could be procured.

The assessors also considered the proposal to lacked clarity on how the solution would be implemented by the Project Partners or wider industry, including other gas networks, which made it difficult for the assessors to determine the nature of the innovation. However, while it was positively noted that the National Transmission System supply chain is a bespoke service that would duly benefit from a unique investment in ensuring it is fit for purpose into the future, the Project was not considered to be innovative, novel and/or risky.

Overall, the Expert Assessors do not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered this Project to include participation from a sufficient range of stakeholders for this Eligibility Criteria to be met because an appropriate consortium of partners were represented in the Application that all possess the relevant expertise required for the delivery of this Project in the Alpha Phase. The assessors also positively noted the mention of a steering group with other gas network representatives which would be a crucial stepping stone to achieving change in the gas supply chain for the transition to hydrogen and in implementing the proposed solution. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion not met

The Expert Assessors did not consider the Project to be delivering value for money and be costed competitively because they considered the funding requested to not be proportional to the deliverables and prototyping that would be expected at the Alpha Phase. The assessors considered there to be insufficient clarity around the level of SIF Funding requested for the activities set out and the outputs the Project for them to have confidence that it was providing value for money and costed competitively.

The Expert Assessors did see note positively the value in the proposed establishment of a steering group with wider stakeholders which was considered to have the potential to ultimately aid the development of standards and wider requirements needed in the hydrogen supply chain to maximise the benefits to the sector.

However, because the development of the steering group 'Hub' was not considered the aim of the Project, and that the core beneficiary of the proposed solution would

be National gas Transmission without sufficient clarity on its replicability with other gas networks, the Expert Assessors did 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.

Eligibility Criterion not met

The Expert Assessors noted positively the challenge the Project aims to address, however they did not consider the Project’s methodology to be sufficiently robust to provide confidence that it will be capable of progressing in a timely manner in the Alpha Phase. This is because the Application does not clearly articulate its innovation strategy and its detailed delivery roadmap. Without these elements, it was challenging for the Expert Assessors to evaluate the feasibility and potential success of the proposed activities.

The Expert Assessors noted that, as an Alpha Phase Project, they expected the Project to include testing and prototyping of the solution. However, they noted that the Project idea was not yet sufficiently mature for these activities to occur at the Alpha Phase, and they therefore recommended that the Project develop these aspects of the Project more. Therefore, the Expert Assessors did not consider the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

DO NOT FUND

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.

Recommended Project specific conditions
N/A

8.2.5 10080646, NextGen Electrolysis – Wastewater to Green Hydrogen,
Initial Net Funding Requested £295,824

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
WALES & WEST UTILITIES LIMITED	£20,397.00	£2,049.00	£18,348.00
HYDROSTAR EUROPE LTD	£299,016.00	£29,952.00	£269,064.00
NATIONAL GRID ELECTRICITY DISTRIBUTION PLC	£9,348.00	£936.00	£8,412.00

Submitted 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 electrolysers 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the Innovation Challenge as it focuses on the alternative approaches for the production of green hydrogen production for gas networks. This was considered to be directly aligned

with several of the aims of the 'improving energy system resilience and robustness' Innovation Challenge. The assessors noted positively the Project's focus on developing a unique technology for hydrogen production. By focusing on the water requirements of an electrolyser and exploring the use of less conventional sources such as rainwater, storm overflow, and industrial wastewater, the Project was noted to have the potential to reduce the dependency on treated water and enhance network resilience. As a result, the Expert Assessors considered 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

Eligibility Criterion met

The Expert Assessors considered the Project to have clearly identified a net benefit to gas consumers. This was considered to be mainly in the reduction of costs for the production of hydrogen and in greater network resilience. It was also noted that greater hydrogen production could result in carbon emission reductions, thereby delivering environmental benefits for consumers. While it was noted that the benefits are contingent on the development of technology, they considered the net benefits of the proposed solution to consumers to have been clearly set out. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Project was considered to involve network innovation beyond business as usual because it is examining areas of innovation in the gas network to cater to a rising demand and supply of hydrogen. While it was noted that the innovation is mainly in the development of technology rather than network methods, it was nonetheless considered to demonstrate network innovation because, if successful, it could result in innovation in the network. For example, it was noted that the

Project's proposal of multiple hydrogen gas injection points could providing significant network resilience. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Project was considered to not undermine the development of competitive markets because of the infancy of the technology it proposes developing and due to its potential to increase the access to hydrogen generation by multiple actors. It was also noted positively that the identification of strategic networks nodes by the Project for supplying hydrogen to specific areas, as required by networks, could provide enhanced access and result in the development of competitive markets. While one assessor noted that the Project and the technology it proposes development could result in changes to regional competition, it was noted that proposed solution across GB should result in the development of competitive markets. As a result, the Project was considered to have met the Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Project was considered to demonstrate innovation in its approach to hydrogen production, particularly in its exploration of utilizing wastewater instead of conventional high-quality treated water for the electrolysis process. Additionally, its perspective on distributed supply was considered by the Expert Assessors to be a novel element of the Project. The assessors also noted risks within the Project, including in the development of the proposed technologies at the core to the Project and in the variation of wastewater flows which could be presented. As a result, the Expert Assessors considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to involve participation from a sufficient range of stakeholders for the activities set out. Notably, the Project features collaboration with wastewater operators and is further bolstered by the guidance of an advisory board. However, for a holistic perspective on the production and utilization of hydrogen, it was noted that the Project may wish to incorporate organizations from various industries focused on the production and use of hydrogen. However, overall the Project was considered to have met the Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to demonstrate value for money and to be costed competitively. It was acknowledged by one assessor that the potential benefits articulated by the Project outweigh its associated costs, especially when considering the potential wide use of the proposed solution. The Project's overall costs were considered appropriate for the activities set out. The budgeting for the Project was also considered to be aligned with industry standards, and the efficient utilization of existing facilities and assets further was noted positively as demonstrated cost-effectiveness. As a result, the Project was considered 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.

Eligibility Criterion met

The Expert Assessors considered the Project to be thoroughly structured, with a well-laid-out plan detailing the responsibilities assigned to various Project Partners, and a design and which was considered well thought through. While the assessors

noted the risks of the Project, they had confidence in its capability of progressing in a timely manner from its clearly presented methodology, which was considered suitable for the Project's activities. They also considered the approach to be robust and suitably resourced. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

The Project would benefit from a wider focus on a range of electrolyser and water treatment options, rather than choosing to focus on developing one new approach that still has significant technical risk. If the new technology can be better proven, then it could be introduced into a programme like this.

Managing the variation in the waste water feed flow will require careful management. It is not unknown for hydrocarbons to be present. Suitably rated equipment and ATEX designs should be considered.

8.2.6 10083736, Distribution Network Information Modelling (DNIM) - Alpha,
Initial Net Funding Requested £465,329

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
SOUTHERN GAS NETWORKS PLC	£400,040.00	£20,000.00	£380,040.00
WALES & WEST UTILITIES LIMITED	£3,624.00	£-	£3,624.00
NATIONAL GAS TRANSMISSION PLC	£2,220.00	£-	£2,220.00
NORTHERN GAS NETWORKS LIMITED	£3,744.00	£-	£3,744.00
CADENT GAS LIMITED	£4,086.00	£-	£4,086.00
DNV SERVICES UK LIMITED	£85,939.00	£14,324.00	£71,615.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have met the 'improving energy system resilience and robustness' Innovation Challenge because it proposes developing a concept to help gas networks assets to be more digital and, through that, enable more cost effective operations, maintenance and help lay foundation to transition to distributing green gases such as hydrogen. These aspects, if delivered successfully, will help make the gas distributions networks more robust and support its net zero transition. 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

Eligibility Criterion not met

The Expert Assessors did not consider the Project to have met this Eligibility Criteria.

The assessors noted the articulation of large potential benefits in the Application (£75m NPV by 2050) by reducing the time and cost to survey the gas network with minimal excavation works. However, the assessors did not consider the Project's activities and approach to be sufficiently aligned with a realistic pathway to realize these benefits. As a result, the assessors did not consider the Project to have identified potential to deliver a net benefit to consumers.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to be demonstrating network innovation through its use of novel robotics technology to map the gas network, including sensor validation, to support better operations and maintenance of the

gas network. While the assessors noted that these innovative aspects of the Project could have been more clearly set out, this approach was considered to involve network innovation beyond business as usual approaches through this use of robotics to map the gas networks at a more granular level. It was also noted positively that this approach could be utilised to transition the gas network to hydrogen, potentially support a more efficient transition, which they also considered to give confidence that the Project involves network innovation.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion not met

The Expert Assessors did not consider the Project to have sufficiently demonstrated and articulated that it would not undermine competitive markets. The Expert Assessors noted a key concern around the lack of a plan for managing, owning and disseminating the data which would be produced by the Project. The assessors noted that this creates a risk and potential for critical asset information being monopolised and not available for wider gas network and end consumer benefit. As a result, the assessors did not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion not met

The Expert Assessors did not consider the Project to be innovative and novel. While the assessors considered the Project to have a risky scope of proposed activities in the Alpha Phase through its focus of mapping gas networks with innovating across hardware, communication and digital technology, they did not consider its proposed solution or activities to be innovative or novel. Specifically, they did not consider the test design proposed at the Alpha Phase to be innovative or novel. As a result, the Expert Assessors did not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to have participation from a sufficient range of stakeholders for the activities set out for the Alpha Phase. They noted that the Project has wide range of gas networks participating, which they considered to be broadly aligned to the Project's proposed solution and the activities set out. However, the Expert Assessors also noted that this could have been strengthened by considering more external and non-gas network stakeholders and with additional consideration for the dissemination of findings to key stakeholders beyond gas networks. Overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion not met

The Expert Assessors did not consider the Project to provide value for money or to be costed competitively for the Alpha Phase. The assessors noted that the Project had not sufficiently considered and articulated its approach data management and ownership strategy, which they considered to be a significant risk to the Project progressing at the Alpha Phase. This did not providing the assessors with confidence that the Project costs were reasonable and costed competitively.

