

UK POWER NETWORKS: LONDON POWER NETWORKS PLC (LPN)

Newington House, 237 Southwark Bridge Road

London

SE1 6NP

Direct Dial: 020 7901 7295

Email: [Marzia.Zafar@ofgem.gov.uk](mailto:Marzia.Zafar@ofgem.gov.uk)

Date: 4 April 2023

Dear UK Power Networks: London Power Networks PLC,

**SIF Project Direction ref: UKPN/Watt Heat/SIFADMED/Rd2 Discovery**

UK Power Networks: London Power Networks PLC submitted Watt Heat (the Project) to be considered for SIF Funding in the round 2 Discovery Phase of the Strategic Innovation Fund (SIF). In our<sup>1</sup> SIF funding decision issued on 4 April 2023, we selected the Project<sup>2</sup> for conditional funding and as a result we are now issuing this SIF Project Direction to implement that decision.

UK Power Networks: London Power Networks 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 and rounds**

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. This Project Direction is for the round 2 Discovery Phase of the SIF.

**Role of UK Research & Innovation (UKRI)**

As per Chapter 1 of the SIF Governance Document<sup>3</sup> 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

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

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

<sup>3</sup> <https://www.ofgem.gov.uk/sites/default/files/2023-02/SIF%20Governance%20Document%20v2.1%20final%20clean.pdf>

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.<sup>4</sup>
- 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.<sup>5</sup>
- Where applicable, set out conditions (such as Project stage gates) linked to milestones and deliverables, which Projects must meet.<sup>6</sup>
- 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.<sup>7</sup>
- Set out the Project budget that the Funding Party must report against and how variations in the Project budget will be reported.<sup>8</sup>
- Where applicable, set out special information sharing requirements applicable to the Project.<sup>9</sup>
- Set out the mechanism for the Funding Party receiving the SIF Approved Amount as set out in the SIF Funding Direction.<sup>10</sup>

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 Project<sup>11</sup>.

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

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

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

<sup>7</sup> 'SIF Funding Amount' detailed under Point 5 – 'Condition President' of this SIF Project Direction.

<sup>8</sup> 'Annex 1 – Project Budget.

<sup>9</sup> 'Project specific conditions' detailed under Point 3 – 'Condition President' of this SIF Project Direction.

<sup>10</sup> 'SIF Funding Amount' detailed under Point 5 – 'Condition President' of this SIF Project Direction.

<sup>11</sup> The meaning 'Eligible SIF Project' is described in Chapter 2 of the SIF Governance Document.

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

**Marzia Zafar**

**Deputy Director of Strategy & Decarbonisation**

**For and on behalf of the Authority**

## Schedule to SIF Project Direction

### 1. PROJECT DETAILS

SIF Project Direction reference: UKPN/Watt Heat/SIFADMED/Rd2\_Discovery

Application number: 10061544

Project title: Watt Heat

Innovation Challenge/Project Phase: Accelerating decarbonisation of major energy demands / Discovery Phase round 2

Project start date: 3 April, 2023

Project end date: 30 June, 2023

SIF Approved Amount for SIF Funding: £86,697

Total Compulsory Contribution<sup>12</sup>: £22,463

### 2. PREAMBLE

This SIF Project Direction is issued by the Gas and Electricity Markets Authority (the "Authority") to UK Power Networks: London Power Networks PLC (the "Funding Party") pursuant to the SIF Governance Document issued pursuant to Special Condition 9.9 of the Electricity Distribution Licence (the "Licence"). It sets out the conditions to be complied with in relation to Watt Heat (the "Project") as a condition of it being funded under the SIF Funding Mechanism.<sup>13</sup>

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.

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<sup>12</sup> The Compulsory Contribution is defined in the SIF Governance Document.

<sup>13</sup> The SIF Funding Return Mechanism is defined in the SIF Governance Document.

**Table 1. Project Partners**

BARINGA PARTNERS LLP
TEPEO LTD
GREATER LONDON AUTHORITY HOLDINGS LIMITED
PASSIV UK LIMITED

### **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 participate in all meetings related to the Project that they are invited to by Ofgem, UKRI and DESNZ (formerly BEIS) during the Project Phase.

## **4. COMPLIANCE**

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

## **5. SIF APPROVED AMOUNT**

The SIF Approved amount of £86,697 (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.

Each Project not intending to submit an Application to the next Project Phase must submit an end of Project Phase report to the monitoring officer. Projects which are not successful at the next Project Phase must either retrospectively complete an end of Phase report and publish it on the Smarter Networks Portal, or publish their unsuccessful Application (redacted where necessary) and close out meeting slides for this Project Phase on the Smarter Networks Portal.

