

Northern Gas Networks Limited
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Date: 22nd September 2025

Dear NORTHERN GAS NETWORKS LIMITED,

SIF Project Direction ref: Project reference

NORTHERN GAS NETWORKS LIMITED submitted Gas Network Evolution Simulator (GNES) (the Project) to be considered for funding through the Alpha Phase of Round 4 of the Strategic Innovation Fund (SIF). In our¹ SIF Funding Decision issued on 22nd September 2025, we selected the Project² for conditional funding for the Round 4 Alpha Phase and as a result we are now issuing this SIF Project Direction to implement that decision.

NORTHERN GAS NETWORKS 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.

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.

The Project previously received SIF Funding for the Round 4 Discovery Phase³ and submitted an Application for the Project to be considered for SIF Funding for the Round 4 Alpha Phase of the SIF. As stated above, the Project has been selected by Ofgem to receive SIF Funding for the Round 4 Alpha Phase.

Role of UK Research & Innovation (UKRI)

As per Chapter 1 of the SIF Governance Document⁴ the role of UKRI is to deliver the SIF in line with the SIF Governance Document - administering the funding programme, monitoring the delivery of Projects, collating data from Projects on benefits, making recommendations to Ofgem on operational matters, supporting third-party innovators and, where possible, successful Projects to become 'business as usual' activities. To support the success of the Projects and the SIF programme, we expect that the Funding Party and Project Partners collaborate with Ofgem and UKRI.

SIF Project Direction

Paragraph 5.14 of the SIF Governance Document states that a SIF Project Direction will:

- Set out the Project-specific conditions, to which the Funding Party is committing in accepting SIF Funding.⁵
- Require the Funding Party to undertake the Project in accordance with the commitments made in the Application. Where appropriate, the SIF Project Direction may therefore include extracts from the Application or refer to specific sections of the Application.⁶
- Where applicable, set out conditions (such as Project stage gates) linked to milestones and deliverables, which Projects must meet.⁷
- Set out the SIF Approved Amount for the Project, that will form part of the calculation contained in the SIF Funding Direction issued by the Authority under chapter 7 of the SIF Governance Document.⁸
- Set out the Project budget that the Funding Party must report against and how variations in the Project budget will be reported.⁹

³ The Project Directions for Round 4 of the Discovery Phase are available at:
<https://www.ofgem.gov.uk/publications/strategic-innovation-fund-round-4-discovery-projects-approved-funding>

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

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

⁶ As above.

⁷ As above

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

⁹ 'Annex 1 – Project Budget.

- Where applicable, set out special information sharing requirements applicable to the Project.¹⁰
- Set out the mechanism for the Funding Party receiving the SIF Approved Amount as set out in the SIF Funding Direction.¹¹

All SIF Project Direction requirements are detailed in the Schedule to this SIF Project Direction.

Decision

Provided the Funding Party complies with the SIF Governance Document and with the Schedule to this SIF Project Direction, the Project is deemed to be an Eligible SIF Project¹².

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

Marzia Zafar

Deputy Director, Decentralisation & Digitalisation

For and on behalf of the Authority

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

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

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

Schedule to SIF Project Direction

1. PROJECT DETAILS

Application number: 10168054

Project title: Gas Network Evolution Simulator (GNES)

Innovation Challenge/Project Phase: Embedding resilience / Round 4 Alpha Phase

Project start date: 1st October 2025

Project end date: 31st May 2026

SIF Approved Amount for SIF Funding: £438,726

2. PREAMBLE

This SIF Project Direction is issued by the Gas and Electricity Markets Authority (the "Authority") to NORTHERN GAS NETWORKS LIMITED (the "Funding Party") pursuant to the SIF Governance Document issued pursuant to Special Condition 5.7 of the Gas Transporter Licence. It sets out the conditions to be complied with in relation to Gas Network Evolution Simulator (GNES) (the "Project") as a condition of it being funded under the SIF Funding Mechanism.¹³

Unless otherwise specified, defined terms in this SIF Project Direction have the meaning given to them in the Licence or Appendix 1 of the SIF Governance Document.

References to specific sections of the Funding Party's Application in this SIF Project Direction are, for ease of reference, made by referring to the section number in the Funding Party's Application.

