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Date: 29 April 2025

Dear UK POWER NETWORKS (OPERATIONS) LIMITED,

SIF Project Direction ref: UKPN/ER/SHARED/Rd4_Discovery

UK POWER NETWORKS (OPERATIONS) LIMITED submitted SHARED (Smart Hydrogen and Resilient Energy Decarbonisation) (the Project) to be considered for funding through the Discovery Phase of Round 4 of the Strategic Innovation Fund (SIF). In our¹ SIF Funding Decision issued on 29 April 2025, we selected the Project² for conditional funding for the Round 4 Discovery Phase and as a result we are now issuing this SIF Project Direction to implement that decision.

UK POWER NETWORKS (OPERATIONS) LIMITED must comply with the conditions contained in this SIF Project Direction as a condition of the Project receiving funding through the SIF. These conditions can be found in the Schedule to this document.

Progression through SIF Phases

The SIF consists of a multi-phase approach for Projects in order to mitigate the risk associated with innovations. The Discovery Phase focuses on feasibility, the Alpha Phase on experimental development, and the Beta Phase on deployment and demonstration. The Innovation Challenge issued for each Round will state if a Project can apply directly to Alpha or Beta, without the requirement to have progressed through Discovery and Alpha respectively.

Role of UK Research & Innovation (UKRI)

As per Chapter 1 of the SIF Governance Document³ the role of UKRI is to deliver the SIF in line with the SIF Governance Document - administering the funding programme,

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

² Unless otherwise specified, defined terms in this SIF Project Direction have the meaning given to them in Appendix 1 of the SIF Governance Document.

³ <https://www.ofgem.gov.uk/decision/updates-strategic-innovation-fund-governance-document>

monitoring the delivery of Projects, collating data from Projects on benefits, making recommendations to Ofgem on operational matters, supporting third-party innovators and, where possible, supporting successful Projects to become 'business as usual' activities. To support the success of the Projects and the SIF programme, we expect that the Funding Party and Project Partners collaborate with Ofgem and UKRI.

SIF Project Direction

Paragraph 5.14 of the SIF Governance Document states that a SIF Project Direction will:

- Set out the Project-specific conditions, to which the Funding Party is committing in accepting SIF Funding.⁴
- Require the Funding Party to undertake the Project in accordance with the commitments made in the Application. Where appropriate, the SIF Project Direction may therefore include extracts from the Application or refer to specific sections of the Application.
- Where applicable, set out conditions linked to milestones and deliverables, which Projects must meet.
- Set out the SIF Approved Amount for the Project, that will form part of the calculation contained in the SIF Funding Direction issued by the Authority under chapter 7 of the SIF Governance Document.⁵
- Set out the Project budget that the Funding Party must report against and how variations in the Project budget will be reported.⁶
- Where applicable, set out special information sharing requirements applicable to the Project.⁷
- Set out the mechanism for the Funding Party receiving the SIF Approved Amount as set out in the SIF Funding Direction.⁸

All SIF Project Direction requirements are detailed in the Schedule to this SIF Project Direction.

Decision

Provided the Funding Party complies with the SIF Governance Document and with the Schedule to this SIF Project Direction, the Project is deemed to be an Eligible SIF Project⁹.

⁴ 'Project specific conditions' detailed under Point 3 – 'Condition President' of this SIF Project Direction.

⁵ 'SIF Funding Amount' detailed under Point 5 – 'Condition President' of this SIF Project Direction.

⁶ 'Annex 1 – Project Budget.

⁷ 'Project specific conditions' detailed under Point 3 – 'Condition President' of this SIF Project Direction.

⁸ 'SIF Funding Amount' detailed under Point 5 – 'Condition President' of this SIF Project Direction.

⁹ The meaning 'Eligible SIF Project' is described in Chapter 2 of the SIF Governance Document.

This SIF Project Direction constitutes notice pursuant to section «ElecGas_Act».

