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Date: 07 October 2024

Dear Southern Gas Networks Plc,

**SIF Project Direction ref: SGN/HyScale LOHC Phase 2b/SIFEPGPSO/Rd3 Alpha**

Southern Gas Networks Plc submitted HyScale LOHC Phase 2b (the Project) to be considered for funding through the Alpha Phase of round 3 of the Strategic Innovation Fund (SIF). This Project submitted an application straight to Alpha phase for SIF Funding. In our<sup>1</sup> SIF Funding Decision issued on 07 October 2024, we selected the Project<sup>2</sup> 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.

Southern Gas 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**

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 has not previously received funding through the Discovery Phase as the Project has applied to receive SIF Funding by submitting an application straight to Alpha Phase.

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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.

## **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 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.

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<sup>3</sup> <https://www.ofgem.gov.uk/decision/updated-sif-governance-document>

<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.

## **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>.

This SIF Project Direction constitutes notice pursuant to section 38A (Reasons for decisions) of the Gas Act 1986.

**Marzia Zafar**

**Deputy Director, Decentralisation & Digitalisation**

**For and on behalf of the Authority**

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<sup>11</sup> 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: SGN/HyScale LOHC Phase 2b/SIFEPGSO/Rd3 Alpha

Application number: 10131782

Project title: HyScale LOHC Phase 2b

Innovation Challenge/Project Phase: Enabling Power to Gas to Provide System

Optimisation / Alpha Phase round 3

Project start date: 07 October 2024

Project end date: 30 May 2025

SIF Approved Amount for SIF Funding: £451,849

### 2. PREAMBLE

This SIF Project Direction is issued by the Gas and Electricity Markets Authority (the "Authority") to Southern Gas Networks Plc (the "Funding Party") pursuant to the SIF Governance Document issued pursuant to Special Condition 9.13 of the Gas Transporter Licence (the "Licence"). It sets out the conditions to be complied with in relation to HyScale LOHC Phase 2b (the "Project") as a condition of it being funded under the SIF Funding Mechanism.<sup>12</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 SIF Funding Return Mechanism is defined in the SIF Governance Document.

**Table 1. Project Partners**

Cadent Gas Ltd
Northern Gas Networks Ltd
Wales and West Utilities Ltd
National Gas Transmission PLC
Environmental Resources Management Ltd
Framatome GmbH
Blue Abundance Ltd
Forschungszentrum Julich GmbH

**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 outline the plans for dissemination this should include wider industry and all relevant stakeholders including the Regulators.

**Condition 6**

Prior to the kick off meeting, the Project should provide a justification to the Monitoring Officer of the day rates for certain roles, particularly those associated with ERM, and the time allocated to the Director role and what each of these roles are bringing to the Project.

#### **4. COMPLIANCE**

The Funding Party must comply with Special Condition 9.13 of the Gas Transporter Licence (the "Licence"), the SIF Governance Document and with this SIF Project Direction.

#### **5. SIF APPROVED AMOUNT**

The SIF Approved amount of £451,849 (as detailed under Section 1: Project details of this Project Direction) will be recovered by National Gas Transmission from GB customers and transferred to the Funding Party. The Funding Party is responsible for notifying National Gas Transmission 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 Gas Transmission, the reverse applies. The Funding Party must provide bank account details to National Gas Transmission 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)<sup>13</sup> and DPA (Data Protection Act) 2018<sup>14</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 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.

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<sup>13</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>14</sup> <https://www.legislation.gov.uk/ukpga/2018/12/contents/enacted>

**Table 3. Project milestone<sup>15</sup>**

Reference	Project milestone	Deadline	Overall objectives and key tasks	SIF Funding Request
Milestone 1	Work package 1: Project Management	30 May 2025	<p>Overall objective: This work package is the overall management of the project to ensure the delivery of all work packages and deliverables on schedule and within the budget.</p> <p>Management of the project will be led by Blue Abundance, with input from the WP led organisations. The consortium will hold two weekly project meetings throughout the project to co-ordinate the WPs and ensure smooth information flow between the different activities.</p> <p>The HyScale SharePoint will be used for document sharing between the project partners. This has been used by all project partners since the inception of HyScale Phase 1.</p> <p>Additionally, formal periodic meetings will be held at appropriate time points in the project to review the technical, management and financial progress of the project. All project partners will contribute to the final report.</p> <p>Key tasks:</p>	£64,617.00

<sup>15</sup> As outlined in in the Application or Project Plan appendix.

