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Date: 1st January 2026

Dear National Gas Transmission PLC,

National Gas Transmission PLC submitted Quantum optimisation for future gas network design (the Project) to be considered for funding through the Discovery Phase of Round 5 of the Strategic Innovation Fund (SIF). In our¹ SIF Funding Decision issued on 1st January 2026, we selected the Project² for conditional funding for the Round 5 Discovery Phase and as a result we are now issuing this SIF Project Direction to implement that decision.

National Gas Transmission 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 Document³ the role of UKRI is to deliver the SIF in line with the SIF Governance Document - administering the funding programme, monitoring the delivery of Projects, collating data from Projects on benefits, making

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

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

³ <https://www.ofgem.gov.uk/decision/updates-strategic-innovation-fund-governance-document>

recommendations to Ofgem on operational matters, supporting third-party innovators and, where possible, supporting successful Projects to become 'business as usual' activities. To support the success of the Projects and the SIF programme, we expect that the Funding Party and Project Partners collaborate with Ofgem and UKRI.

SIF Project Direction

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

- Set out the Project-specific conditions, to which the Funding Party is committing in accepting SIF Funding.⁴
- Require the Funding Party to undertake the Project in accordance with the commitments made in the Application. Where appropriate, the SIF Project Direction may therefore include extracts from the Application or refer to specific sections of the Application.
- Where applicable, set out conditions linked to milestones and deliverables, which Projects must meet.
- Set out the SIF Approved Amount for the Project, that will form part of the calculation contained in the SIF Funding Direction issued by the Authority under chapter 7 of the SIF Governance Document.⁵
- Set out the Project budget that the Funding Party must report against and how variations in the Project budget will be reported.⁶
- Where applicable, set out special information sharing requirements applicable to the Project.⁷
- Set out the mechanism for the Funding Party receiving the SIF Approved Amount as set out in the SIF Funding Direction.⁸

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

Decision

Provided the Funding Party complies with the SIF Governance Document and with the Schedule to this SIF Project Direction, the Project is deemed to be an Eligible SIF Project⁹.

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

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

⁶ 'Annex 1 – Project Budget.

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

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

⁹ The meaning 'Eligible SIF Project' is described in Chapter 2 of the SIF Governance Document.

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

Marzia Zafar

Deputy Director, Decentralisation & Digitalisation

For and on behalf of the Authority

Schedule to SIF Project Direction

1. PROJECT DETAILS

Application number: 10179238

Project title: Quantum optimisation for future gas network design

Innovation Challenge/Project Phase: Whole System Optimisation/ Discovery Phase
Round 5

Project start date: 1st January 2026

Project end date: 31st May 2026

SIF Approved Amount for SIF Funding: £148,434

2. PREAMBLE

This SIF Project Direction is issued by the Gas and Electricity Markets Authority (the "Authority") to National Gas Transmission PLC (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 Quantum optimisation for future gas network design (the "Project") as a condition of it being funded under the SIF Funding Mechanism.¹⁰

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

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

3. PROJECT-SPECIFIC CONDITIONS

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

Condition 1

The Funding Party must not spend any SIF Funding until contracts are signed with the Project Partners named in Table 1 for the purpose of completing the Project, except that on this occasion, National Energy System Operator (NESO) shall not be required to enter into contractual agreements (see Condition 5).

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

Table 1. Project Partners

NATIONAL ENERGY SYSTEM OPERATOR LIMITED
PA CONSULTING SERVICES 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 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

On this occasion, an exception shall apply to the standard requirements of the SIF Governance and Project Partner obligations. The National Energy System Operator (NESO) will provide support to the Project on the basis that no costs are requested, as set out in Annex 1. Under this exception, NESO shall only be required to: (i) attend End of Phase meetings, and (ii) review Project outputs. All other Project Partner obligations, including entering into contractual agreements, attending Kick-Off meetings, and providing Project Contributions, shall not apply.

Condition 6

Prior to the End of Phase meeting, the Funding Party must demonstrate how the Project will avoid creating dependence on a single technology provider.

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 £148,434 (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 into the Alpha Phase, or if the Funding Party submits an Application for the Project into the Alpha Phase but is not successful. Within this report, the Funding Party must submit information related to questions on Project delivery as detailed in Chapter 6, table 6 of the SIF Governance Document. An end of phase report template is available and can be requested from UKRI.

9. MONITORING

The Funding Party must comply with any reasonable request for information by its monitoring officer at UKRI and with related deadlines. Ofgem, with the support of UKRI, will together monitor Project delivery, impacts and benefits. Throughout the term of the Project, progress is monitored by UKRI through a monitoring officer. The monitoring officer is the first point of contact for official notifications, queries and correspondence with UKRI and the Authority, unless otherwise required by this SIF Project Direction.