Additionally, the assessors noted that Project's proposed approach of network testing in the US was primarily technology-focused, which they considered to limit the value of insights and data quality to support decision making in live GB networks. This also did not give confidence that the Project's costs were providing value for money and costed competitively.

As a result, the Expert Assessors did 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.

Eligibility Criterion not met

The Expert Assessors did not consider the Project to have demonstrated a well thought through method and Project plan. The assessors noted that the Project did not clearly identified key risks and barriers to develop and roll out the solution, which did not confidence in its likely timely progression. The assessors also considered this clarity to render the Project's research plan less effective and noted that key details, such as developing technical and commercial success factors, were missing. The assessors also highlighted that the lack of a coherent and robust data ownership and management strategy at this stage of the Project was a significant concern and resulted in them not having confidence that it would be capable of progressing in a timely manner. As a result, the Project was not considered to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

DO NOT FUND

The Expert Assessors considered the Project 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.

Recommended Project specific conditions

N/A

8.2.7 10084569, SF6 Whole Life Strategy, Initial Net Funding Requested
£403,311

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
National Grid Electricity Transmission PLC	£136,888.00	£44,813.00	£92,075.00
THE UNIVERSITY OF MANCHESTER	£170,280.00	£-	£170,280.00
DNV SERVICES UK LIMITED	£104,780.00	£-	£104,780.00
DILO ARMATUREN UND ANLAGEN GMBH	£18,200.00	£-	£18,200.00
SCOTTISH HYDRO ELECTRIC TRANSMISSION PLC	£17,976.00	£-	£17,976.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the goals of the Innovation Challenge. The Project aims to enhance system resilience as SF6 is phased out, by developing techniques to mitigate impacts, studying reduced use of SF6 blends, and exploring methods to lessen the environmental impact of SF6 disposal. This was considered to be directly aligned with one of the aims of the Innovation Challenge, which is to improve understanding of robustness in future energy system configurations and develop solutions to improve and strengthen it. It was noted that the Project's proposed solution could support the efficient role out of new infrastructure, which could strengthen the resilience and robustness of the energy system. As a result, the Expert Assessors considered the Project 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

Eligibility Criterion met

The Expert Assessors considered the Project to have clearly demonstrated net potential benefits to electricity consumers via environmental and consumer benefits. The assessors noted that the Project has provided a clear NPV of the potential benefits to electricity consumers, that the Project has the potential to provide robust evidence for low carbon alternatives, and to better manage existing SF6 substations. It was also noted that the outcomes of the Project could have a direct influence on electricity networks' investment decisions regarding the equipment they employ in their operations, which could lead to greater benefits. As a result, the assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Project was considered to provide a comprehensive approach to the challenges associated with SF6 because it explores the replacement of SF6 and its potential disposal, reutilization, and strategic roll-out across electricity networks. This combined focus was considered to be beyond business as usual approaches to SF6 replacement. The emphasis on obtaining robust evidence and honing techniques for managing SF6 in substations was also considered to demonstrate network innovation beyond business as usual approaches as new solutions are needed given the phasing out of SF6. As a result, the Expert Assessors considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider the Project to undermine the development of competitive markets. This is because the Project aims to foster an enabling environment for the improved utilization and disposal of SF6 and its alternatives. The assessors noted that there is competition among providers of alternatives to SF6 equipment and that this Project and its proposed solution do not undermine the development of competitive markets but favouring any particular solution or provider. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Project was considered to be innovative, novel, and to involve elements of risk. The Project was considered distinct in its approach to the SF6 challenge, given that it looks at the issue holistically, covering both the replacement and disposal aspects. This was considered to be innovative. Its uniqueness and novelty was considered to be in its approach to providing the industry with a robust evidence

case for SF6 alternatives and disposal, as it was noted that the industry currently lacks concrete evidence to guide site-specific decision-making processes concerning SF6 impacts. The assessors also noted that while there might have been other SF6-related projects in the past, this Project distinguishes itself by focusing on the entire life cycle, building upon the foundational knowledge from previous research. As a result, the Project was considered to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Project was considered to have comprehensive stakeholder engagement and sufficient participation for the activities set out. All critical stakeholders are clearly outlined and in a way which set outs active participation from the Project Partners and stakeholders. The assessors considered the Project team to have sufficient expertise and skills, ensuring that the various facets and challenges of the initiative will be addressed. While one assessor noted that the Project might benefit from expanding its stakeholder engagement even further in the Alpha Phase, they also considered the Project's existing team to have sufficient participation for the activities set out. As a result, the Expert Assessors considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to have clearly set out a value for money approach which is costed competitively. It was noted that the Project costs are reasonable, with day rates within acceptable bounds for professional and academic endeavours. It was also noted positively that the Project represents the potential for significant benefits to consumers and networks, which they considered to demonstrate additional assurance that the Project is providing value for money.

This was also noted when considered against alternative approaches outlined. As a result, 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.

Eligibility Criterion met

The Project was considered to display a robust methodology that gives confidence that it will be capable of timely progression. The approach and proposed solution were considered to be broken down into clear and relevant sub-problems, which the Expert Assessors noted positively. It was also noted that the granularity of the steps and clear ownership of deliverables gives confidence in the Project's likely progression. The distinct questions set out by the Project was also noted positively as a way for the Project to focus its activity in the Alpha Phase. As a result, the Expert Assessors considered the Project to have met the Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities. The Project has also identified the potential for impacts from decisions by the European Council and European Parliament which impact the Project and have included work packages in the Alpha Phase to actively monitor advancements. However, for the Alpha Phase, no regulatory barriers were specifically identified.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

N/A

8.2.8 10085883, REWIRE (REsidential Whole System Integrated REsilience),
Initial Net Funding Requested £498,147

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
CORNWALL INSIGHT LTD	£96,700.00	£9,670.00	£87,030.00
NATIONAL GRID ELECTRICITY SYSTEM OPERATOR LIMITED	£10,330.00	£2,066.00	£8,264.00
SUSTAINABILITY FIRST	£28,350.00	£-	£28,350.00
IMPERIAL COLLEGE LONDON	£106,200.00	£12,750.00	£93,450.00
ELECTRICITY NORTH WEST LIMITED	£56,540.00	£5,654.00	£50,886.00
NORTHERN GAS NETWORKS LIMITED	£7,884.00	£790.00	£7,094.00
THE FIRST ELEMENT GROUP LTD	£46,200.00	£13,860.00	£32,340.00
FRAZER-NASH CONSULTANCY LIMITED	£212,408.00	£21,675.00	£190,733.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered this Project to have addressed the Innovation Challenge because it aims to create distributed energy asset and storage opportunities in a way which will increase resilience of critical energy services.

The Project was considered to have the potential to improve energy system resilience and robustness through the utilisation of multiple energy systems to support the decentralisation of generation for domestic customers. This is aligned with the theme focused on developing novel approaches to improving resilience. As a result, the Expert Assessors considered the Eligibility Criteria to be met.

Eligibility Criterion 2:

Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers

Eligibility Criterion not met

The Expert Assessors did not consider the Project to have met the Eligibility Criteria because it has not clearly defined a potential to deliver a net benefit to electricity consumers. The Expert Assessors considered the Project's scope to be too broad and there was uncertainty around what the product is and how it would be implemented.

The Expert Assessors considered the Project to really be a technological and economic viability exercise, and it left them uncertain as to whether it will deliver any tangible products or services to the consumers. It was noted by the assessors that there was optimism around domestic customers in terms of regulatory change requirements required for this Project to be a success. However, overall, the Expert Assessors considered the Project to not have met Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to involve network innovation. The innovation is considered to be in the Project's concept of a system that is consumer owned and behind the meter, and which provides hydrogen back onto the network at times of low demand. The assessors noted network innovation in this approach and noted its potential to be a diversified solution to provide reliable power and that, should the proposed solution be successful, it could lead to the load on the gas network decreasing through the use of local hydrogen supply. The benefits for the network would be operational and cost savings. Overall, the Expert Assessors considered this Eligibility Criteria to be met.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

Overall, the Expert Assessors did not consider this Project to be undermining the development of competitive markets because there is not currently a market within these technology solutions can be monetised. The assessors noted positively that, should the Project be successful, it result in the development of new competitive markets from the Project's proposed solution. This was noted specifically for the Project's local power to gas technologies. As a result, the Expert Assessors considered this Eligibility Criteria to be met.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative and risky because it proposed the development of edge of the network technology, which the assessors considered novel and innovative. The Project is considered risky in that there are a number of unknowns for the Project to navigate, including how the technology would work, the regulatory framework that would support it and policy factors. The assessors also noted that the technology being consumer adds additional

challenges from both a regulatory and technical point of view. Overall, the Expert Assessors considered this Eligibility Criteria to be met.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion not met

The Expert Assessors considered the Project to not have participation from a sufficient range of stakeholders for the activities set out. The assessors noted that while the Partner requirements of the Innovation Challenge had been met, the Project team had not involved a product developer and there were no plans to onboard one in the Alpha Phase. This raised questions from the assessors around when the detailed design would take place. Additionally, there was no involvement of an aggregator to act as the intermediary in order to facilitate market level transactions. This was considered an oversight as it is not possible for the consumer to interact with the network operator directly. The omission of these two key stakeholders in the Project were considered significant enough for the Expert Assessors to not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion not met

The Expert Assessors did not consider the Project to be delivering value for money and costed competitively. This is because the costs of the Project were considered high for the proposed solution and the overall outputs. The assessors noted that the Project would require a very specialised skillset to deliver the proposed solution given its ambitious nature and inherent challenges, and the Expert Assessors were not confident that the Project had requisite skillset as part of the Project consortium. As a result, they did not consider the Project's costs to be reasonable.