			<ol style="list-style-type: none"> <li>1. A project kick-off workshop with all project participants and the sponsoring UK gas networks will be scheduled to cover the following topics:</li> <li>2. Frequency and management of project team meetings including the review of deliverables during the project. Typically, two weekly meetings are conducted.</li> <li>3. Coordination with potential demonstration project site teams to ensure seamless knowledge and data sharing.</li> <li>4. During the entire length of the project two weekly meetings will track project progress including deliverables and milestones.</li> <li>5. Management of risk register</li> <li>6. Updates to SharePoint for document sharing between the project partners, similar to that used in earlier HyScale phases.</li> <li>7. Monthly project progress and status updates</li> <li>8. End of Phase Report</li> </ol>	
Milestone 2	Work package 2: Cost benefit assessment	30 May 2025	Overall objective: Evaluate the economic benefit of using LOHC storage systems with electrolysers generating hydrogen under electricity price arbitrage, against systems using electrolysers alone without storage. The major focus of this project is long duration hydrogen storage options for gas networks taking advantage of energy price arbitrage, which aligns with the SIF round 3, challenge 4.	£127,268.00

			<p>Key tasks:</p> <ol style="list-style-type: none"><li>1. Completion of the cost benefit analysis template provided by Ofgem. A base case scenario will be defined (using inputs from all project partners including the supporting gas networks), against which the LOHC storage business case will be compared.</li><li>2. The baseline will have no storage, resulting in baseload operation of electrolyser, such that electrolyser energy supply follows average grid carbon intensity, there are no grid services provided due to lack of electrolyser flexibility and the cost of electricity supply is based on annual average wholesale price.</li><li>3. Model the sizing and operation of electrolyser with LOHC storage. This enables flexible operation of the electrolyser to respond to system needs based on hourly renewable generation, resulting in lower energy supply costs (by avoiding operation during peak demand hours) and emission intensity. Furthermore, this results in better alignment with renewable generation which can help to reduce curtailment as well as alleviate network constraints, by siting electrolysers closer to renewable generation capacities. Finally, flexible electrolyser operation can also help with real time system balancing and reducing need for redispatch or reliance on fossil generation for supply and demand balance.</li><li>4. Undertake detailed techno economic modelling to calculate the system benefits of flexible electrolyser operation with LOHC storage to satisfy system flexibility needs, e.g. reducing renewable curtailment (TWh) and</li></ol>	
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			<p>need for dispatchable capacity (GW). This will be performed using Integrated System Dispatch Model (ISDM), ERM's in-house model for analysis of future decarbonised and net zero energy systems.</p> <p>5. Flexible operation of electrolyzers and resulting reduction in energy costs + grid flexibility revenues can reduce LCOH, accelerating uptake of hydrogen for large industrial offtakers, hydrogen peaking power generation or for domestic heating.</p> <p>6. The analysis will follow the approach of identifying the storage sizing requirements and estimate potential savings on LCOH.</p> <p>7. The balancing model in the FEED considered the use of only OneReactors. As a result, the whole system capacity was designed for the most extreme reaction conditions. The FEED identified that by separating out the OneReactor and dehydrogenation reactors capacity, systems can be designed for milder conditions impacting equipment sizing, throughput and relative reaction rates. Here an evaluation will be made of whether an economic benefit can be achieved by changing the plant configuration, while still meeting minimum technical requirements.</p>	
Milestone 3	Work package 3: Technical Evaluation & Research Roadmap	30 May 2025	Overall objective: The FEED study identified a variety of technical and research aspects for future advances in LOHC technology that benefit energy network use cases. In this work package we will investigate topics specific to LOHC long duration hydrogen storage used under energy price arbitrage scenarios.	£92,569.00