As detailed in Chapter 6 of the SIF Governance Document, meetings with the monitoring officer will take place at the end of each Project Phase.

10. EVALUATION

The Funding Party has acknowledged when it submitted its Application for this Project, that reporting information and data gathered during the Project's timescales (as detailed in Section 1 of this SIF Project Direction) will be used to evaluate Project performance. In addition, the Funding Party may be required to provide requested information outside of the Project timescales and, in particular, for the period from the Project end date to the end of the SIF Programme. Further data and reporting information may be requested (frequency and method based on requirement) outside of standard monitoring and reporting requirements as deemed necessary. Further data and information requirements must be complied with by the Funding Party and Project Partners.

11. DATA SHARING

As set out in Chapter 3 of the SIF Governance Document, the Funding Party must follow the Data Best Practice Guidance issued by Ofgem in regard to all data gathered or created in the course of a Project. We expect the Funding Party to document any reasons, such as commercial sensitivities, for desensitising data. As defined by, and in accordance with, the Data Best Practice Guidance, Funding Parties must have a data

triage process. Where multiple Project Partners are collaborating on a Project, the consortium must adopt a consistent Open Triage Process for the data related to the Project. Ofgem may require that Project information and data is also shared with other specified parties, such as parties working on complementary innovation funding programmes (subject to redaction of sensitive data).

12. CYBER SECURITY

It is the responsibility of the Funding Party and all Project Partners to implement and maintain appropriate security measures to protect personal data in accordance with The GDPR (General Data Protection Regulation)¹¹ and DPA (Data Protection Act) 2018¹². Protection of computer systems from unauthorised access or being otherwise damaged or made inaccessible must be in place alongside effective working practices. These must be maintained in line with the Funding Party's IT management strategies and policies.

13. PROJECT MILESTONES

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

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

¹¹ https://ec.europa.eu/info/law/law-topic/data-protection/data-protection-eu_en

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

Table 2. Project milestones¹³

Reference	Project milestone	Deadline	Overall objectives and key tasks	SIF Funding Request
Milestone 1	Project Management	27/03/2026	<p>Describe overall Work Package Objectives <i>Establish delivery governance, stakeholder engagement plan, and tracking tools.</i></p> <p>Describe the high level tasks to achieve the work package objectives.</p> <p>0. Contract signing</p> <p>1. Project management - weekly meetings, regular progress updates, final reporting</p> <p>2. Organise and run Kick-off workshop to align context, objectives, risks, and stakeholder roles</p> <p>3. Monitor progress, manage risks, and ensure timely reporting and documentation</p> <p>4. Develop and maintain stakeholder engagement plan to inform use case development</p>	£18,139.00

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

Milestone 2	Stakeholder Engagement and Creation of Use Case Long List	23/01/2026	<p>Describe overall Work Package Objectives <i>Engage National Gas and NESO teams to identify key modelling challenges constraining current optimisation capabilities</i></p> <p>Describe the high level tasks to achieve the work package objectives.</p> <p>1. Desk based Use Case identification - Conduct a structured review of existing projects, modelling tools, and strategic planning documents to compile a long list of planning and operational modelling challenges</p> <p>2. Problem owners engagement - Engage National Gas's Energy Systems & Resilience teams (data science and risk) and NESO's Strategic Energy Planning experts to add detail and expand challenge list</p> <p>3. Use Case formulation - Translate validated challenges into clearly defined modelling problems, specifying scope, context, and relevant dependencies to support feasibility assessment against quantum optimisation in WP3</p>	£29,627.00
Milestone 3	Shortlisting Target Use Cases for Quantum Optimisation	27/02/2026	<p>Describe overall Work Package Objectives <i>Assesses suitability of prioritised use cases for quantum-inspired optimisation</i></p> <p>Describe the high level tasks to achieve the work package objectives.</p> <p>1. Compatibility assessment of use cases with quantum-like optimisation - High level assessment on the compatibility of the prioritised use cases with quantum-like</p>	£47,013.00

			<p>optimisation. This will involve testing to what extent the use cases are suitable to being solved by quantum-inspired or digital annealing methods and techniques, and the likely benefit the application of these techniques will bring over traditional methods.</p> <p>2. Conduct high-level feasibility assessment - High level assessment of the complexity, timescale to implement, inputs required and expected value creation of implementing solving by quantum-like optimisation</p> <p>3. Down-select solution for practical assessment in Alpha - Facilitated workshop with key stakeholders across Energy System & Resilience and Strategy Energy Planning teams to down-select the single most promising solution and corresponding use-case for potential further development and validation in Alpha phase.</p>	
Milestone 4	Strategic value case and Alpha plan	27/03/2026	<p>Describe overall Work Package Objectives <i>Consolidate findings, define Alpha scope and build the strategic case for investment</i></p> <p>Describe the high level tasks to achieve the work package objectives.</p> <p>1. Develop high-level Alpha solution specification and plan - Create high-level specification for an Alpha solution and define key research questions to be explored in a future design-build-test phase of work</p> <p>2. Assess high-level feasibility and risk- Assess feasibility of selected solution. Identify key system-level risks and barriers to development of Alpha – e.g. data,</p>	£53,655.00