## **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)<sup>14</sup> and DPA (Data Protection Act) 2018<sup>15</sup>. 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.

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<sup>14</sup> [https://ec.europa.eu/info/law/law-topic/data-protection/data-protection-eu\\_en](https://ec.europa.eu/info/law/law-topic/data-protection/data-protection-eu_en)

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

### 13. PROJECT MILESTONES

The Funding Party must verify in its end of Project Phase meeting with the monitoring officer whether the Project milestones have been achieved or explain why they have not been.

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

**Table 3. Project milestone<sup>16</sup>**

Reference	Project milestone	Deadline	Evidence	SIF Funding Request (100%) <sup>17</sup>
Milestone 1	Work package 1: Project management	June 30, 2023	<p>Overall work package objectives: This work package focusses on ensuring successful delivery of the project through good project management practices - e.g. facilitating weekly management meetings, progress reporting and risk/issue management.</p> <p>Key tasks: 1. Develop project plan and governance approach 2. Establish and run project governance (progress reporting, risks/issues, etc.)</p> <p>Milestone(s): - Project Plan &amp; Governance Approach complete: Project Plan &amp; Governance</p>	£6,681

<sup>16</sup> As outlined in the Application or Project Plan appendix.

<sup>17</sup> Where Project Applications were not explicit on milestone(s) as a percentage of total SIF Funding Request, milestone(s) as a percentage of total project costs were applied to the SIF Funding Request. In some circumstances where the information needed to complete this table was not available in an Application, Funding Parties were requested to provide this information separately.



			Approach deliverable created. (£6,681).	
Milestone 2	Work package 2: Stakeholder engagement	June 30, 2023	<p>Overall work package objectives:</p> <p>To inform the insight gathering elements of the project we will seek to engage with key customer representative bodies (e.g. Citizens' Advice, Energy UK, and the GLA) as well as heat technology providers, installers and service providers. Leveraging existing Baringa, UKPN, Tepeo and Passivsystems relationships we will engage key supply chain actors with a view to collecting opinions on the role of thermal storage as alternative assets to heat pumps and the role these technologies can play in smoothing peak network power demand. We will also engage with financiers to seek their views on the potential to finance these technologies on a domestic level at scale, and the role that new revenue streams could play. The output from this work will feed into the 'customer and building insight' and 'solution and ecosystem insight' work packages.</p> <p>Key tasks:</p> <ol style="list-style-type: none"> <li>1. Identify, contact and schedule stakeholders</li> <li>2. Prepare engagement materials</li> <li>3. Engage stakeholders</li> </ol>	£16,832

			<p>Milestone(s):</p> <ul style="list-style-type: none"> <li>- Stakeholder engagement pack/survey approach complete: Stakeholder engagement pack/survey approach deliverable ready for launch of stakeholder engagement approach. (£0).</li> <li>- Stakeholder input gathered to inform deliverables in WP3 and WP4: Sufficient insight gathered to enable WP3 and WP4 deliverables. (£16,832).</li> </ul>	
Milestone 3	Work package 3: Customer and building insight	June 30, 2023	<p>Overall work package objectives:</p> <p>This work package will build on existing reports and insight to assess opportunities for the use of thermal storage solutions in domestic properties and across the various customer segments. We will map applicable low-carbon heating technologies to different customer/building archetypes to inform the potential market size of each technology to take forward for further investigation. The deliverable from this work will be a customer insight report for each technology, identifying the priority segments for of focus for the project.</p>	£19,034

			<p>Key tasks:</p> <ol style="list-style-type: none"> <li>1. Consolidate existing published insight</li> <li>2. Understand customer/building archetypes and needs</li> <li>3. Quantify market size of segments</li> <li>4. Develop customer insight report</li> </ol> <p>Milestone(s):</p> <ul style="list-style-type: none"> <li>- Customer insight report: Customer and building insight report prepared with relevant inputs to enable the success of the CBA (WP5). (£19,034).</li> </ul>	
Milestone 4	Work package 4: Solution and ecosystem insight	June 30, 2023	<p>Overall work package objectives:</p> <p>This work package will focus on exploring the technical feasibility of heat pumps, heat batteries and other thermal storage solutions, to provide flexibility of electrified heat demand, and in particular testing cases where solutions can be combined. Through engagement with the supplier ecosystem, we will understand the requirements for supply and installation, O&amp;M, energy supply, financing and asset flexibility and optimisation. The deliverable from this work will be a supplier ecosystem insight report that prioritises solutions to take forward for demonstration.</p> <p>Key tasks:</p>	£14,966