Additionally, in interview aspect of the assessment, there were uncertainties and a lack of clarity to around the Project's total costs and the costs set out, which did not give the assessors confidence that the Project was costed competitively.

Overall, the Expert Assessors did not have confidence that the Project's costs and approach provided value for money and were costed competitively. They therefore did 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.

Eligibility Criterion met

The Expert Assessors considered the Project to have demonstrated a robust methodology which gave them confidence that the Project would be capable of progressing in a timely manner. The Project team gave reasonable confidence to the assessors of the Project's likely timely progression with a clear presentation of the methodology the Project would use and a relatively straightforward Gantt chart to demonstrate execution of the project. The assessors noted the documentation provided by the Project was set out clearly and demonstrated a well thought through approach. While the assessors noted that some aspects of the Project's activities were more closely aligned with those of a Discovery Phase Project due to the Project's continuation of feasibility research rather than solution design, they considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

DO NOT FUND

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.

Recommended Project specific conditions
N/A

8.2.9 10078787, Scenarios for Extreme Events, Initial Net Funding
Requested £457,899

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
NATIONAL GRID ELECTRICITY SYSTEM OPERATOR LIMITED	£78,158.00	£7,816.00	£70,342.00
SCOTTISH HYDRO ELECTRIC TRANSMISSION PLC	£4,838.00	£484.00	£4,354.00
UNIVERSITY OF STRATHCLYDE	£97,328.00	£9,923.00	£87,405.00
MET OFFICE	£75,972.00	£8,089.00	£67,883.00
FRAZER-NASH CONSULTANCY LIMITED	£243,206.00	£24,321.00	£218,885.00
CADENT GAS LIMITED	£4,500.00	£450.00	£4,050.00
NATIONAL GAS TRANSMISSION PLC	£4,980.00	£-	£4,980.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the Innovation Challenge because of its focus on steering the GB energy networks towards enhancing its preparedness capabilities. This was considered to be directly aligned with several of the aims of the Innovation Challenge, including improving the understanding of robustness in future energy system configurations and developing solutions to improve and strengthen it. The assessors noted the timeliness of the Project and its approach of scenario modelling, given the escalating impacts of climate change and the increasingly interwoven nature of the GB infrastructure networks. As a result, the Expert Assessors considered 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

Eligibility Criterion met

The Expert Assessors considered the Project to have identified potential to deliver a net benefit to both gas and electricity consumers. This was considered to be through better network planning, which would result in increased network resilience, thereby reducing down time following an event with the network and reducing the remedial costs for consumers. The benefits articulated would therefore be social benefits and financial benefits. While some of the Expert Assessors noted the difficulties in quantifying the overall potential benefits of Project for consumers at this stage of the Project, they all considered the Project to have clearly articulated its hypothesis and approach, and considered the Project

to have identified potentially substantial benefits to consumers. As a result, they considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to involve network innovation because of its approach to modelling the interactions between all aspects of the GB energy system, as well as the significant interdependencies with other utilities. This approach was considered to go beyond business as usual approaches because it was considered to represent a potential improvement on current approaches and its scope could reduce the degree of siloed thinking between stakeholders. This was considered to represent the potential to improve resilience planning across the network to benefit consumers. While it was noted that greater details on this approach would have strengthened the Application, the Expert Assessors all considered the Project to involve network innovation.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider the Project to undermine the development of competitive markets because the Project has communicated that prototype model and future developments of it will be owned by the Future System Operator and therefore do not present any opportunities to undermine competitive markets. It was also noted that the modelling capability of the proposed solution does not favour specific solutions or businesses, which would result in there being a undermining of competitive markets or solutions. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative and novel with elements of risk. It was considered innovative and novel because it represents the application of new methods to an industry problem through its focus on identifying and assessing the impact of High Impact, Low Probability events on the GB energy networks. It was also noted that the Project's proposed solution will likely require the development of a new model, representing potential scenarios not previously considered in detail by network planners and operators, which was considered to be novel and risky. Overall, the assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Project was considered by the majority of the Expert Assessors to have participation from a sufficient range of stakeholders for the Alpha Phase activities. It was noted positively that there is a mix of organisations with relevant expertise spanning academia, the Met Office and a consultancy. One Expert Assessor noted that the withdrawal of a DNO from the Project following the Discovery Phase has weakened the Project group as it no longer wholly represents GB energy networks. A Project-specific condition has been recommended for the Project to examine participation from a DNO as part of its Alpha Phase activities to help mitigate this risk.

However, overall, the majority of the Expert Assessors considered the Project to have sufficient participation for the activities set out.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to be providing value for money and to be costed competitively. While they noted that greater details on the day rates

of Project Partners would have strengthened the Application, they also noted that the overall costs associated with labour and for the Project as a whole were within expectations and comparable to industry norms. The assessors also noted that the Project has the potential to deliver benefits to consumers which outweigh the costs of the Project, which they considered to provide further confidence that the Project is providing value for money. As a result, 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.

Eligibility Criterion met

The Expert Assessors considered the Project's Application and its Project plan to be clearly set out and well planned and structured. They noted positively that there is a robust and suitable methodology in place, which they considered credible for the activities set out. The assessors all noted that the Project's approach and materials give confidence that it will be capable of progressing in a timely manner. As a result, the assessors considered the Project to have met the Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

There are a few areas where some additional questioning might be useful:

- Clarity around the specific circumstances in which networks will use 'anticipatory' assessments.
- Comparison of the proposed methods to existing heuristics, rather than comparing the project to 'uninformed decision-making'. What kind of insights do we expect the model to deliver that human experts cannot currently realise?
- Clarity around exactly how this project avoids duplicating other resilience modelling projects (CReDo, WELLNESS, etc.).
- Breakdown of the unit costs used to calculate consultant fees.
- Specifics concerning the technology that will be deployed as part of the pilot, and how it will be hosted/maintained/supported thereafter.

- Reassurance that the raw data necessary to run the pilot is available and of sufficient quality.

The Project needs to ensure it has access to the necessary DNO expertise in order to both ensure its quality level is sufficient (representation of the impacts of HILP events on the network) and has buy in from those networks when it comes to resilience planning as a result of using the model.

A better explanation of how interdependencies with other infrastructure networks will be explored and catered for in the prototype model is required. If this is not to be tackled in Alpha, then there should be a clearer statement of how the prototype model will evolve during Beta and into BAU to ensure this is tackled.

8.2.10 10079059, Digital Inspector, Initial Net Funding Requested £309,790

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
CADENT GAS LIMITED	£16,692.00	£1,670.00	£15,022.00
UNITED LIVING GROUP LIMITED	£52,929.00	£5,293.00	£47,636.00
NATIONAL GAS TRANSMISSION PLC	£4,980.00	£-	£4,980.00
TRITON ELECTRONICS LIMITED	£106,424.00	£10,642.00	£95,782.00
TWI LIMITED	£162,784.00	£16,414.00	£146,370.00

Submitted 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).

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the Innovation Challenge because it was considered to have the potential to provide a more robust resilient gas system through a reduction in problematic welds, which was considered to have the potential to enhance the capability and support the development of more robust gas infrastructure. This was considered to be aligned with one of the Innovation Challenge's aims, which is to incorporate resilience and robustness as key and measurable considerations into future multi-energy system design. The assessors considered the Project's proposed solution to have the potential to accelerate infrastructure construction, thereby delivering more rapid delivery of infrastructure projects. As a result, the assessors considered 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

Eligibility Criterion met

The Expert Assessors considered the Project to have met identified a potential to deliver a net benefit to gas consumers as it has identified the potential to deliver cost benefits to network companies through a reduction in the need of weld repairs, which would then be passed onto consumers. It was also noted that the Project's proposed solution could also decrease gas outages, thereby resulting in benefits for consumers from a more resilient gas network. The assessors noted positively the clear cost benefit analysis, with significant Net Present Value presented. As a result, the assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to involve network innovation because its proposed solution is a digitised method of knowledge exchange for welding in the gas sector, an approach which has not been attempted in the

sector. The real-time data approach the solution could provide on gas welding was considered a key aspect of this Project's network innovation and the assessors therefore considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider the Project to undermine the development of competitive markets because the Project has communicated its intent to make its proposed solution an open standard, which any company could adhere to. It was also noted that the proposed solution could also help to stimulate additional or new competitive markets through the use and methods of welding firms to provide quality assurance. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative, novel and risky. It was considered innovative and novel because it proposes the creation of a knowledge exchange platform throughout the supply chain which has not been attempted by the gas sector. This aspect of using a cloud based platform for welding monitoring was considered to be a novel and innovative with elements of risk because it had not been attempted previously. As a result the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to have met this Eligibility Criteria because the Project team cover different elements throughout the supply chain

that would use the system should it progress into business as usual. It was also noted positively that the Project team covers expertise in all aspects of the proposed solution, including hardware, software, cloud development, and a route to develop international standards. The assessors also noted positively the Project's plan to engage wider industry. As a result, the Expert Assessors considered the Project to have participation from a sufficient range of stakeholders for this activities set out and considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to be providing value for money and to be costed competitively because the Project's costs and budgets are reasonable for the activities set out and are aligned with industry norms. The assessors also considered the Project to have requested a reasonable amount of SIF Funding for the activities set out. While it was noted that greater details on the subcontractor elements of the Project would have strengthened the Application, the assessors overall 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.