			<p>cyber, safety, regulatory compliance, etc.</p> <p>3. Develop high-level benefits case to support Alpha phase - Conduct a high-level cost-benefit analysis for 1 target use case, of proceeding to invest in an Alpha solution</p> <p>4. Technical Assessment and Alpha Plan Report - Compile findings and recommendations of activities conducted in WP2, WP3 and WP4 into a Technical Assessment Report (PPT format).</p> <p>5. Close-out workshop with National Gas and NESO stakeholders to discuss findings and shape next steps</p> <p>6. Discovery show and tell presentation</p>	
Milestone 5	Project Management	27/03/2026	<p>Describe overall Work Package Objectives <i>Establish delivery governance, stakeholder engagement plan, and tracking tools.</i></p> <p>Describe the high level tasks to achieve the work package objectives.</p> <p>0. Contract signing</p> <p>1. Project management - weekly meetings, regular progress updates, final reporting</p> <p>2. Organise and run Kick-off workshop to align context, objectives, risks, and stakeholder roles</p> <p>3. Monitor progress, manage risks, and ensure timely reporting and documentation</p> <p>4. Develop and maintain stakeholder engagement plan to inform use case development</p>	£18,139.00

14. USE OF LOGO

The Funding Party and the Project Partners, External Funders and Project Supporters or subcontractors¹⁴ must not use the Innovate UK/UKRI and/or Ofgem logo for purposes associated with the Project in any circumstances.

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

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

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

15. SHARING OF LESSONS LEARNED

The Funding Party is required to ensure that the sharing of lessons learned and the facilitation of knowledge transfer is conducted as effectively as possible, to ensure that all parties, and therefore all consumers including future consumers, can benefit from Projects.

As outlined in Chapters 3 and 6 of the SIF Governance Document, we require the Funding Party to work collaboratively with other Networks and third-party innovators to disseminate the learnings and data from Projects and ensure that these are publicly available.

16. COLLABORATION

The Funding Party must collaborate with third-party innovators as Project Partners, as well as work closely with other parties in the energy supply chain, as set out in Chapter 3 of the SIF Governance Document.

The Funding Party must collaborate with other parties and with UKRI to organise an annual conference in a format appropriate to enabling the building of consortiums and disseminating learning widely. The conference may be a single event for gas and electricity, or more than one event, as appropriate.

¹⁴ As detailed in the Application.

17. AMENDMENT OR REVOCATION

As set out in Chapter 7 of the SIF Governance Document, this SIF Project Direction may be amended or revoked under the following circumstances:

- (i) if the Funding Party considers that there has been a material change in circumstance that requires a change to the SIF Project Direction, and the Authority agrees; or
- (ii) to reflect amendments made to the Licence.

18. HALTING OF PROJECTS

This SIF Project Direction is subject to the provisions contained in Chapter 7 of the SIF Governance Document relating to the halting of Projects. By extension, this SIF Project Direction is subject to any decision by the Authority to halt the Project to which this SIF Project Direction relates and to any subsequent relevant SIF Funding Direction issued by the Authority pursuant to Special Condition 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	164,489
Materials	-
Subcontracting	-
Travel and subsistence	-
Other costs	3,000
Total	167,489

Project Partner	Total project costs (£)	Project contribution (£)	Total SIF Funding requested (£)	Project contribution (%)
National Gas Transmission PLC	20,519	2,519	18,000	
NATIONAL GRID ELECTRICITY SYSTEM OPERATOR LIMITED	0	0	0	
PA CONSULTING SERVICES LIMITED	146,970	16,537	130,433	
Total	£167,489.00	£19,056.00	£148,433.00	13%

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

Company name:

Primary Contact Details (only one contact permitted)

First Name:

Last Name:

Email address:

Mobile phone number:

Work phone number:

Address details

Address name:

Street address:

City:

State / region:

Post code:

PO box: (if applicable)

PO box post code: (if applicable)

Banking details

These should be evidenced in non-editable format. The evidence provided must show company name and bank details and it should be dated within the last 6 months.

Any of the below documents will suffice:

- Bank statement (scanned document)
- Void cheque
- Paying in slip
- Screenshot of online banking (showing a logged-in account with bank account and sort code, with browser visible)