			<ol style="list-style-type: none"> <li>1. Identify candidate solutions for heat flexibility</li> <li>2. Assess theoretical flexibility potential of solutions for CBA</li> <li>3. Understand routes to market and high level costs</li> <li>4. Prioritise solutions for Alpha phase</li> <li>5. Develop market insight report</li> </ol> <p>Milestone(s):</p> <ul style="list-style-type: none"> <li>- Market insight report: Market insight report prepared with relevant inputs to enable the success of the CBA (WP5). (£14,966).</li> </ul>	
Milestone 5	Work package 5: Conceptual solutions and outline CBA	June 30, 2023	<p>Overall work package objectives:</p> <p>This work package will focus on developing and testing proposals for heat storage technologies to be used to deliver increased flexibility from domestic heat, as compared to the prevailing heat pump technology alone including consideration of the possible flexibility products required in support of the varying technology archetypes. A preliminary Cost/Benefit Assessment will be carried out, examining the uptake potential, testing assumptions regarding the potential benefits of flexibility from heat (e.g. mitigating heat load during network peaks, or providing services to the ESO), and</p>	£26,647

			<p>assessing the costs of delivery. The deliverable from this work will be a prioritised set of solutions as the starting point for subsequent phases and a Cost/Benefits Assessment report.</p> <p>Key tasks:</p> <ol style="list-style-type: none"> <li>1. Define counterfactual for non-flexible HP roll-out</li> <li>2. Estimate flexibility potential from candidate solutions</li> <li>3. Identify potential use cases for heat flexibility services</li> <li>4. Preliminary Cost/Benefit Assessment</li> <li>5. Summarise potential heat flexibility products for Alpha phase</li> <li>6. Develop Cost/Benefit assessment report</li> </ol> <p>Milestone(s):</p> <ul style="list-style-type: none"> <li>- Cost/Benefit assessment report: CBA completed that sufficiently tests the potential value of flexible heat storage solutions and the hypotheses put forward for services/incentives to enable their uptake.</li> <li>- Solutions prioritised and identified to take forward for Alpha, and go/no-go decision made possible. (£26,647).</li> </ul>	
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Milestone 6	Work package 6: Assessment of barriers and enablers	June 30, 2023	<p>Overall work package objectives: This work package will focus on developing an assessment of the key barriers to overcome and enablers needed to make the proposed solutions successful. This will include consideration of the supply chain, customer propositions, roles and responsibilities, as well as potential regulatory barriers and the need for derogations to enable the demonstration. The deliverable from this work will be a barriers and enablers report.</p> <p>Key tasks:</p> <ol style="list-style-type: none"> <li>1. Identify barriers and risks to candidate heat flexibility products</li> <li>2. Develop mitigation approach for Alpha/Beta phases</li> </ol> <p>Milestone(s):</p> <ul style="list-style-type: none"> <li>- Barriers and enablers report complete: Barriers and enablers report completed sufficient to inform final feasibility testing of candidate solutions for Alpha phase, and to inform mitigation strategies to take forward for any future phases. (£2,538).</li> </ul>	£2,538
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## **14. USE OF LOGO**

The Funding Party and the Project Partners, External Funders and Project Supporters or subcontractors<sup>18</sup> 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.

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<sup>18</sup> 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 (the "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, 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 (the "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

<b>SIF Project Direction costs</b>	
Cost Category	Total Project costs (£)
Labour	109,160
Materials	0
Subcontracting	0
Travel and subsistence	0
Other costs	0
<b>Total</b>	<b>109,160</b>

<b>Project finances</b>				
Project Partner	Total project costs (£)	Project Compulsory Contribution (%) <sup>19</sup>	Project Compulsory Contribution (£)	Total SIF Funding requested (£)
UK POWER NETWORKS: LONDON POWER NETWORKS PLC	18,965	100%	18,964	1
BARINGA PARTNERS LLP	79,670	1%	1,000	78,670
TEPEO LTD	3,750	0%	0	3,750
GREATER LONDON AUTHORITY HOLDINGS LIMITED	2,500	100%	2,499	1
PASSIV UK LIMITED	4,275	0%	0	4,275
<b>Total</b>	<b>109,160</b>	<b>26%</b>	<b>22,463</b>	<b>86,697</b>

<sup>19</sup> The Project contribution is calculated as percentage of the SIF Funding requested per Project Partner and for the Project.

**ANNEX 2 TO SCHEDULE: TEMPLATE OF BANK ACCOUNT DETAILS TO BE PROVIDED TO NG ESO ([revenue.invoice@nationalgrideso.com](mailto: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)