

Northern Powergrid (Northeast) PLC
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Date: 07 October 2024

Dear Northern Powergrid (Northeast) PLC,

SIF Project Direction ref: NPG/Cross Vector Hub/SIFWSPFAR/Rd3 Alpha

Northern Powergrid (Northeast) PLC submitted Cross Vector Hub (the Project) to be considered for funding through the Alpha Phase of round 3 of the Strategic Innovation Fund (SIF). As explained in greater detail below, this Project previously received SIF Funding and completed a Discovery Phase for round 3 of the SIF. In our¹ SIF Funding Decision issued on 07 October 2024, we selected the Project² for conditional funding for the round 3 Alpha Phase and as a result we are now issuing this SIF Project Direction to implement that decision.

Northern Powergrid (Northeast) PLC 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 Project previously received SIF Funding for the round 3 Discovery Phase³ and submitted an Application for the Project to be considered for SIF Funding for the round 3

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 The Project Directions for round 3 of the Discovery Phase are available at: <https://www.ofgem.gov.uk/publications/strategic-innovation-fund-round-3-discovery-projects-approved-funding>

Alpha Phase of the SIF. As stated above, the Project has been selected by Ofgem to receive SIF Funding for the Alpha Phase of round 3.

Role of UK Research & Innovation (UKRI)

As per Chapter 1 of the SIF Governance Document⁴ the role of UKRI is to deliver the SIF in line with the SIF Governance Document - administering the funding programme, 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, 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.⁵
- 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 SIF Application.⁶
- Where applicable, set out conditions (such as Project stage gates) linked to milestones and deliverables, which Projects must meet.⁷
- 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.⁸
- Set out the Project budget that the Funding Party must report against and how variations in the Project budget will be reported.⁹
- Where applicable, set out special information sharing requirements applicable to the Project.¹⁰
- Set out the mechanism for the Funding Party receiving the SIF Approved Amount as set out in the SIF Funding Direction.¹¹

⁴ <https://www.ofgem.gov.uk/decision/updated-sif-governance-document>

⁵ 'Project specific conditions' detailed under Point 3 – 'Condition President' of this SIF Project Direction.

⁶ 'Project specific conditions' detailed under Point 3 – 'Condition President' of this SIF Project Direction.

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 Annex 1 – Project Budget.

¹⁰ 'Project specific conditions' detailed under Point 3 – 'Condition President' of this SIF Project Direction.

¹¹ 'SIF Funding Amount' detailed under Point 5 – 'Condition President' of this SIF Project Direction.

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 Project¹².

This SIF Project Direction constitutes notice pursuant to section 49A (Reasons for decisions) of the Electricity Act 1989.

Marzia Zafar

Deputy Director, Decentralisation & Digitalisation

For and on behalf of the Authority

¹² The meaning 'Eligible SIF Project' is described in Chapter 2 of the SIF Governance Document.

Schedule to SIF Project Direction

1. PROJECT DETAILS

SIF Project Direction reference: NPG/Cross Vector Hub/SIFWSPFAR/Rd3 Alpha

Application number: 10130964

Project title: Cross Vector Hub

Innovation Challenge/Project Phase: Whole System Planning for Faster Asset Rollout /
Alpha Phase round 3

Project start date: 07 October 2024

Project end date: 30 May 2025

SIF Approved Amount for SIF Funding: £380,106

2. PREAMBLE

This SIF Project Direction is issued by the Gas and Electricity Markets Authority (the "Authority") to Northern Powergrid (Northeast) PLC (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 Cross Vector Hub (the "Project") as a condition of it being funded under the SIF Funding Mechanism.¹³

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.

¹³ The SIF Funding Return Mechanism is defined in the SIF Governance Document.

Table 1. Project Partners

Northern Gas Networks Ltd
Smarter Grid Solutions Ltd

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 within the Project costs template.

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 DESNZ during the Alpha Phase.

Condition 4

Alpha phase will last for a period of 8 months from the date the Project Direction is issued, the Project will be allowed a flexible start date within the 8-month period. The Project must provide the monitoring officer with the start date and must complete within 6 months of the start date and cannot be completed after the 8-month period has ended.

Condition 5

At the kick off meeting, the Project should share a revised engagement map and plan for engagement. As a minimum, additional stakeholders to engage include Local Area Energy Planning practitioners, National Grid Energy System Operator (particularly the Regional Energy Strategic Planning team), energy hubs, Local Authorities, supply chains etc. Additional internal network engagement (i.e. within Northern Power Grid and Northern Gas Networks), engagement with other networks and engagement with Ofgem is required to understand the willingness to share data and ability to integrate data. An updated on this engagement should be presented at both the mid point and end of Phase meeting.

Condition 6

At the mid point meeting, the Project team should outline what they classify as 'open data' and 'open source' and ensure compliance with Ofgem's Data Best Practice.

Condition 7

At the end of Phase meeting, the Project team should present to the monitoring officer a timeline of which tools will be utilised at which point.

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 £380,106 (as detailed under Section 1: Project details of this Project Direction) will be recovered by National Grid Electricity System Operator from GB customers and transferred to the Funding Party. The Funding Party is responsible for notifying National Grid Electricity System Operator 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 National Grid Electricity System Operator, the reverse applies. The Funding Party must provide bank account details to National Grid Electricity System Operator 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 will 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) undertake the Project in accordance with its Application,
- (ii) complete the Project on or before the Project completion date as detailed under section 1 of the schedule of this SIF Project Direction, and

- (iii) 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 for the round 3 Alpha Phase. An end of Phase report is required for the round 3 Alpha Phase if the Project is not planning on submitting an Application to the round 3 Beta Phase and, if the Funding Party submits an Application for the Project for the round 3 Beta 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.