Marzia Zafar

Deputy Director, Decentralisation & Digitalisation

For and on behalf of the Authority

Schedule to SIF Project Direction

1. PROJECT DETAILS

SIF Project Direction reference: UKPN/ER/SHARED/Rd4_Discovery

Application number: 10158623

Project title: SHARED (Smart Hydrogen and Resilient Energy Decarbonisation)

Innovation Challenge/Project Phase: Embedding resilience/ Discovery Phase Round 4

Project start date: 1 May 2025

Project end date: 30 September 2025

SIF Approved Amount for SIF Funding: £149,060

2. PREAMBLE

This SIF Project Direction is issued by the Gas and Electricity Markets Authority (the "Authority") to UK POWER NETWORKS (OPERATIONS) LIMITED (the "Funding Party") pursuant to the SIF Governance Document issued pursuant to Special Condition 9.9 of the Electricity Distribution Licence. It sets out the conditions to be complied with in relation to SHARED (Smart Hydrogen and Resilient Energy Decarbonisation) (the "Project") as a condition of it being funded under the SIF Funding Mechanism.¹⁰

Unless otherwise specified, defined terms in this SIF Project Direction have the meaning given to them in the Licence or Appendix 1 of the SIF Governance Document.

References to specific sections of the Funding Party's Application in this SIF Project Direction are, for ease of reference, made by referring to the section number in the Funding Party's Application.

3. PROJECT-SPECIFIC CONDITIONS

In accepting funding for the Project, the Funding Party is subject to the following Project-specific condition(s):

Condition 1

The Funding Party must not spend any SIF Funding until contracts are signed with the Project Partners named in Table 1 for the purpose of completing the Project.

Table 1. Project Partners

CENTRE FOR SUSTAINABLE ENERGY

¹⁰ The SIF Funding Return Mechanism is defined in the SIF Governance Document.

FRAZER-NASH CONSULTANCY LIMITED THE FIRST ELEMENT GROUP LTD
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Condition 2

The Funding Party must report on the financial contributions made to the Project as set out in its Application. Any financial contributions made over and above that stated in its Application should also be reported and included on the Innovation Funding Service (IFS).

Condition 3

The Funding Party must make reasonable endeavours to participate in all meetings related to the Project that they are invited to by Ofgem, UKRI and the Department for Energy Security and Net Zero during the Discovery Phase.

Condition 4

The Discovery phase will last for a period of up to five months from the date the Project Direction is issued; the Project will be allowed a flexible start date within the five-month period. The Project must provide the monitoring officer with the start date of the Project and must be completed before the end of the five-month period.

Condition 5

Prior to the end of the Discovery Phase, the Funding Party must provide an initial assessment to the Monitoring Officer of the cost of hydrogen produced by the solution.

Condition 6

Prior to the end of the Discovery Phase, the Funding Party must evidence to the Monitoring Officer how the proposed solution aligns with the current GB policy direction on hydrogen

4. COMPLIANCE

The Funding Party must comply with Special Condition 9.9 of the Electricity Distribution Licence, the SIF Governance Document and with this SIF Project Direction.

5. SIF APPROVED AMOUNT

The SIF Approved amount of £149,060 (as detailed under Section 1: Project details of this Project Direction) will be recovered by NESO from GB customers and transferred to the Funding Party. The Funding Party is responsible for notifying NESO of the bank

account details to which transfers must be made, in addition to completing Annex 2 of this SIF Project Direction. If a Funding Party is required to return funding to NESO, the reverse applies. The Funding Party must provide bank account details to NESO within two weeks of accepting this SIF Project Direction.

6. PROJECT BUDGET

The Project Budget is set out in Annex 1 of this SIF Project Direction.

The Funding Party must report on expenditure against each line under the category total in the Project Budget, and explain any projected variance against each line, as part of its detailed report which is to be provided in accordance with Chapter 7 of the SIF Governance Document. The Funding Party must report variations in the Project budget as outlined in Chapter 6 of the SIF Governance Document.

