

Newington House
237 Southward Bridge Road
London
SE1 6NP

Direct Dial: 020 7901 7295

Email: Marzia.Zafar@ofgem.gov.uk

Date: 29 April 2025

Dear UK POWER NETWORKS (OPERATIONS) LIMITED,

SIF Project Direction ref: UKPN/FND/Conductor/Rd4_Discovery

UK POWER NETWORKS (OPERATIONS) LIMITED submitted Conductor (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, monitoring the delivery of Projects, collating data from Projects on benefits, making

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>

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/FND/Conductor/Rd4_Discovery

Application number: 10158670

Project title: Conductor

Innovation Challenge/Project Phase: Faster Network Development/ Discovery Phase
Round 4

Project start date: 1 May 2025

Project end date: 30 September 2025

SIF Approved Amount for SIF Funding: £138,335

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 Conductor (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.

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

Table 1. Project Partners

ENERGY SYSTEMS CATAPULT LIMITED

RIDING SUNBEAMS APOLLO 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 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 will evidence to the Monitoring Officer engagement with the SIF Project, Flexible Railway Hubs, and incorporated learnings from the Project.

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 £138,335 (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 	£12,473
Milestone 2	Work package 2: Market Assessment	30 September 2025	<p>Overall objective: Identify learning from previous relevant projects and identify opportunities and barriers for the proposed solution.</p> <p>Key tasks:</p> <ol style="list-style-type: none"> 1. Review of articles from rail, solar, battery trade press. 	£33,357

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

			<ol style="list-style-type: none"> 2. Review of Ofgem and Innovate UK projects to identify relevant projects and project owners. 3. Review outputs from Energy Control System for Energy Storage and Renewables project delivered by Riding Sunbeams 4. Create list of relevant projects across the UK and globally 5. From the review in 2.1 to 2.4 identify learning from previous projects relevant to Smart Traction BSPs. 6. Summarise findings of the market assessment in short briefing note 7. Assess market availability of solutions for unlocking flexibility from behind the meter 8. Identify opportunities and barriers for unlocking flexibility behind the meter that will need to be further explored during the Alpha phase 9. Qualitatively review the impact of behind the meter connections to accelerating the connection of generation and storage assets 10. Identify any data requirements for the Alpha phase 11. Summarise findings of the opportunities and barriers of unlocking flexibility from behind the meter in short briefing note 	
Milestone 3	Work package 3: Stakeholder Engagement	30 September 2025	<p>Overall objective: Map and engage stakeholders. Understand scale of problem, challenges and opportunities.</p> <p>Key tasks:</p> <ol style="list-style-type: none"> 1. Identify primary target stakeholders in rail and power sectors, including relationships with issue and between parties and individual personnel, roles and contact details 	£19,883

			<ol style="list-style-type: none"> 2. Desk research and full team workshop to identify likely issues for attention / discussion / investigation for each stakeholder, draft register of issues for investigation 3. Collate data requirements for Alpha phase - what will be needed, from whom - technical, operational, commercial, regulatory 4. Draft interview questions for each primary stakeholder 5. Issue data enquiries to primary stakeholders 6. Conduct 121 interviews with each primary stakeholder 7. Data discovery - assessment of available data held by primary stakeholders, identification of gaps, draft into data availability register 8. Identify secondary target stakeholders in rail and power sectors and their supply chains, including individual personnel and contact details 9. Draft interview questions for each secondary stakeholder 10. Conduct 121 interviews with each secondary stakeholder 11. Write up narrative summary of key learning from all stakeholder interviews 12. Draft stakeholder engagement plan for Alpha stage 	
Milestone 4	Work package 4: Technical Optioneering	30 September 2025	<p>Overall objective: Develop outline modelling approach</p> <p>Key tasks:</p> <ol style="list-style-type: none"> 1. Subcontract management, oversight and troubleshooting 2. Data requirements - assessment of all technical data that will be needed to complete Alpha phase 3. Investigate the available and existing data from UKPN/NR for assessments and modelling, identify gaps and specify methodology for sourcing missing data 4. Identify requirements for simulation/power quality assessment 	£29,634

			<p>5. Develop high-level requirement for control system for the BESS facility</p> <p>6. Determine the flexibility potentials</p> <p>7. Review and define distinguishing characteristics of UKPN's traction BSPs, including key technical barriers to optimising utilisation</p>	
Milestone 5	Work package 5: Whole System Benefits	30 September 2025	<p>Overall objective: Develop Cost Benefit Analysis for several whole system planning scenarios</p> <p>Key tasks:</p> <ol style="list-style-type: none"> 1. Data requirements - assessment of all commercial, operational and regulatory data that will be needed to complete Alpha phase 2. Assessment of whole system value distribution network battery storage based on existing modelling studies and literature 3. Cross reference potential battery storage sites (provided by network rail) with publicly available DNO data on where flexibility is required 4. Based on 5.3 identify approximate scale of network rail battery storage and how this will contribute to whole system value identified in 5.2 5. Summarise findings in short briefing note 6. Qualitatively identify the value streams to both DNOs and Network Rail 7. Estimate the size of the value and where/who the value is with 8. Identify barriers to the value being realised (regulatory, commercial and technology) 9. Explore how the benefits identified might scale-up across UKPN's region and to other DNO's. 10. Review the proposition of Smart Traction BSPs within the context of Clean Power 2030. 11. Develop the cost benefit analysis for Alpha Phase 	£42,988



Making a positive difference
for energy consumers

The Office of Gas and Electricity Markets

Commonwealth House, 32 Albion Street, Glasgow, G1 1LH **Tel** 020 7901 7000 **www.ofgem.gov.uk**

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	£124,488
Materials	-
Subcontracting	£28,751
Travel and subsistence	£655
Other costs	-
Total	£153,894

Project Partner	Total project costs (£)	Project contribution (£)	Total SIF Funding requested (£)	Project contribution (%)
UK POWER NETWORKS (OPERATIONS) LIMITED	£40,315	£4,200	£36,115	
ENERGY SYSTEMS CATAPULT LIMITED	£66,400	£6,640	£59,760	
RIDING SUNBEAMS APOLLO LTD	£47,179	£4,719	£42,460	
Total	£153,894.00	£15,559.00	£138,335.00	11%

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)