9. MONITORING

The Funding Party must comply with any reasonable request for information by its monitoring officer at UKRI and 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 regular intervals, as advised by Ofgem or the monitoring officer during the delivery of the Project, and 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 Data Best Practice Guidance with regards 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, 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)¹⁴ and DPA (Data Protection Act) 2018¹⁵. 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 the Project milestones have been achieved or explains why they have not.

Project milestones are outlined below in Table 3, based upon details contained within Question 7 and Appendix Question 9 in the Funding Party's.

¹⁴ https://ec.europa.eu/info/law/law-topic/data-protection/data-protection-eu_en

¹⁵ <https://www.legislation.gov.uk/ukpga/2018/12/contents/enacted>

Table 3. Project milestone¹⁶

Reference	Project milestone	Deadline	Overall objectives and key tasks	SIF Funding Request
Milestone 1	Work package 1:	30 May 2025	<p>Overall objective: Establish a set of detailed requirements and objectives for the Cross Vector Energy Hub toolkit: an analytical modelling tool that allows sizing and scoping of Energy Hub technology options and quantifies the value case. The Work package will define the tool requirements alongside the case studies that will be studied later in the project to validate the tool and inform the scoping of Beta phase network demonstration</p> <p>Key tasks:</p> <ol style="list-style-type: none"> 1. Project Mobilisation and Kick-off 2. Toolkit Requirements elicitation and specification 3. Definition of Case Study Objectives and Requirements: includes identification of second Case Study site. 4. Case Study Data Collection 	£36,643.78

¹⁶ As outlined in in the Application or Project Plan appendix.

Milestone 2	Work package 2:	30 May 2025	<p>Overall objective: WP2 Will take learning from the Discovery Phase (which has proposed the high level principles of Energy Hub operation) to establish a detailed breakdown of how low-carbon devices will be operated in isolation and in coordination to achieve the wider ENergy Hub objectives. The WP will define the Coordination and Arbitration principles between devices for different Use Cases, and then establish the detailed modelling requirements for each device type.</p> <p>Key tasks:</p> <ol style="list-style-type: none"> 1. Energy Hub Modelling: Overall Coordination Principles 2. Energy Hub Modelling: Electrical Control Principles 3. Energy Hub Modelling: Gas Control Principles 	£42,628.60
Milestone 3	Work package 3:	30 May 2025	<p>Overall objective: WP3 will build the Energy Hub modelling toolset, performing sufficient testing to ensure it is ready for application to Case Studies in WP4.</p> <p>Key tasks:</p> <ol style="list-style-type: none"> 1. Tool Architecture Specification 2. Time Series Modelling & Inputs Coordination 3. Control Arbitration Rules: Definition and Application 4. Output Design 5. Tool Testing 	£161,517.28

Milestone 4	Work package 4:	30 May 2025	<p>Overall objective: WP4 will apply the Toolset to the Case Studies defined in WP1, providing validation (and feedback) of tool usability and outputs, feeding into the refinement of the tool in WP5. The outputs from the Case Studies will inform the design of the Beta network demonstration trial to be undertaken in WP6.</p> <p>Key tasks:</p> <ol style="list-style-type: none"> 1. Case Study 1: Low Thornley Studies & Value Case 2. Case Study 2: Second Site Studies & Value Case 3. Tool Application: Learning and Feedback 	£65,893.46
Milestone 5	Work package 5:	30 May 2025	<p>Overall objective: WP5 will deliver updates to the toolset, informed by feedback and recommendations from deliverable D3 in WP4. Once updates have been delivered, documentation will be created to assist future users of the toolset once the toolset has been published.</p> <p>Key tasks:</p> <ol style="list-style-type: none"> 1. Tool Updates 2. Tool Documentation: User Guidance 	£47,263.64
Milestone 6	Work package 6:	30 May 2025	<p>Overall objective: WP6 Will draw upon the findings from WP4, alongside the learning from the project Discovery Phase, to design a Beta trial that demonstrates the Energy Hub on a network area and is focused on deriving learning to support BaU roll-out of the Energy Hub concept</p>	£26,158.82



Making a positive difference
for energy consumers

			<p>Key tasks:</p> <ol style="list-style-type: none">1. Trial Design: Case Study Review & Recommendations	
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14. USE OF LOGO

The Funding Party and the Project Partners, External Funders and Project Supporters or subcontractors¹⁷ 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 contained within Chapter 3 of the SIF Governance Document, we require the Funding Party to work collaboratively to maintain the ENA Smarter Networks Portal so that all reporting and dissemination of learnings on Projects (as required by chapter 6 of the SIF Governance Document) is available via the ENA Smarter Networks Portal.

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.

¹⁷ 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 to 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

Cost Category	Total Project costs (£)
Labour	£407,044
Materials	£0
Subcontracting	£0
Travel and subsistence	£9,500
Other costs	£9,000
Total	£425,544

Project Partner	Total project costs (£)	Project contribution (£)	Total SIF Funding requested (£)	Project contribution (%)
Northern Powergrid (Northeast) plc	£28,800	£2,880	£25,920	
Northern Gas Networks Ltd	£18,694	£1,870	£16,824	
Smarter Grid Solutions Ltd	£378,050	£40,688	£337,362	
Total	£425,544	£45,438	£380,106	10%

ANNEX 2 TO SCHEDULE: TEMPLATE OF BANK ACCOUNT DETAILS TO BE PROVIDED TO EITHER NGT (BOX.GSOSETTLEMENTS@NATIONALGRID.COM) OR NG ESO (revenue.invoice@nationalgrideso.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)