		<p>Evaluate heat &amp; system integration for LOHC systems with electrolyzers. Alkaline electrolyser technology was assumed for the FEED study due to greater availability of data and technological maturity. Other technologies such as solid oxide electrolyzers (SOEC) use a steam feed of around 100-200 °C and operate at elevated temperatures to achieve higher electrolysis efficiency and hold the potential for heat integration with the LOHC process enhancing system wide cost benefits. Additionally, several other auxiliary systems and peripherals (e.g., instrument air, cooling water circuit, etc.) can be shared between the hydrogen generation plant (electrolyser) and the storage and release plant (LOHC) to further reduce CAPEX and potentially OPEX by efficient system design and less redundant systems.</p> <p>Furthermore, a research roadmap will be created to address potential technical challenges of the BT-based LOHC storage system specific to the energy network use cases identified in the scale-up and balancing model studies of the FEED project. This roadmap will include a literature assessment, scoping, and determination of the research agenda for the Beta phase.</p> <p>FZJ will conduct the development of the Research roadmap (WP3, deliverables D3, D4, D5, D6)</p> <p>Key tasks:</p>	
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		<p>1. A system integration review with several electrolyser technologies will be conducted.</p> <ul style="list-style-type: none"> <li>• Analysing different electrolyser technologies for coupling with a LOHC plant at one site / operation in tandem</li> <li>• Assessment of electrolyser technology with best integration potential for coupling with LOHC; heat &amp; material integration:             <ul style="list-style-type: none"> <li>- Cooling hydrogenation reaction --&gt; Co-production of steam potentially used as feed for electrolyser</li> <li>- Share/integrate auxiliaries, e.g., instrument air, cooling water, inerting system, etc.</li> <li>- Heat &amp; mass balance optimisation; pinch analysis</li> <li>- Possible safety &amp; regulatory implications</li> <li>- Contact potential electrolyser manufacturers</li> </ul> </li> </ul> <p>2. The research roadmap will focus on the following topics:</p> <ul style="list-style-type: none"> <li>• Reactor selection and split between specialized Dehydrogenation reactor / OneReactor for both the electrolyser and ATR scenarios</li> <li>• LOHC cycle stability with preferred reactor operating conditions</li> <li>• LOHC aging under inert and environmental atmospheres</li> <li>• Techno-economic assessment             <ul style="list-style-type: none"> <li>- of the optimal <math>\Delta DOH</math> for proposed HyScale storage cycles</li> <li>- of the optimal operating conditions regarding side product formation and with regard to CAPEX of LOHC regeneration e.g. through active carbon filters</li> </ul> </li> </ul>	
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			<ul style="list-style-type: none"> <li>• LOHC compatibility with salt caverns including assessment of potential cavern liners</li> </ul>	
Milestone 4	Work package 4: Site Evaluations	30 May 2025	<p>Overall objective: The UK site related aspects for the demonstration project will be assessed.</p> <ul style="list-style-type: none"> <li>• Site evaluation of the SGN H100, NGN's NERV or Cadent's London sites.</li> <li>• Further assessment meetings will be carried out with distilleries and other industrial units across SGN's territory to identify any additional potential sites for the LOHC demonstration project.</li> <li>• Define site interfaces and ancillary systems required for the full operations of the LOHC demonstration plant.</li> <li>• Obtain confirmation from site teams.</li> </ul> <p>Key tasks:</p> <ol style="list-style-type: none"> <li>1. Meetings conducted with engineering teams at the identified sites (NERV, H100 and East London sites). This will cover the various interfaces for the LOHC plant.</li> <li>2. Share a comprehensive interface requirement information package with the above sites, requesting their inputs.</li> <li>3. Review of information received from various sites used to define the site interface for the LOHC plant for each of these sites.</li> </ol>	£40,266.00

			<p>4. Gain confirmation of the site interface design from each site's engineering team.</p> <p>5. Conduct introductory calls with new potential sites, shortlist those that are able to host a LOHC demonstration site to meet the SIF beta phase goals.</p> <p>6. Conduct the above interface assessment with these shortlisted sites.</p> <p>7. Final report on WP4 - Site evaluation</p>	
Milestone 5	Work package 5: Planning Authority Assessment	30 May 2025	<p>Overall objective: In the FEED study, a Roadmap to Consent for the HyScale LOHC demonstration plant was provided, considering a site in Scotland. The engineering design and possible sites to consider for a demonstrator plant have changed since the roadmap was written.</p> <ul style="list-style-type: none"> <li>In this work package this Roadmap to Consent will be reviewed, identifying material changes and updating as required to suit the latest engineering design, technologies on site and possible additional locations for the demonstrator plant.</li> <li>Depending on the final selection of a suitable site, ERM may approach the planning authority and provide additional pre-application engagement services. The completion of the task will further depend on the timelines and workloads of the local council. Prior to proceeding we will seek confirmation of expected turnaround time. Not proceeding will not impact the overall Alpha phase objectives.</li> </ul> <p>Key tasks:</p>	£34,757.00