7. PROJECT IMPLEMENTATION

The Funding Party must undertake the Project in accordance with the commitments it has made in the Application and with the conditions of this SIF Project Direction. These include (but are not limited to) the following:

- (i) complete the Project on or before the Project completion date as detailed under Section 1 of the Schedule of this SIF Project Direction, and
- (ii) disseminate the learning from the Project at least to the level described in Chapter 3 of the SIF Governance Document. Dissemination of learning must be carried out whether the Project was concluded successfully or otherwise.

8. REPORTING

Ofgem and UKRI may issue guidance (and amend it from time to time) about the structure and content of the Project reporting required by Chapter 6 of the SIF Governance Document. The Funding Party must follow this guidance in preparing the reports.

As set out in Chapter 6 of the SIF Governance Document, the Funding Party may be required to submit an end of phase report to the UKRI monitoring officer within six months of the Project ending, if the Project is not planning on submitting an Application into the Alpha Phase, or if the Funding Party submits an Application for the Project into the Alpha Phase but is not successful. Within this report, the Funding Party must submit information related to questions on Project delivery as detailed in Chapter 6, table 6 of

the SIF Governance Document. An end of phase report template is available and can be requested from UKRI.

9. MONITORING

The Funding Party must comply with any reasonable request for information by its monitoring officer at UKRI and with related deadlines. Ofgem, with the support of UKRI, will together monitor Project delivery, impacts and benefits. Throughout the term of the Project, progress is monitored by UKRI through a monitoring officer. The monitoring officer is the first point of contact for official notifications, queries and correspondence with UKRI and the Authority, unless otherwise required by this SIF Project Direction.

As detailed in Chapter 6 of the SIF Governance Document, meetings with the monitoring officer will take place at the end of each Project Phase.

10. EVALUATION

The Funding Party has acknowledged when it submitted its Application for this Project, that reporting information and data gathered during the Project's timescales (as detailed in Section 1 of this SIF Project Direction) will be used to evaluate Project performance. In addition, the Funding Party may be required to provide requested information outside of the Project timescales and, in particular, for the period from the Project end date to the end of the SIF Programme. Further data and reporting information may be requested (frequency and method based on requirement) outside of standard monitoring and reporting requirements as deemed necessary. Further data and information requirements must be complied with by the Funding Party and Project Partners.

11. DATA SHARING

As set out in Chapter 3 of the SIF Governance Document, the Funding Party must follow the Data Best Practice Guidance issued by Ofgem in regard to all data gathered or created in the course of a Project. We expect the Funding Party to document any reasons, such as commercial sensitivities, for desensitising data. As defined by, and in accordance with, the Data Best Practice Guidance, Funding Parties must have a data triage process. Where multiple Project Partners are collaborating on a Project, the consortium must adopt a consistent Open Triage Process for the data related to the Project. Ofgem may require that Project information and data is also shared with other specified parties, such as parties working on complementary innovation funding programmes (subject to redaction of sensitive data).

12. CYBER SECURITY

It is the responsibility of the Funding Party and all Project Partners to implement and maintain appropriate security measures to protect personal data in accordance with The GDPR (General Data Protection Regulation)¹¹ and DPA (Data Protection Act) 2018¹².

Protection of computer systems from unauthorised access or being otherwise damaged or made inaccessible must be in place alongside effective working practices. These must be maintained in line with the Funding Party's IT management strategies and policies.

13. PROJECT MILESTONES

The Funding Party must provide an outline in its end of Project Phase meeting with its UKRI monitoring officer that verifies that the Project milestones have been achieved or explains why they have not.

Project milestones are outlined below in Table 2, based upon details contained within Appendix Question 9 in the Funding Party's Application.