Eligibility Criterion met

The Expert Assessors considered the Project to have a robust methodology which gives confidence that it will be capable of progressing in a timely manner because the level of detail in the Project was considered sufficient and the Project has sufficiently identified the main risks to the Project. They also noted positively the Project's approach to include multiple field tests and the integration of numerous software into the proposed solution, which they considered to de-risk elements of

the Project. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

More detail should be provided on the subcontractor element of the Project. There is a significant level of public funding being asked for to award to a subcontractor, and there is little detail online about the company itself, its history or current activities.

I remain somewhat unconfident about the exact scope of this work and what it is about the data monitoring that will result in deeper insights about welding performance in 'real-time' as the Project team desire. The Project team could have greatly improved their explanation about their planned solution.

I think this uncertainty can be tolerated for the Alpha Phase, but I strongly recommend that the work on refining and clarifying their proposition - diagrams/imagery would help. Descriptions such as included here would not meet my expectations for a Beta Phase Project.

8.2.11 10079341, Hydrogen Cost Reduction (HyCoRe), Initial Net Funding Requested £499,787

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
NORTHERN GAS NETWORKS LIMITED	£11,759.00	£1,069.00	£10,690.00
CARBON TRUST ADVISORY LIMITED	£3,001.00	£3,000.00	£1.00
KINEWELL ENERGY LTD	£90,600.00	£10,000.00	£80,600.00
NORTHERN POWERGRID (NORTHEAST) LIMITED	£2,001.00	£2,000.00	£1.00
OVE ARUP & PARTNERS LIMITED	£182,766.00	£18,277.00	£164,489.00
NEWCASTLE UNIVERSITY	£25,168.00	£-	£25,168.00
UNASYS LIMITED	£74,900.00	£30,000.00	£44,900.00
LHYFE UK LTD	£4,001.00	£4,000.00	£1.00
OFFSHORE RENEWABLE ENERGY CATAPULT	£193,957.00	£25,000.00	£168,957.00
NATIONAL GAS TRANSMISSION PLC	£4,980.00	£-	£4,980.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the Innovation Challenge because it focuses on the supply of green hydrogen by existing gas networks and the role of hydrogen in supporting grid decarbonisation. It was considered to be aligned with one of the aims of the Innovation Challenge, which is to improve the understanding of robustness in future energy system configurations and develop solutions to improve and strengthen it. As a result, the Expert Assessors considered 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

Eligibility Criterion met

The Expert Assessors considered the Project to have identified potential to deliver a net benefit to gas consumers as well as electricity consumers. It was noted that the Project is examining the lowest cost of decarbonisation through utilising otherwise curtailed offshore wind energy. This could result in offshore wind farms

being used to provide renewable energy, which was considered to have the potential to deliver financial and environmental benefits to consumers. It was noted that this approach could benefit both gas consumers and electricity consumers as the proposed solution could increase the cohesion between the gas and electricity networks, thereby reducing the need for curtailment payments. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:
Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to involve network innovation because it was noted that the proposed solution would require the gas network to innovate in order to accept increased amounts of hydrogen gas in the network. It was noted that the proposed solution would also likely involve regulatory innovation, should the Project progress to business as usual. While it was noted by one assessor that greater detail on the network innovation would have strengthened the Application, it was also noted by this assessor that the proposed solution's focus on development of a hydrogen production and connection strategy in areas of electricity constraints was considered to involve network innovation. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

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

Eligibility Criterion met

The Expert Assessors did not consider the Project to undermine the development of competitive markets because they did not consider the proposed solution to favour any particular businesses or solutions. Instead, the assessors noted the potential for the Project to stimulate additional competition by owners of offshore wind farms who would normally be curtailed. Furthermore, the proposed solution

proposes the development of a strategy for the industry to deploy, which they did not consider to undermine the development of competitive markets. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative and novel in its proposed development of national modelling and in its focus on developing and deploying technologies which convert wind energy to green hydrogen in areas of constraint. It was noted that the proposed strategy the Project plans to develop would also be innovative as the industry currently does not have a cohesive strategy. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to have participation from a sufficient range of stakeholders involved for the activities set out. They noted positively the wide range of stakeholders involved in the Project and the Project's focus on dissemination to the wider industry as an important aspect of ensuring the proposed solution can be deployed. While one assessor noted that involvement of a UK academic institution would have strengthened the Application, all the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to provide value for money and to be costed competitively because the Project's overall costs were considered

appropriated for the activities set out. The Project's overall costs were considered aligned with industry norms, which gave confidence that the Project is providing value for money and is costed competitively. As a result, 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.

Eligibility Criterion met

The assessors considered the Project plan to be reasonable and detailed, and noted positively the approach to Project management. It was also noted that Project's methodology has a clear plan behind it, with organisations involved that the relevant knowledge and expertise. As a result, the assessors had confidence that the Project would be capable of progressing in a timely manner.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

It may have been useful for the Project to focus on two demonstrators/case studies with diverse onshore industry needs. This could have identified some place based differences more clearly.

I would recommend that the team also look at research currently ongoing in the UK academic community and leverage that.

Recommendations would be to be clearer on how ongoing deployment and use of the strategy will be maintained with industry given the commercial nature of the tool set as well as seeking to link it more with the business case for offtake of H2 rather than the opportunity to produce it.

8.2.12 10084557, Whole Energy System Resilience Vulnerability Assessment (WELLNESS), Initial Net Funding Requested £471,725

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
NATIONAL GRID ELECTRICITY TRANSMISSION PLC	£84,892.00	£29,892.00	£55,000.00
UNIVERSITY OF CYPRUS	£34,600.00	£4,600.00	£30,000.00
IMPERIAL COLLEGE LONDON	£93,000.00	£13,000.00	£80,000.00
OVE ARUP & PARTNERS LIMITED	£179,040.00	£9,040.00	£170,000.00
ELECTRICITY NORTH WEST LIMITED	£40,806.00	£4,081.00	£36,725.00
THE UNIVERSITY OF MANCHESTER	£111,660.00	£11,660.00	£100,000.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the Innovation Challenge because its proposed solution is focused on developing the evidence to support investment in electricity networks which consider whole-system prioritisation and response planning. This was considered to be directly aligned with the Innovation Challenge and its aims, particularly around the aim of improving the understanding of robustness in future energy system configurations and developing solutions to improve and strengthen it. As a result, the Expert Assessors considered 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

Eligibility Criterion met

The Expert Assessors considered the Project to have identified a clear potential to deliver a net benefit to electricity consumers by targeting a reduction in inefficiencies and delays related to network reinforcement and emergency response activities. This was considered to involve primarily financial and social benefits as the proposed solution could incorporate resiliency into the assessment of network investments and it could result in a more flexible system, which could reduce costs and improve overall network quality for consumers. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to have met this Eligibility Criteria because it proposes the development of new technologies, methods and tools which would support the electricity network in being more robust and resilient in its decision making. While one assessor noted that greater details on the outputs

would have strengthened the Application, they noted that the Project's approach would likely result in new network innovations. Overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider the Project to undermine the development of competitive markets because the Project is primarily focused on improving regulatory decisions, which would not undermine any current or future competitive markets. It was noted that the Project could stimulate innovation towards more resilient energy solutions, potentially resulting in the development of new competitive markets. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to have met this Eligibility Criteria because the Project's proposed solution was considered innovative and novel because it is exploring an area of innovation within resilience which has not been sufficiently explored. It was also noted that the Project's breadth and scope, combined with its intention to knit together the planning and resilience assessment frameworks across networks and regions, is innovative and novel.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to include participation from a sufficient range of stakeholders for the activities set out because it involves a mix of several different stakeholders, including academia and consultancies. All the

Expert Assessors positively viewed the stakeholder mix. As a result, they considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to overall be providing value for money and to be costed competitively. While it was noted that the consultancy Project Partner is receiving a large amount of the SIF Funding, their costs and those of the other Project Partners were considered to be aligned with industry norms. The assessors also considered the Project’s overall costs to be reasonable and to give confidence that the Project is providing value for money. As a result, the Project was considered 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.

Eligibility Criterion met

The Expert Assessors considered the Project to overall have a robust methodology which gives confidence in its capability of progressing in a timely manner. While it was noted that the Application would have been strengthened with greater detail on how the proposed tool would be integrated from the Project’s different work packages, the work packages were also considered reasonable and clear. Overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

The Project should scope out specifically what the components of their work are, how those components are innovative, and how they will be delivered as a single cohesive offering within the time and budget available.