		<ol style="list-style-type: none"><li>1. Review the roadmap to consent, identifying material changes and updating as required to suit the latest engineering design, technologies on site and possible locations for the demonstrator plant.</li><li>2. Two new site options are now being considered for the development of a hydrogen production and storage facility, including one in East London and the other in Gateshead. The earlier site considered in the FEED study was based in Scotland.</li><li>3. ERM will consider the differences between the two environmental regulators (SEPA vs EA) and highlight any material differences in the environmental permitting strategy based on the difference in site location.</li><li>4. ERM will review any differences the amendment to the electrolyser type might have and will summarise material findings in the operational permitting strategy outlined in the original consenting report.</li><li>5. For the pre-application planning enquiry, if we decide to proceed, ERM will assist in the preparation of the submission pack by preparing a supporting letter explaining the details of the proposal and an initial assessment against policy, completion of the pre-app forms, submitting the application to the Council, and acting as Agent, liaising with officers throughout the pre-app process and providing further professional advice following receipt of the Council's opinion. The site engineering team will produce planning drawings in-house.</li></ol>	
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Milestone 6	Work package 6: Technology and Commercial Watch	30 May 2025	<p>Overall objective: Phase 1 recommended a multi-pronged approach to develop at scale inter-seasonal hydrogen storage solutions by 2030. The FEED study monitored technical and commercial developments, for the following storage technologies and hydrogen gas network models.</p> <ul style="list-style-type: none"> <li>• Hydrogen storage in geological formations such as salt caverns, depleted oil and gas reservoirs.</li> <li>• Ammonia used for hydrogen storage.</li> <li>• Developments of alternative LOHC carriers such as BT, DBT, Toluene (led by Framatome and FZJ) for both hydrogen storage and in import and export supply chain.</li> <li>• Developments towards a UK-wide hydrogen transmission system (e.g. Future Grid, Project Union).</li> <li>• UK hydrogen production projects and CO2 sequestration plans.</li> <li>• The import and export of hydrogen in international supply chains.</li> </ul> <p>This would cover compressed, liquid, or liquid carriers of hydrogen.</p> <p>This monitoring will continue during this Alpha phase.</p> <p>Key tasks:</p> <p>1. Developments in the both the technology and commercial readiness will be monitored through tracking demonstration projects and literature analysis of these technologies, including any cost estimates that emerge in literature.</p>	£36,385.00
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			<p>2. To access the most up to date information for each storage technology, ERM will build on current work and contacts from leading EU storage projects (such as Hypster and HySecure) and reach out to key industry and academic stakeholders, such as those at the University of Edinburgh involved in the HyStorPor project.</p> <p>3. Engagement with key gas network (e.g. National Grid) and government stakeholders will be used to understand developments and timelines for a UK-wide hydrogen transmission system. ERM will track developments in hydrogen production projects through our own involvement in projects being developed in the UK (such as Gigastack, multiple industrial cluster projects) and through monitoring the outcomes of UK funding calls such as the Net-Zero Hydrogen Fund and the Cluster Sequencing calls.</p> <p>4. Analysing for key trends, technical and commercial progression</p> <p>5. ERM will produce a report that summarises the state of the art and recent developments in hydrogen storage and the UK hydrogen sector.</p> <p>6. A first slide based report will be produced by the third month of the project, and will be updated with the most recent developments in the final month of the project.</p>	
Milestone 7	Work package 7: Design of SIF Beta Phase	30 May 2025	Overall objective: To work towards and develop the Beta demonstration through the Alpha Phase, Blue Abundance will develop a 'live' project plan for the beta demonstration. The project plan will be developed from the	£55,987.00

			<p>final outputs for each work package, to reflect the findings of the project work package.</p> <p>Key tasks:</p> <p>1. The Beta phase plan will include:</p> <ul style="list-style-type: none"><li>• The beta phase project plan and resourcing.</li><li>• Commitment from Beta phase partners and their scope</li><li>• Final site selection.</li><li>• Final costing, budget, cash flows for the demonstration project.</li><li>• This will include completion of all requirements for application for SIF Beta funding.</li></ul>	
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#### **14. USE OF LOGO**

The Funding Party and the Project Partners, External Funders and Project Supporters or subcontractors<sup>16</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>16</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 9.13 of the Gas Transporter 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, 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 9.13 of the Gas Transporter 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 38A (Reasons for decisions) of the Gas Act 1986.

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	£502,300
Materials	£0
Subcontracting	£0
Travel and subsistence	£0
Other costs	£1,000
<b>Total</b>	<b>£503,300</b>

Project Partner	Total project costs (£)	Project contribution (£)	Total SIF Funding requested (£)	Project contribution (%)
Southern Gas Networks PLC	£58,357	£6,253	£52,104	
Cadent Gas Ltd	£4,890	£489	£4,401	
Northern Gas Networks Ltd	£10,872	£1,092	£9,780	
Wales and West Utilities Ltd	£1,416	£142	£1,274	
National Gas Transmission PLC	£3,220	£322	£2,898	
Environmental Resources Management Ltd	£163,851	£16,988	£146,863	
Framatome GmbH	£98,078	£9,832	£88,246	
Blue Abundance Ltd	£117,760	£11,798	£105,962	
Forschungszentrum Julich GmbH	£44,856	£4,535	£40,321	
<b>Total</b>	<b>£503,300</b>	<b>£51,451</b>	<b>£451,849</b>	<b>10%</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 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)