¹¹ https://ec.europa.eu/info/law/law-topic/data-protection/data-protection-eu_en

¹² <https://www.legislation.gov.uk/ukpga/2018/12/contents/enacted>

Table 2. Project milestones¹³

Reference	Project milestone	Deadline	Overall objectives and key tasks	SIF Funding Request
Milestone 1	Work package 1: Project Management	30 September 2025	<p>Overall objective: To deliver the project on time, to budget, checking project objectives and learnings are achieved.</p> <p>Key tasks:</p> <ol style="list-style-type: none"> 1. Plan (identify and agree on key milestones under each workstream, risks, dependencies, and review process) 2. Monitor progress and learning with fortnightly team meetings, Show & Tell webinar and end of phase meeting with Innovate UK 3. Produce an end point report 	£22,369.00
Milestone 2	Work package 2: Consumer Prioritisation	30 September 2025	<p>Overall objective: Develop a stakeholder engagement plan which will be used in Alpha for targeted consumer and other stakeholder engagement. This will be created by identifying priority consumers and using data and geospatial analysis to assess those most at risk.</p> <p>Key tasks:</p> <ol style="list-style-type: none"> 1. Scenario Planning - define two outage scenarios for use case testing 2. Consumer prioritisation criteria definition - define the criteria to be attributed to consumers for prioritisation 	£38,105.00

¹³ As outlined in in the Application or Project Plan appendix.

			<p>3. Data acquisition - obtaining data associated with the consumer prioritisation criteria</p> <p>4. Geospatial analysis - assess the rural areas with the greatest need for the solution</p> <p>5. Consumer Prioritisation - Identify the consumer types most at risk</p> <p>6. Stakeholder Engagement Planning - generate a plan for targeted stakeholder engagement during Alpha Phase</p>	
Milestone 3	Work package 3: Network Risk Identification	30 September 2025	<p>Overall objective: Identify key criteria associated with network resilience and reliability that results in poorer service for worst served customers. Undertake geospatial analysis to identify the network regions most exposed to resilience risk. This will be overlayed with findings from WP2 to identify areas most in need of the solution and inform Alpha Phase development.</p> <p>Key tasks:</p> <ol style="list-style-type: none"> 1. Network resilience risk characterisation criteria definition 2. Data acquisition - obtaining data associated with network resilience 3. Geospatial analysis - assess the rural areas with greatest risk of resilience related issues 4. Network risk assessment - identify the network areas with the highest risk 5. Scale of need - estimate the scale of solution rollout required to mitigate at risk network areas and high priority consumers. 	£31,482.00
Milestone 4	Work package 4: Technology Assessment	30 September 2025	<p>Overall objective: To investigate relevant technology requirements, constraints and challenges - generate candidate technologies and system solutions, assess these against the requirements, and report these findings to the other project partners.</p>	£28,123.00

			<p>Key tasks:</p> <ol style="list-style-type: none"> 1. Concept design - subsystem drawings 2. Technology assessment - appraisal of the different available technologies for each subsystem, including specifications and costs 3. Technology down-selection - select most suitable technologies for each subsystem 4. Sizing simulation - simulation of system behaviour for each of the two scenarios 5. Controller requirements - capture requirements for controller interface with the network, for example fault predication and detection 	
Milestone 5	Work package 5: Implementation Strategy	30 September 2025	<p>Overall objective: Develop a strategy for future solution development, based assessment of wider barriers and enablers associated with deployment, economic viability and future commercialisation options.</p> <p>Key tasks:</p> <ol style="list-style-type: none"> 1. STEEPLE Analysis - assessment of macro-environmental barriers and enablers 2. Cost Benefit Analysis 3. Implementation Roadmap 	£28,981.00

14. USE OF LOGO

The Funding Party and the Project Partners, External Funders and Project Supporters or subcontractors¹⁴ must not use the Innovate UK/UKRI and/or Ofgem logo for purposes associated with the Project in any circumstances.

As an alternative for use of both Ofgem and UKRI logos, all external Project communications must include the following standard form of wording:

- (i) "this project is funded by network users and consumers under the Strategic Innovation Fund, an Ofgem programme managed in partnership with UKRI."

For additional guidance, refer to the communications and media guidelines for competition winners, detailed as part of your delivery pack. These guidelines are designed to help with some suggestions and encourage you to take a proactive approach to communicating about your Project.

15. SHARING OF LESSONS LEARNED

The Funding Party is required to ensure that the sharing of lessons learned and the facilitation of knowledge transfer is conducted as effectively as possible, to ensure that all parties, and therefore all consumers including future consumers, can benefit from Projects.

