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Date: 13 December 2024

Dear Northern Powergrid (Northeast) PLC,

**SIF Project Direction ref:** NPG/FLEX-STORE/GHF/Rd4\_Discovery

Northern Powergrid (Northeast) PLC submitted FLEX-STORE FLEXible STORE of electrified thermal energy (the Project) to be considered for funding through the Discovery Phase of Round 4 of the Strategic Innovation Fund (SIF). In our<sup>1</sup> SIF Funding Decision issued on 1st January 2025, we selected the Project<sup>2</sup> 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.

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 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 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

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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/decision/updated-sif-governance-document>

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.<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 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.<sup>5</sup>
- Set out the Project budget that the Funding Party must report against and how variations in the Project budget will be reported.<sup>6</sup>
- Where applicable, set out special information sharing requirements applicable to the Project.<sup>7</sup>
- Set out the mechanism for the Funding Party receiving the SIF Approved Amount as set out in the SIF Funding Direction.<sup>8</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>9</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> 'SIF Funding Amount' detailed under Point 5 – 'Condition President' of this SIF Project Direction.

<sup>6</sup> 'Annex 1 – Project Budget.

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

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

<sup>9</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, Decentralisation & Digitalisation**

**For and on behalf of the Authority**

## Schedule to SIF Project Direction

### 1. PROJECT DETAILS

SIF Project Direction reference: NPG/FLEX-STORE/GHF/Rd4\_Discovery

Application number: 10145456

Project title: FLEX-STORE FLEXible STORE of electrified thermal energy

Innovation Challenge/Project Phase: Greater heat flexibility/ Discovery Phase Round 4

Project start date: 13 December 2024

Project end date: 12 May 2025

SIF Approved Amount for SIF Funding: £148,816

### 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 FLEX-STORE FLEXible STORE of electrified thermal energy (the "Project") as a condition of it being funded under the SIF Funding Mechanism.<sup>10</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.

**Table 1. Project Partners**

TOGETHER HOUSING ASSOCIATION LIMITED
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<sup>10</sup> The SIF Funding Return Mechanism is defined in the SIF Governance Document.

WSP UK LIMITED UNIVERSITY OF BIRMINGHAM
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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 completion of the Discovery Phase, the Funding Party must provide evidence to the Monitoring Officer that it has incorporated learnings and maintain distinction from other flexible heat projects, such as Watt Heat, SHIELD, Heatropolis and the NZIP-funded EXTEND 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 £148,816 (as detailed under Section 1: Project details of this Project Direction) will be recovered by National Energy System Operator from GB customers and transferred to the Funding Party. The Funding Party is responsible for notifying National Energy 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 Energy System Operator, the

reverse applies. The Funding Party must provide bank account details to National Energy 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 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)<sup>11</sup> and DPA (Data Protection Act) 2018<sup>12</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.

## 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 Question 7 and Appendix Question 9 in the Funding Party's Application.

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<sup>11</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>12</sup> <https://www.legislation.gov.uk/ukpga/2018/12/contents/enacted>

**Table 2. Project milestones<sup>13</sup>**

Reference	Project milestone	Deadline	Overall objectives and key tasks	SIF Funding Request
Milestone 1	WP 1 - Feasibility of Electrified Thermal Storage Products	13 May 2025	<ol style="list-style-type: none"> <li>1. Conduct a comprehensive review and evaluation of the specifications and performance characteristics of existing and emerging power-to-dispatchable heat/cold technologies.</li> <li>2. Consider factors such as heat efficiency and storage capacity, and identify sustainable products for integration across various energy sectors and scenarios, including residential, commercial, and industrial applications</li> <li>3. Assess the potential impact of power-to-heat technologies on grid flexibility and resilience by examining how they can absorb excess renewable energy during periods of low demand and release stored heat when needed, thereby reducing grid congestion and enhancing the stability of energy supply</li> </ol>	
Milestone 2	WP 2 - Supporting Vulnerable Customers During Grid Outages	13 May 2025	<ol style="list-style-type: none"> <li>1. Map requirement of the technical capabilities of the electrified thermal storage systems in providing backup heat and cooling during outages, including duration of heating, efficiency, and system recovery post-outage.</li> <li>2. Define and identify vulnerable customer groups who would benefit most from electrified thermal storage backup services.</li> </ol>	

<sup>13</sup> As outlined in in the Application or Project Plan appendix.

			<p>Collaborate with housing assocaites, local councils, consumer bodies, and energy suppliers</p> <p>3. Conduct surveys, interviews, and focus groups with vulnerable customers to gather feedback on the use of such systems or products.</p> <p>4. Incorporate insights from stakeholder engagement and technical assessments to provide recommendations on system designs tailored for vulnerable customers.</p> <p>5. Conduct a risk assessment of different outage scenarios and how such systems can mitigate these risks for vulnerable customer groups.</p>	
Milestone 3	WP 3 - Exploration of Market Mechanisms	13 May 2025	<ol style="list-style-type: none"> <li>1. Investigate innovative market mechanisms for integrating electrified heat storage</li> <li>2. Gather insights from stakeholders to identify potential barriers and opportunities</li> <li>3. Identify Opportunities for Innovative Market Mechanisms and Signals</li> </ol>	
Milestone 4	WP 4 - Planning of Alpha Phase	13 May 2025	<ol style="list-style-type: none"> <li>1. Technical Assessment Framework Development</li> <li>2. High level Cost-Benefit Analysis Methodology</li> <li>3. Partnership Development Strategy</li> </ol>	
Milestone 5	WP 5 - Dissemination and Communication	13 May 2025	<ol style="list-style-type: none"> <li>1. Engage with stakeholders to communicate project findings and promote the adoption of electrified heat storage as a flexible resource for distribution networks.</li> <li>2. Write a conference paper on the results of the findings.</li> <li>3. Create other sources of dissemination such as a close down report, media release, and public webinar.</li> </ol>	



Making a positive difference  
for energy consumers

			4.Present project results at relevant conferences and workshops.	
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## **2. USE OF LOGO**

The Funding Party and the Project Partners, External Funders and Project Supporters or subcontractors<sup>14</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.

## **3. 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.

## **4. 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>14</sup> As detailed in the Application.

## **5. 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:

- 13 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
- 14 to reflect amendments made to the Licence.

## **6. 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	£168,128
Materials	£-
Subcontracting	£-
Travel and subsistence	£8,880
Other costs	£-
<b>Total</b>	<b>£177,008</b>

Project Partner	Total project costs (£)	Project contribution (£)	Total SIF Funding requested (£)	Project contribution (%)
NORTHERN POWERGRID LIMITED	£11,250.00	£1,350.00	£9,900.00	
TOGETHER HOUSING ASSOCIATION LIMITED	£12,000.00	£11,999.00	£1.00	
University of Birmingham	£45,888.00	£4,588.00	£41,300.00	
WSP UK LIMITED	£107,870.00	£10,255.00	£97,615.00	
<b>Total</b>	<b>£177,008.00</b>	<b>£28,192.00</b>	<b>£148,816.00</b>	<b>19%</b>

**ANNEX 2 TO SCHEDULE: TEMPLATE OF BANK ACCOUNT DETAILS TO BE PROVIDED TO EITHER NGT ([BOX.GSOSETTLEMENTS@NATIONALGRID.COM](mailto:BOX.GSOSETTLEMENTS@NATIONALGRID.COM)) OR NESO ([revenue.invoice@nationaleso.com](mailto:revenue.invoice@nationaleso.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)