3. PROJECT-SPECIFIC CONDITIONS

In accepting funding for the Project, the Funding Party is subject to the following Project-specific condition(s):

Condition 1

The Funding Party must not spend any SIF Funding until contracts are signed with the Project Partners named in Table 1 for the purpose of completing the Project.

Table 1. Project Partners

SOUTHERN GAS NETWORKS PLC

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

CENTRE FOR ENERGY EQUALITY LTD CADENT GAS LIMITED NATIONAL GRID ELECTRICITY SYSTEM OPERATOR LIMITED LANE CLARK & PEACOCK LLP

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 Department for Energy Security and Net Zero during the Alpha Phase.

Condition 4

The Project will be allowed a flexible start date and duration within the 8-month period from the date the Project Direction is issued. The Project must tell the Monitoring Officer the start date and end date of the Project.

Condition 5

Prior to the Project kick off meeting, the Funding Party must provide the Monitoring Officer with a clear outline of the process, roles and responsibilities for ABM model validation in the Project Plan to a greater level of detail.

Condition 6

Prior to the Kick-off meeting, the Funding Party must provide to the Monitoring Officer clarification on what the Project's output will be at the end of Alpha Phase and how they plan to scale up the GNES solution at national level.

Condition 7

Prior to the Kick-off meeting, the Funding Party must provide to the Monitoring Officer commitment that the ABM tool and any data it uses will be subject to Open Data Triage in accordance with Data Best Practice.

4. COMPLIANCE

The Funding Party must comply with Special Condition 5.7 of the Gas Transporter Licence, the SIF Governance Document and with this SIF Project Direction.

5. SIF APPROVED AMOUNT

The SIF Approved amount of £438,726 (as detailed under Section 1: Project details of this Project Direction) will be recovered by National Gas from GB customers and transferred to the Funding Party. The Funding Party is responsible for notifying National Gas 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, the reverse applies. The Funding Party must provide bank account details to National Gas 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 to Beta Phase and, if the Funding Party submits an Application for the Project for 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 5 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 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 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 the Data Best Practice Guidance issued by Ofgem with 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, Data Best Practice Guidance, Funding Parties must have a data triage process. Where multiple Project Partners are collaborating on a Project, the consortium must adopt a consistent Open Triage Process for the data related to the Project. Ofgem may require that Project information and data is also shared with other specified parties, such as parties working on complementary innovation funding programmes (subject to redaction of sensitive data).

12. CYBER SECURITY

It is the responsibility of the Funding Party and all Project Partners to implement and maintain appropriate security measures to protect personal data in accordance with The GDPR (General Data Protection Regulation)¹⁴ and DPA (Data Protection Act) 2018¹⁵. Protection of computer systems from unauthorised access or being otherwise damaged or made inaccessible must be in place alongside effective working practices. These must be maintained in line with the Funding Party's IT management strategies and policies.

13. PROJECT WORK PACKAGES

The Funding Party must provide an outline in its end of Project Phase meeting with its UKRI Monitoring Officer that verifies the Project work packages have been achieved or explains why they have not.

Project Work Packages are outlined below in Table 2, based upon details contained within Question 7 and Appendix Question 9 in the Funding Party's Application.

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

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

Table 2. Project Work Packages¹⁶

Reference	Project Work Packages	Deadline	Overall objectives and key tasks	SIF Funding Request
Milestone 1	Model Development	30/12/2025	<ol style="list-style-type: none"> 1. Update the specification for the GNES model architecture. 2. Integrate new system logic to simulate interactions between gas and electricity networks. 3. Extend agent behavioural modelling to include micro-level drivers (e.g. tenure, income, social influence). 4. Incorporate regional variability in infrastructure, and decarbonisation options potential. 5. Refine dynamic agent decision-making processes based on updated policy and stakeholder insights. 6. Ingest relevant datasets from Discovery and new sources for validation and calibration. 7. Prepare baseline outputs and simulation runs to support WP3. 8. Collaborate with WP2 to ensure use case requirements are embedded in the model. 9. Prepare model codebase for integration into the visual platform under WP4. 	£157,941.36