As outlined in Chapters 3 and 6 of the SIF Governance Document, we require the Funding Party to work collaboratively with other Networks and third-party innovators to disseminate the learnings and data from Projects and ensure that these are publicly available.

16. COLLABORATION

The Funding Party must collaborate with third-party innovators as Project Partners, as well as work closely with other parties in the energy supply chain, as set out in Chapter 3 of the SIF Governance Document.

The Funding Party must collaborate with other parties and with UKRI to organise an annual conference in a format appropriate to enabling the building of consortiums and disseminating learning widely. The conference may be a single event for gas and electricity, or more than one event, as appropriate.

¹⁴ As detailed in the Application.

17. AMENDMENT OR REVOCATION

As set out in Chapter 7 of the SIF Governance Document, this SIF Project Direction may be amended or revoked under the following circumstances:

- (i) if the Funding Party considers that there has been a material change in circumstance that requires a change to the SIF Project Direction, and the Authority agrees; or
- (ii) to reflect amendments made to the Licence.

18. HALTING OF PROJECTS

This SIF Project Direction is subject to the provisions contained in Chapter 7 of the SIF Governance Document relating to the halting of Projects. By extension, this SIF Project Direction is subject to any decision by the Authority to halt the Project to which this SIF Project Direction relates and to any subsequent relevant SIF Funding Direction issued by the Authority pursuant to Special Condition 9.9 of the Electricity Distribution Licence.

Further to the requirements in Chapter 7 of the SIF Governance Document, in the event the Authority decides to halt the Project to which this SIF Project Direction relates, the Authority may issue a statement to the Funding Party clarifying the effect of that halting decision as regards the status and legal force of the conditions contained in this SIF Project Direction.

NOW THEREFORE:

In accordance with the SIF Governance Document issued pursuant to Special Condition 9.9 of the Electricity Distribution Licence of the Licence, the Authority hereby issues this SIF Project Direction to the Funding Party in relation to the Project.

This constitutes notice of reasons for the Authority's decision pursuant to section 49A (Reasons for decisions) of the Electricity Act 1989.

Failure to comply with the conditions of this SIF Project Direction means that Ofgem may treat all or part of the SIF Approved Amount received by the Funding Party as SIF Disallowed Expenditure.

ANNEX 1: PROJECT BUDGET

SIF Project Direction costs	
Cost Category	Total Project costs (£)
Labour	£162,549
Materials	£4,550
Subcontracting	-
Travel and subsistence	£2,840
Other costs	-
Total	£169,939

Project Partner	Total project costs (£)	Project contribution (£)	Total SIF Funding requested (£)	Project contribution (%)
UK POWER NETWORKS (OPERATIONS) LIMITED	£25,940	£5,050	£20,890	
CENTRE FOR SUSTAINABLE ENERGY	£35,540	£2,160	£33,380	
FRAZER-NASH CONSULTANCY LIMITED	£78,079	£7,819	£70,260	
THE FIRST ELEMENT GROUP LTD	£30,380	£5,850	£24,530	
Total	£169,939.00	£20,879.00	£149,060.00	14%

**ANNEX 2 TO SCHEDULE: TEMPLATE OF BANK ACCOUNT DETAILS TO BE PROVIDED
TO EITHER NGT (BOX.GSOSETTLEMENTS@NATIONALGRID.COM) OR NESO
(REVENUE.INVOICE@NATIONALENERGYSO.COM)**

Company name:

Primary Contact Details (only one contact permitted)

First Name:

Last Name:

Email address:

Mobile phone number:

Work phone number:

Address details

Address name:

Street address:

City:

State / region:

Post code:

PO box: (if applicable)

PO box post code: (if applicable)

Banking details

These should be evidenced in non-editable format. The evidence provided must show company name and bank details and it should be dated within the last 6 months.

Any of the below documents will suffice:

- Bank statement (scanned document)
- Void cheque
- Paying in slip
- Screenshot of online banking (showing a logged-in account with bank account and sort code, with browser visible)