8.2.13 10085005, Looking-Glass - Alpha, Initial Net Funding Requested
£475,136

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
SOUTHERN GAS NETWORKS PLC	£20,040.00	£-	£20,040.00
NATIONAL GAS TRANSMISSION PLC	£2,220.00	£-	£2,220.00
NORTHERN GAS NETWORKS LIMITED	£3,744.00	£-	£3,744.00
DELTAFLARE LIMITED	£581,000.00	£145,250.00	£435,750.00
UNIVERSITY OF STRATHCLYDE	£14,868.00	£1,487.00	£13,381.00
UK MOD	£1.00	£-	£1.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered this Project to have addressed the Innovation Challenge because cyber-attacks pose a significant threat to network resilience across various industries, and the energy sector is no exception. The Project aims to deliver substantial value to the industry by ensuring the secure operation of energy systems for the future. The Project seeks to develop new cyber security tools bespoke for the UK sector which represents innovation that aligns directly with the aims of the Innovation Challenge. The Expert Assessors therefore considered 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

Eligibility Criterion not met

The Expert Assessors did not consider the Project to have met this Eligibility Criteria because it has not clearly identified a potential to deliver a net benefit to gas consumers. The Expert Assessors considered the Application to have only articulated some of the benefits of more robust cyber-security systems to the energy networks, however, the assessors did not consider there to be sufficient articulation of how it could result in a net benefit to consumers. As a result, the Expert Assessors do not consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered this Project to involve network innovation because it plans to develop a novel 'calculator engine' that can be applied innovatively to operational processes on the network to address cybersecurity

risks. This development of the tool and its application across networks was considered to involve network innovation beyond business-as-usual approaches.

Although all assessors were in agreement that the Application demonstrates network innovation, more clarity around the specific aspects that are solely innovative to the energy networks in terms of adoption and implementation would have strengthened the Application. However, overall, the Expert Assessors considered this Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Project clearly articulates how it plans to develop and publish the code for the core 'calculator engine' to benefit the wider energy network industry. The Expert Assessors did not consider this to be undermining the development of competitive markets because the publication of this open-source solution and supporting material was considered to have the potential to aid the wider market to develop more intuitive and robust solutions to their cyber-security needs. The Expert Assessors therefore consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative, novel and risky because its approach in the development of tools is innovative and novel. They also noted that Project has elements of risk in its proposed solution of adoption, but also that the Project clearly outlines the risks associated with further development of the innovation. In addition, the assessors noted that the use of the latest AI tools, such as large language models, in its proposed solution also demonstrates novelty and innovation. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project Partners to be sufficient for the Project because it includes participation from a range of relevant stakeholders to the proposed solution and the activities set out, including the Ministry of Defence, which was positively noted by the assessors. Although all assessors agreed that the Project met the Eligibility Criteria, they noted that the application could have been strengthened through engagement with external cybersecurity expertise for the delivery and implementation of this Project. However, overall, the Expert Assessors considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to be delivering value for money because they considered the proposition to be noteworthy, considering the substantial amount of work which would be required to deliver the proposed solution involving multiple stakeholders. They noted the potential benefits of the proposed solution are greater than the costs of the Project.

The assessors also noted that the Project's approach utilizes existing resources efficiently, which was considered as providing assurance that the Project's costs are competitive. The Expert Assessors therefore 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.

Eligibility Criterion met

The Expert Assessors considered the Project to have a robust methodology which gives confidence to the Expert Assessors that it will be capable of progressing in a

timely manner because the appendices accompanying the Application present a comprehensive delivery Gantt chart and a well-defined methodology.

The Assessors also considered that these documents outline a clear and structured plan for accomplishing the Project's Alpha Phase activities. The Gantt chart visually illustrates the timeline and dependencies of various tasks, ensuring efficient project management and timely completion. Additionally, the methodology describes the step-by-step approach that will be followed to achieve the desired outcome. This detailed planning and methodology provided confidence to the Expert Assessors that the Project is prepared and has a clear path towards timely progress in the Alpha Phase.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

DO NOT FUND

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.

Recommended Project specific conditions
N/A

8.2.14 10085783, WARN - Weather Alerts and Risk analysis for Network operators, Initial Net Funding Requested £469,197

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
UNIVERSITY OF READING	£428,036.00	£43,000.00	£385,036.00
SCOTTISH HYDRO ELECTRIC POWER DISTRIBUTION PLC	£11,012.00	£1,101.00	£9,911.00
UK POWER NETWORKS (OPERATIONS) LIMITED	£84,250.00	£10,000.00	£74,250.00

Submitted 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 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have met this Eligibility Criteria as the Project was considered to have directly addressed the Innovation Challenge

because it demonstrates the potential to improve network planning and response in the event of severe weather events or cumulative weather related asset degradation. This was considered to be related to one of the aims of the Innovation Challenge, which is to incorporate resilience and robustness as key and measurable considerations into future multi-energy system design. This was considered to have the potential to enhance network resilience and reduce costs for electricity consumers. As a result, the Expert Assessors considered 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

Eligibility Criterion met

The Expert Assessors considered the Project to have identified a potential to deliver a net benefit to electricity consumers as it could improve DNO response to extreme and cumulative weather effects and could therefore reduce DNO operational costs while reducing consumer interruptions. This was considered to have the potential to deliver a financial benefit through cost reductions to consumers. The assessors also noted that the Project could help develop a better understanding of asset planning for replacements, which could help to increase network robustness going forward. While one assessor noted that greater details on how the DNOs could implement the proposed solution would have strengthened the Application, the assessors all considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to involve network innovation because it is examining the effects of weather on distribution network operations and using historic and current network asset information together with weather data to better predict network performance and guide interventions. While it was

noted by one assessor that greater details on how it would be implemented and how it goes beyond existing asset management functionalities would have strengthened the Application, the assessors all considered the Project to have met this Eligibility Criteria. It was noted that, should the Project be successful at the Alpha Phase, it could lead to innovate methods for preventative maintenance and asset replacement, as well as guiding more efficient network management.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors considered the Project to not undermine the development of competitive markets because it was noted that the approach proposed would not limit other models or approaches from being developed. It was also noted that the proposed solution would be available to be licensed and that the Project has committed to disseminating its outputs widely, gives confidence that the Project will not undermine the development of competitive markets. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative and novel because of its use of historic network data combined with weather data to enable network faults to be anticipated and mitigated. The Project's approach was considered innovative in its depth and its time window, considering multiple time horizons and the potential for compounding effects. One assessor noted that greater clarity in the Application on the innovative nature of the Project would have strengthened the Application, but also considered the approach and tools proposed by the Project to be innovative and novel. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to have participation from a sufficient range of stakeholders for the activities set out. While it was noted that the Project team is small, the mix of the Funding Party, academia and consultancy was considered appropriate for the Alpha Phase. The assessors noted positively the addition of another network as part of the Alpha Phase, as it could provide different geographies and user experience to the mix. Overall, the assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project's overall costs to be reasonable and to provide value for money. The Project costs for each of the Project Partners were considered appropriate for their role and the day rates were considered to offer value for money against industry norms. It was noted positively that the Project plans to make use of existing and pre-funded software. As a result, the Expert Assessors 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.

Eligibility Criterion met

The majority of the Expert Assessors considered the Project to have met this Eligibility Criteria. They considered the Project to be well planned with a robust methodology and to have an appropriate Project management governance process to give confidence that the Project will be capable of progressing in a timely manner.

One assessor noted that the Project should have provided greater clarity on the Project's approach to the Alpha Phase and how the Project will ensure the development of its proposed solution will be capable of incorporating a sufficient level of detail should it progress into business as usual. This Expert Assessor have recommended a Project-specific condition to help to mitigate this risk.

Overall, however, the majority of the Expert Assessors considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

A coherent Project, but one that lacks a clear methodology or user base (at least in the materials provided).

Recommend that the Project assesses the availability of the required datasets (when known) across other DNOs during Alpha Phase. This will validate the possibility of scaling beyond UKPN/SSEN in future.

Recommend the approach to validating the proof-of concept, and hence the CBA is explored with the Project team as the application is a little light on detail in this area.

8.2.15 10085944, Trinity, Initial Net Funding Requested £499,545

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
UK POWER NETWORKS (OPERATIONS) LIMITED (SPN)	£171,880.00	£17,188.00	£154,692.00
UNIVERSITY OF STRATHCLYDE	£107,213.00	£10,721.00	£96,492.00
DIGITAL CATAPULT SERVICES LIMITED	£36,006.00	£3,606.00	£32,400.00
SCOTTISH HYDRO ELECTRIC POWER DISTRIBUTION PLC	£11,912.00	£1,191.00	£10,721.00
GE DIGITAL UK LIMITED	£230,740.00	£25,500.00	£205,240.00

Submitted 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. Trinity has the potential to improve the service for customers increasingly reliant on electricity networks.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the Innovation Challenge because it aims to improve system resilience and provide for more and faster adaptability of DNO control rooms in the transition to net zero. This was considered to be directly aligned with the aims of the Innovation Challenge as it could support increased network robustness in an inherently complex landscape with more technologies connecting to the network and in response to network events such as faults. As a result, the Expert Assessors considered 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

Eligibility Criterion met

The Expert Assessors considered the Project to have identified a potential to deliver a net benefit to electricity consumers through the rapid transition of DNO control rooms in response to the changing shape of and demands on the electricity networks. The main benefit identified was considered to be from the streamlining of the complex net zero energy system operation, which could lead to more affordable of electricity delivery for electricity consumers. The assessors noted that the benefits identified could also be amplified if there was widespread adoption of the proposed solution across GB DNOs. As a result, the assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to involve network innovation because it has the potential to change the way in which new ideas, technologies and processes are introduced to DNO control rooms, as well as enhancing training

for personnel. This new approach to managing control rooms was considered to involve network innovation beyond business as usual approaches as it could underpin rapid adaption of the controls and operation of networks in the facing of increasing electricity demand and changing demand profiles. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors considered the Project to not be undermining the development of competitive markets because the Project is focused on building on existing infrastructure and toolsets already in operation in the majority of the DNO control rooms. As a result, the Project's proposed focus and its proposed solution were not considered to undermine the development of competitive markets.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Project was considered to be innovative and novel because the Project's proposal of developing a digital twin of this nature is not something which is currently in any DNO control rooms at the moment. The collaboration of the stakeholders in the Project was also viewed positively as an innovative mix which is well positioned to deliver the innovative Project. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to have participation from a suitable range of stakeholders for the activities set out. They noted positively the additional of new Project Partners for the Alpha Phase, noting that it strengthened an already

strong stakeholder mix. They also noted positively the plan to deploy the proposed solution with a mix of DNOs to ensure the any solution developed is transferrable. They also noted positively the relevant expertise and skills the stakeholder mix brings to the Project.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to be costed competitively and to provide value. They noted positively the contributions from across the stakeholder mix and that some of the Project Partners are offering reduced day rates compared to their commercial rates, which gave the assessors confidence that the Project is costed competitively. Overall, the Project's costs were considered reasonable and to be providing value for money, specifically noting the use of existing software licences and facilities where possible. As a result, 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.