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

Milestone 2	Stakeholder Engagement	15/01/2026	<ol style="list-style-type: none"> 1. Map and prioritise stakeholders across networks, government, local authorities, and civil society. 2. Deliver structured workshops and interviews to identify priorities, constraints, and expectations. 3. Co-design and validate at least three representative use cases for testing in WP1. 4. Define agent behaviour types and decision rules using stakeholder insights and expert input. 5. Identify risks to adoption, model relevance, and data gaps; log mitigation options. 6. Support WP1 with behavioural assumptions and WP4 with interface requirements. 7. Summarise all engagement activities and outputs into a final report for dissemination. 	£61,421.64
Milestone 3	Model Validation and Cost-Benefit Analysis (CBA)	28/02/2026	<ol style="list-style-type: none"> 1. Define model validation criteria and success thresholds based on partner and stakeholder priorities. 2. Conduct internal and external testing of GNES model across approved use cases. 3. Perform CBA for each scenario, quantifying system savings, consumer impacts, and avoided costs. 4. Consult with NGN, SGN, NESO, and other stakeholders to test commercial relevance and real-world usability. 5. Align outputs with regulatory, planning, and business-as-usual decision-making processes. 6. Identify opportunities and risks associated with commercialisation and adoption. 7. Produce a detailed CBA report, business case, and commercialisation roadmap. 	£70,196.16

Milestone 4	Platform and Visualisation Interface	28/02/2026	<ol style="list-style-type: none"> 1. Translate GNES model outputs into a format suitable for interactive visualisation. 2. Design a user interface with feedback from WP2 and initial platform users. 3. Build a prototype visualisation tool with filtering and mapping functionality. 4. Integrate data visualisation components, including spatial and demographic breakdowns. 5. Develop export tools (e.g. PDF report generation, scenario summaries) for planning use. 6. Conduct user testing sessions to refine the interface and usability. 7. Document user feedback and prepare technical guidance for ongoing development. 	£105,294.24
Milestone 5	Project Management and Knowledge Sharing	28/02/2026	<ol style="list-style-type: none"> 1. Set up and maintain project governance structures, including monthly coordination calls and reporting. 2. Track project progress, risks, and interdependencies using the PMT, Gantt chart, and risk register. 3. Coordinate all formal reporting to Ofgem/Innovate UK, ensuring alignment with SIF guidance and timelines. 4. Facilitate knowledge sharing through stakeholder briefings, public-facing reports, and Alpha learnings summary. 	£43,872.60

USE OF LOGO

The Funding Party and the Project Partners, External Funders and Project Supporters or subcontractors¹⁷ must not use the Innovate UK/UKRI and/or Ofgem logo for purposes associated with the Project in any circumstances.

As an alternative for use of both Ofgem and UKRI logos, all external Project communications must include the following standard form of wording:

- (i) "this project is funded by network users and consumers under the Strategic Innovation Fund, an Ofgem programme managed in partnership with UKRI."

For additional guidance, refer to the communications and media guidelines for competition winners, detailed as part of your delivery pack. These guidelines are designed to help with some suggestions and encourage you to take a proactive approach to communicating about your Project.

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. This includes taking part in annual events.

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.

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:

¹⁷ As detailed in the Application.

- (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.

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 5.7 of the Gas Transporter 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 5.7 of the Gas Transporter 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

SIF Project Direction costs	
Cost Category	Total Project costs (£)
Labour	500,681
Materials	-
Subcontracting	-
Travel and subsistence	750
Other costs	-
Total	501,431

Project Partner	Total project costs (£)	Project contribution (£)	Total SIF Funding requested (£)	Project contribution (%)
NORTHERN GAS NETWORKS LIMITED	18,056.00	1,806.00	16,250.00	
CADENT GAS LIMITED	9,096.00	9,095.00	1.00	
CENTRE FOR ENERGY EQUALITY LTD	270,000.00	27,000.00	243,000.00	
LANE CLARK & PEACOCK LLP	157,850.00	19,951.00	137,899.00	
NATIONAL GRID ELECTRICITY SYSTEM OPERATOR LIMITED	17,036.00	1,704.00	15,332.00	
SOUTHERN GAS NETWORKS PLC	29,393.00	3,149.00	26,244.00	
Total	£501,431.00	£62,705.00	£438,726.00	14%

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