Eligibility Criterion met

The Expert Assessors considered the Project to be well planned and with an experienced team, with teams roles and responsibilities clearly set out. The Project overall was considered well structured. They noted positively that the Project's methodology is robust and gives confidence that the Project will be capable of progressing in a timely manner. As a result, the assessors considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

The future commercial position of GE Digital licensing of the simulator should be explored during Alpha Phase such that the value for money for consumers is clear prior to any further Beta Phase activities.

8.2.16 10086002, CReDo+: Climate Resilience Demonstrator (extension to new climate risks), Initial Net Funding Requested £497,856

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
UK POWER NETWORKS (OPERATIONS) LIMITED (EPN)	£73,750.00	£8,000.00	£65,750.00
STFC - LABORATORIES	£102,480.00	£10,248.00	£92,232.00
CONNECTED PLACES CATAPULT	£221,195.00	£22,120.00	£199,075.00
COMPUTATIONAL MODELLING CAMBRIDGE LIMITED	£145,000.00	£14,500.00	£130,500.00
NATIONAL GRID ELECTRICITY SYSTEM OPERATOR LIMITED	£12,872.00	£2,573.00	£10,299.00

Submitted Project description

CReDo+ is a novel enhancement of the original Climate Resilience Demonstrator (CReDo) climate change adaptation decision support tool, with a primary focus of extending to the emerging risk of extreme heat. CReDo+ 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, CReDo+ 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the Innovation Challenge as it aims to model the cascading risk to national infrastructure which could result from extreme heat impacting the electricity network. This was considered to be related to the Innovation Challenge and its aims of increasing network robustness and resiliency as it could allow for more efficient network planning and maintenance, and better responses to network events. As a result, the Expert Assessors considered 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

Eligibility Criterion met

The Expert Assessors considered the Project to have identified a potential to deliver a net benefit to electricity consumers through reduced network maintenance costs, better asset planning, and fewer consumer interruptions. These were considered to primarily result in financial benefits for consumers through a reduction in costs by networks. These benefits were considered to have been clearly outlined the assessors considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to involve network innovation because of its cross-industry focus and its systems focus on the development of asset models to extract and codify knowledge from expert asset and risk management users and which consider cascading failures. This was considered to go beyond business as usual because of its approach and consideration, which go beyond current business as usual approaches. As a result, the Project was considered to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider the Project to undermine the development of competitive markets because it was noted that the proposed solution would not prevent other solutions from being developed. It was also noted that the Project proposes developing a toolset and approach which would be available in format which facilitates collaboration and interactions between infrastructure owners. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative, novel and risky. It was considered to be innovative and novel because it proposes using the latest technology to develop an approach to modelling faults resulting from extreme heat that has not been undertaken on the electricity network previously. It was considered risky because its approach to asset modelling has not been attempted before on the networks but has the potential to better understand cascading fault conditions across network and infrastructure boundaries. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to involve a strong mix of stakeholders, including a DNO, ESO, a consultancy and technical experts. They noted positively the previous experience of the technical delivery organisations with Ofwat working on related Projects. They considered the Project team to be

well placed to take a systems approach and to have the relevant expertise for the activities set out.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to be costed competitively and to be providing value for money. The costs were considered reasonable considering the scope of the Project, and day rates of the Project Partners were within expectations and comparable to industry norms. The split of funding between the Project Partners was also considered reasonable and gave the assessors confidence that it is providing value for money. As a result, the Expert Assessors considered 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.

Eligibility Criterion met

The Expert Assessors considered the Project to have a well thought through Project plan and methodology which gives confidence that it will be capable of progressing in a timely manner. They noted positively the clear detail and well thought through 'show and tell' materials as well as the architecture required to deliver the Project, and how the Project clearly builds on its Discovery Phase activities. As a result, they considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

Any overlap with other SIF Projects in this space, specifically WARN, should be monitored during the Alpha Phase and a clear plan in place to ensure complementarity prior to the Beta Phase.

The approach to generating asset models in CReDo+ (based on experience of asset managers) is different to that proposed in WARN (based on statistical analysis of historic weather data). The two approaches should be compared.

8.2.17 10086409, CommsConnect, Initial Net Funding Requested £403,382

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
UK POWER NETWORKS (OPERATIONS) LIMITED (SPN)	£95,625.00	£9,563.00	£86,062.00
UNIVERSITY OF STRATHCLYDE	£245,109.00	£24,510.00	£220,599.00
NOKIA UK LIMITED	£111,220.00	£14,500.00	£96,720.00
SCOTTISH HYDRO ELECTRIC TRANSMISSION PLC	£11,401.00	£11,400.00	£1.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered this Project to have addressed the Innovation Challenge because it has potential to both increase the resilience of electrical distribution networks (the initial focus area) and to do so at a significantly lower cost than would otherwise be the case. The Expert Assessors noted that the

Project identifies a specific area of resiliency that will have a significant impact on the ability of the network to respond to unexpected events. This was considered to be directly aligned with the aims of the Innovation Challenge because it is attempting to cost-effectively increase the co-resilience of DNOs and MNOs and the Expert Assessors therefore considered 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

Eligibility Criterion met

The Expert Assessors considered the Project to have met this Eligibility Criteria because it could deliver a net benefit to electricity consumers through cost reductions in supplying communication networks to an appropriate standard with its approach of a mix between public and private communications networks.

The Expert Assessors noted that the Project has the potential to deliver benefits to consumers through its potential to enhance network resilience, which could lead to fewer and shorter network outages, thereby reducing the costs which are passed onto consumers. This financial benefit was considered to be the main identified benefit of the Project. The Expert Assessors therefore considered this Project to have met the Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered this Project to involve network innovation because it identifies a specific area where novel investment can affordably unlock an improvement in network resilience. Its proposed solution involves the development of new knowledge and links across different utility networks, with a potential opportunity to build trust across the utilities. This approach was considered to involve network innovation beyond business-as-usual approaches

because of its cross-sector focus and its proposed solution. The assessors also noted that data is becoming more important to DNOs and that a resilient communications network is critical for their operation, especially under severe stress event such as storms. The Expert Assessors considered this Project to have met the Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider this Project to be undermining the development of competitive markets because an area of focus for the Project is on the creation of standards, which the assessors noted have the potential to increase competition and the development of new competitive markets, rather than decrease them. The assessors also noted positively that the Project aims to share the learnings across all DNOs, which was considered to have the potential to create an enabling market for DNOs and MNOs to collaborate further. The Expert Assessors therefore considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative, novel and risky. This is because it requires the processes of two different utilities (DNOs and MNOs) to interact in a new way, thereby demonstrating its novel and innovative approach. The Project was also considered to have elements of risk in its first of a kind approach.

The Expert Assessors noted positively the Project's proposed focus of formally engaging with gas distribution network companies and water companies in the Alpha Phase, which they considered to add to its innovative and novel approach. They noted that the learnings from this Project could result in benefits across utilities, who all rely on resilience in communication networks, and that a wider

understanding of different critical infrastructure across multiple utilities would help mobile networks better prioritise investments.

The Expert Assessors consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project Partners to be sufficient for the activities set out in the Alpha Phase because they have strong capabilities in both electrical and communication networks. Each stakeholder involved in the Project brings a high level of experience and knowledge relevant to the delivery of the specific work packages outlined in Application. As a result, the Expert Assessors considered it to have met the Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to be delivering value for money and be costed competitively because the Project and its Project Partners set out competitive pricing, as well as the re-use of existing facilities which was noted favourably by the assessors as delivering value for money. The costs and budgets were considered aligned with other Alpha Phase Projects and the day rates were considered aligned with industry standards. The Expert Assessors therefore considered 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.

Eligibility Criterion met

The Expert Assessors considered the Project to have a robust methodology which gives confidence to them that it will be capable of progressing in a timely manner

because it was considered to have strong processes to manage uncertainty and risks. Whilst all assessors agreed that there are still areas of work required to identify exactly how the solution will function into deployment, the focus of the project on creating a means to connect DNO and MNO communication networks was considered clear and well-reasoned. The level of detail in the Project plan, risk register, and the experience of the Project Partners and the Funding Party also provided further confidence to the Expert Assessors that the Project will be capable or progressing in a timely manner. The Expert Assessors therefore considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

Development of business change example for a particular use-case, showing how processes will adapt for the implementation of this technology.

Develop case for impacts on the network and define value chain on the networks. This could be incorporated into the suggestion above.

Implementation route and business change processes was lacking in the interview.

Ask the Project to continue to develop the use case for extreme weather events and develop an example business change process/protocol that the networks could adopt into business as usual. The timescale of this condition would be to provide the use-case to the monitoring officer at the mid-point meeting, either via email or through a virtual call and presentation. The aim is to demonstrate that the route to business as usual has been considered and risks can be effectively mitigated to give confidence that this project can materialise and be adopted by networks effectively.

8.2.18 10086458, Connectrolyser, Initial Net Funding Requested £498,483

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
UK POWER NETWORKS (OPERATIONS) LIMITED (EPN)	£52,800.00	£5,280.00	£47,520.00
NATIONAL GAS TRANSMISSION PLC	£1,935.00	£-	£1,935.00
HYDROGENUS GROUP LTD	£500,595.00	£51,567.00	£449,028.00

Submitted 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.

Up to 8GW of electrolysers are predicted to connect to UK distribution networks by 2050. This project could save up to £30bn in network reinforcement costs by dynamically managing the system for whole system optimisation.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the Innovation Challenge with its focus on demonstrating the potential of hydrogen hubs to facilitate faster access to network thereby improving the network resilience and robustness of decarbonised grids. This was considered to be directly aligned with

the Innovation Challenge's aims and to provide opportunities for flexibility and security of supply. As a result, the Expert Assessors considered 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

Eligibility Criterion met

The Expert Assessors considered the Project to have clearly identified potential net benefit for gas and electricity consumers through a reduction in network and system costs, thereby resulting in a reduction in consumer bills. While it was noted that the main benefits would be realised with widespread adoption of the proposed solution and that there were potential risks with this occurring, all the assessors overall considered it to have clearly identified a net benefit for consumers. As a result, the assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to involve network innovation because the Project's proposed solution could lead to a first of its kind demonstration in the UK of electrolysers being used as service providers to the electricity network. It was considered to be a novel approach which goes beyond business as usual as it focuses on flexing electrolysers. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors considered the Project to not undermine the development of competitive markets because it presents one alternative that could become available, thereby competing with other existing technologies and approaches. The dissemination activity set out by the Project was also viewed positively as it further ensures that competitive markets will not be undermined. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be novel, innovative and risky. It was considered to be novel and innovative because of its focus on multi-vector and de-risk activity set out for the Alpha Phase. It was also considered risky because the technical feasibility and system level viability of the Project is not yet known but will be something the Project examines further as part of the Alpha Phase. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to include participation from a sufficient range of stakeholders for the Alpha Phase. It was noted positively that the Project includes a range of different backgrounds and expertise, which provides confidence in the likelihood of delivery. The outreach activities set out by the Project were also viewed positively. While they noted that increased engagements at the later stages of the Alpha Phase would have strengthened the Application, they also considered the stakeholder engagement set out to be sufficient. As a result, the Expert Assessors considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors considered the Project to providing value for money and to be costed competitively because the overall costs of the Project were considered appropriate for the activities set out and for the outcomes of the Project. The assessors noted specifically the potential for significant benefits from the Project, which they considered to further support that the Project is providing value for money. While it was noted that some activities, especially work package 6, were costed higher than anticipated, the assessors considered the overall costs of 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.

Eligibility Criterion met

The Expert Assessors considered the Project to have a clearly set out plan of actions/owners that gives confidence that it will be capable of progressing in a timely manner. The Project plan was considered robust with clear outputs from the work packages and an overall well thought through Project. As a result, the Expert Assessors considered the Project to have met the Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

The Project would be strengthened with more focus on business model development, particularly for the hydrogen hub operators.

Review the spending plan for WP6 and improve the commitments to publishing detailed artifacts relating to this work (reports, data, analysis).

8.2.19 10086622, D-Suite, Initial Net Funding Requested £495,010

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
SP MANWEB PLC	£225,480.00	£22,710.00	£202,770.00
NEWCASTLE UNIVERSITY	£117,344.00	£11,744.00	£105,600.00
UK POWER NETWORKS (OPERATIONS) LIMITED	£40,600.00	£4,060.00	£36,540.00
INTEGRATED POWERTECH LIMITED	£166,800.00	£16,700.00	£150,100.00

Submitted 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.

The problems LV networks will experience, will mainly be voltage rise and high circuit and transformer utilisation due to LCTs, which will be compounded by large phase imbalance due to single phase connections. D-SOPs, D-STATCOMs and D-STs can mitigate these issues, at the point of connection, on the LV network.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the Innovation Challenge through its focus on making low voltage networks more resilient through the potential use of different hardware solutions. This was considered to have the potential to increase the power capacity of the low voltage network

without having to replace all the feeders and to more actively manage the network. The assessors considered this to be directly aligned with the Innovation Challenge and its aim of developing technical innovations for increasing system resilience.

Eligibility Criterion 2:

Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers

Eligibility Criterion met

The Expert Assessors considered the Project to have identified a potential to deliver a net benefit to electricity consumers because it has the potential to delay costly and slow upgrades to transformer and feeders, which may also reduce the frequency of local blackouts. This was considered to have the potential to deliver a more resilient low voltage network while also decreasing the costs for consumers. The benefit of financial benefits for consumers was considered to be the main benefit identified. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to involve network innovation because it seeks to increase the technology readiness level of different types of hardware for the management of low voltage networks, including the development of hardware and the identification of areas of the network where deployment could take place. This focus on applying technologies from the transmission network to the low voltage distribution grid was considered to involve network innovation which goes beyond business as usual approaches because it is not something which has been previously used in low voltage network operations. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider the Project to undermine the development of competitive markets because its approach is focused on developing a competitive market for power electronics for DNOs. The Expert Assessors did not consider this approach to represent any favouring or barriers to others participating. Instead, they considered it to represent the potential to develop additional competitive markets through its tendering process. As a result, they considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to be innovative and risky because the current level of the technology, including software and standards, are not yet at a level for deployment and will be further developed by the Project in the Alpha Phase. This development was considered to be innovative because the technology has not been deployed yet on a commercial basis. As a result, the assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project to include participation from a sufficient range of stakeholders for the activities set out because the Project team has the skills and expertise to develop the proposed solution and also attract use cases should the Project progress. While they noted that engagement with additional DNOs and independent DNOs would have strengthened the Application, they considered the stakeholder mix for the Alpha Phase to be appropriate for the

activities set out. Overall, the assessors considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Project was considered to be delivering value for money and to be costed competitively because the costs and budgets were considered appropriate for the activities set out and to be aligned with industry norms. They also noted the potential for significant benefits to consumers which far outweigh the cost of the Project, which they considered to give further confidence that the Project is providing value for money. Overall, the Expert Assessors considered the Project to have demonstrated sufficient value for money and to be 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.

Eligibility Criterion met

The Expert Assessors considered the Project to have a sensible and robust methodology which gives confidence that it will be capable of progressing in a timely manner. They noted positively the level of detail in the Application, which clearly builds on the Discovery Phase activities, the strong stakeholder mix, and the appropriate resourcing dedicated to the Project. As a result, they considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

A general recommendation would be for this Project to make contact with the round 2 Alpha Phase Project "CommsConnect" which is led by UK Power Networks (a project partner in this project too). That Project is focussed on innovation on communication networks for utilities (DNOs in particular) and it would seem plausible that contact with that Project would potentially help the thinking around the communication needs of the D-Suite set of technologies, and the potential of innovative ways of providing this.

It is not specifically clear of the balance between modelling of "typical LV networks" and modelling of actual LV networks. There would seem to be a benefit in both approaches.

In the Alpha Phase it would be useful for the Project to identify the characteristics of a specific secondary substation that maximises the value of the proposition.

8.2.20 10086716, Dynamic Networks, Initial Net Funding Requested
£499,851

Project Partner name	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
E.ON UK ENERGY SERVICES LIMITED	£121,255.00	£12,125.00	£109,130.00
BARINGA PARTNERS LLP	£355,810.00	£41,370.00	£314,440.00
UK POWER NETWORKS (OPERATIONS) LIMITED	£20,088.00	£2,009.00	£18,079.00
SSEN DISTRIBUTION LIMITED	£64,669.00	£6,467.00	£58,202.00

Submitted 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.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the Innovation Challenge by exploring new ways of integrating new housing developments to the

electricity grid through managing the demand of low carbon tech, such as heat pumps and electric vehicles. This approach and the proposed solution aims to alleviate the constraints on the distribution and transmission networks and reduce delays in integrating new demand including low carbon technologies. This is directly aligned with the aims of the Innovation Challenge and we therefore consider the Project 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

Eligibility Criterion met

The Expert Assessors considered the Project to have clearly identified the potential to deliver a net benefit to electricity consumers through developing new solutions to alleviate transmission and distribution network constraints. This was considered to have the potential to help bring forward connection of new housing developments with low carbon tech, thereby benefiting consumers through faster access to better housing and access to low carbon heat and mobility. However, the Expert Assessors did note that the Project’s approach could have been more consumer-centric given the significant social risk to delivering the load management systems. The assessors also noted the need for greater validation of the cost-benefit analysis and the underlying benefit assumptions given the stage of the Project. However, overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors considered the Project to involve network innovation as it proposes developing a technical and commercial product to manage low carbon loads in new housing developments in areas that are already constrained. This capability of load management, underpinned by a commercial agreement with property developers and potentially with end consumers, to bring forward

connections in the queue does not currently rest with energy networks. This focus and proposed solution therefore involves network innovation beyond business as usual practices.

The Expert Assessors also noted that the concept has low technical and integration risk but high social risk and that the scope of work could have been more reflective of this in its activities. The assessors also highlighted that more of a systems approach to the constraint problem could have been taken, including solutions such as solar PV and battery storage, to assess an optimal solution to manage load and deliver consumer services/comfort.

However, overall, the Project's focus was considered to go beyond business as usual, thereby demonstrating network innovation.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors considered the Project to not undermine the development of competitive markets. The load management system and the commercial contractual frameworks proposed by the Project will be available to all networks and housing developers to be used in any relevant constrained network area. Customers should be able to switch suppliers as usual and opt-outs will be explored as part of the Project. However, the assessors noted that there remains of a risk of load management system lock-in for consumers and that consumer protection around lock-ins should be prioritised by the Project. However, overall, the Expert Assessors did not consider the Project to represent the development of competitive markets and therefore considered it to have met the Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to have demonstrated that the proposed solution is novel as such a load management system is not commercially available to networks to deploy in already constrained areas, although it does build on a similar technology used for PV control. The key innovative elements of the Project were considered to be load management for an aggregation of housing via the secondary substation and targeting new build housing developments rather than retrofits. The Project has also demonstrated there is sufficient commercial, regulatory and social/stakeholder risk across these different aspects that needs to be addressed. As such, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion not met

The Project was not considered to have participation from a sufficient range of stakeholders beyond electricity networks and solution providers. The Expert Assessors highlighted that greater information on the details of the stakeholder engagement plan, particularly with end consumers, could have been provided in the Application and would have strengthened it. In addition, the assessors also considered the engagement with energy suppliers could have been more detailed and focused on more, given the dependency with supply contracts and associated consumer relationship. The Expert Assessors therefore did not consider the Project to have included sufficient details on the participation from key stakeholders for them to consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion not met

The Project is not considered to be delivering value for money and be costed competitively. The Expert Assessors considered the costs to be skewed heavily towards two Project Partners and with relatively low contribution from them, given the Project's potential value to them. Furthermore, When considering value for

money, the assessors considered that the Project should have developed and resourced much clearer paths to engaging end-customers and regulators, who the assessors considered to be vital to the success of this Project. The cost benefit analysis used to underpin the potential benefits case was also highlighted as needing more validation and justification which, the assessors considered to weaken the overall value proposition of the Project. As such, the Expert Assessors did 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.

Eligibility Criterion not met

The Project was considered to have not demonstrated that it has a robust methodology. The Expert Assessors noted several areas which they considered needed to be addressed for them to have confidence in its likelihood of progressing in a timely manner including, identifying long-term consumer engagement and associated social and regulatory considerations around consumer satisfaction, and quality of service and protection. In this regard, the assessors considered the Project's delivery plan to not be oriented toward addressing and reducing this risk but instead to be more focused on technical and commercial aspects. This was highlighted as a key concern from the assessors and was considered to represent to the delivery of a Project which incorporates system and consumer needs in the Alpha Phase. As a result, the Expert Assessors did not consider the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

DO NOT FUND

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 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.

Recommended Project specific conditions

N/A

8.2.21 10082956, SIF Black start Demonstrator from offshore wind (SIF BLADE), Initial Net Funding Requested £499,920

PROJECT PARTNER NAME	Eligible costs (£)	Project contribution (£)	SIF Funding Requested (£)
SCOTTISH POWER ENERGY NETWORKS HOLDINGS LIMITED	£183,328.00	£10,800.00	£172,528.00
SCOTTISH HYDRO ELECTRIC TRANSMISSION PLC	£82,567.00	£-	£82,567.00
UNIVERSITY OF STRATHCLYDE	£89,255.00	£-	£89,255.00
THE CARBON TRUST	£355,870.00	£200,300.00	£155,570.00

Submitted Project description

Enabling a low-cost net zero GB electricity network that is robust and secure, by demonstrating how novel technology can allow offshore wind farms to restore the onshore grid following a black out, and developing business models to enable commercial deployment of this novel technology.

The overarching aim of the _Black Start Demonstrator (SIF BLADE) project is to bring electricity system restoration from offshore wind to commercial reality by building the necessary cross-industry understanding including onshore transmission network owners, transmission system operators, offshore wind farm operators, and technology suppliers.

Eligibility Criterion 1:

Projects must address the Innovation Challenge set by Ofgem.

Eligibility Criterion met

The Expert Assessors considered the Project to have addressed the Innovation Challenge because it prepares for a net zero power system with a significant

renewable component. By presenting alternative approaches to black start services, it offers a cost-effective solution that simultaneously supports resilience. This is aligned with one of the central aims of the Innovation Challenge.

The Expert Assessors also recognized that the Project addressed the Innovation Challenge as it has the potential to improve black start capability directly from offshore wind farms. By targeting a gap within the electricity network – one traditionally filled by fossil fuel generation plants – it has the potential to bring innovation forward while also improving the resilience of the network. As

Overall, the Expert Assessors considered 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

Eligibility Criterion met

The Expert Assessors considered the Project to have clearly identified potential to deliver a net benefit to electricity consumers because it explores a more cost-effective system service, which can directly translate into savings for consumers. Additionally, the Expert Assessors recognized the clear benefit presented by the Project in its focus on providing an alternative to the fossil fuel generation for black start. By aiming to reduce dependence on fossil fuel generation, the Project has the potential to reduce carbon emissions and presents potential financial benefits for the consumers. Preliminary calculations were considered to indicate a positive outcome in this aspect, though the assessors noted that a more detailed investigation during the course of the Alpha Phase will help to cement these potential benefits. As a result, the assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 3:

Projects must involve network innovation.

Eligibility Criterion met

The Expert Assessors took note of the Project's ambitious goal of developing novel technical solutions, as well as its thorough exploration of potential innovative commercial and regulatory changes. This combination gave the assessors confidence that the Project, should it progress beyond the Alpha Phase will also be rolled out efficiently across the sector. Furthermore, the Expert Assessors recognized the network innovation in the Project through its focus on researching methods to deliver black start using offshore wind farms as opposed to traditional fossil fuel plants. This was considered to involve network innovation above business as usual because the business as usual approach involves fossil fuel plants for black starts. This shift was considered to have the potential to change the approach in GB and internationally. As a result, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Eligibility Criterion 4:

Projects must not undermine the development of competitive markets.

Eligibility Criterion met

The Expert Assessors did not consider the Project to be undermining the development of competitive markets and instead considered it to have the potential to bolster new competitive markets. By aiming to provide alternative solutions that can compete in existing markets, the Project broadens the options available, potentially leading to more market diversity.

Furthermore, the Expert Assessors acknowledged the Project's emphasis on inclusivity and its potential broader market implications. By proposing a solution to black start from renewables that could potentially be available to all potential offshore wind farm developers and their suppliers, the Project has the potential to enhance the competitive landscape within the sector.

As a result, we consider the Project to have met this Eligibility Criteria.

Eligibility Criterion 5:

Projects must be innovative, novel and/or risky.

Eligibility Criterion met

The Expert Assessors considered the Project to have an approach which inherently addresses a gap in the current energy landscape. Black start services provided by offshore wind was considered to represent innovation in energy resiliency, as these services are currently absent from offshore wind capabilities.

The Expert Assessors noted the distinct challenges associated with this endeavour, as the Project does not just aim to replicate onshore capabilities but seeks to supplement them. While onshore capabilities have been trialled, they depend on diesel generation and do not scale appropriately to offshore wind farms. The ambition to diverge from this and establish the proposed solution which caters specifically to offshore wind farms was considered to demonstrate clear novelty and riskiness of the Project. As a result, the Expert Assessors considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 6:

Projects must include participation from a range of stakeholders.

Eligibility Criterion met

The Expert Assessors considered the Project, despite a concentrated number of Project Partners, to represent a comprehensive segment of the value chain. The assessors noted positively that the partners span suppliers of equipment, offshore wind farm developers, networks, and the system operator. The assessors noted positively the inclusion of new stakeholders for the Alpha Phase. This wide inclusion of a range of stakeholders provides confidence to the Expert Assessors that the Project has the require skills and expertise required for the Alpha Phase activities set out. As a result, the assessors considered the Project to have met the Eligibility Criteria.

Eligibility Criterion 7:

Projects must provide value for money and be costed competitively.

Eligibility Criterion met

The Expert Assessors recognize that the Project provides value for money and is costed competitively. The assessors noted positively the clearly articulated and set

out costs, which they considered to provide transparency and insights into the Project. The assessors considered the costs overall to be reasonable for the activities set out and the costs of the Project Partners to be aligned with industry norms. While the assessors considered there to be sufficient justification for the costs and resources set out by the Project, the assessors did note that greater clarity would have strengthened the Application. Overall, however, the 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.

Eligibility Criterion met

According to the Expert Assessors, the Project plan aligns appropriately with the scope and objectives set out for the Alpha Phase. The foundational structure and methodology of the Project have been framed well, providing a high-level understanding of its objectives and the intended outcomes. The assessors noted that the documentation provided was sufficient for the Alpha Phase and considered it to give confidence that the Project would be capable of progressing in the Alpha Phase.

However, even though the assessors considered the Project to have met the Eligibility Criteria, they also noted that the Application would have been strengthened with more details in a few key areas. For example, more granular work packages with linkages to the Project Partners and a more detailed risk register.

Overall, the Expert Assessors considered the Project to have met this Eligibility Criteria.

Regulatory barriers identified for the Project Phase

NO

Neither the Project nor the Expert Assessors identified any regulatory or policy barriers which would prevent the delivery of the Alpha Phase activities.

Recommendation to the Gas & Electricity Markets Authority

FUND

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.

Recommended Project specific conditions

The role of the Advisory Board needs to be better explained to understand how much direction will come from the critical stakeholders on the board.

Exploring different means to restore systems after black/brown outs is a necessity that gets exacerbated by the proliferation of renewables and DERs. Doing it so through OWF is an avenue that needs to be explored technically and as an optional investment but always in the context of assessing other (potentially more economical) alternatives.