

Cadent Gas Limited
Ansty Park, Pilot Way
Coventry, West Midlands
CV7 9JU

Direct Dial: 020 7901 7295

Email: Marzia.Zafar@ofgem.gov.uk

Date: 25 September 2023

Dear Cadent Gas Limited,

SIF Project Direction ref: CG/Digital Inspector/SIFIESRR/Rd2 Alpha

Cadent Gas Limited submitted Digital Inspector (the Project) to be considered for funding through the Alpha Phase of round 2 of the Strategic Innovation Fund (SIF). As explained in greater detail below, this Project previously received SIF Funding and completed a Discovery Phase for round 2 of the SIF. In our¹ SIF Funding Decision issued on 22 September 2023, we selected the Project² for conditional funding for the round 2 Alpha Phase and as a result we are now issuing this SIF Project Direction to implement that decision.

Cadent Gas 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 Project previously received SIF Funding for the round 2 Discovery Phase³ and submitted an Application for the Project to be considered for SIF Funding for the round 2

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 The Project Directions for round 2 of the Discovery Phase are available at: <https://www.ofgem.gov.uk/publications/strategic-innovation-fund-round-2-discovery-projects-approved-funding>

Alpha Phase of the SIF. As stated above, the Project has been selected by Ofgem to receive SIF Funding for the Alpha Phase of round 2.

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 SIF 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
- 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

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

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

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

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 Annex 1 – Project Budget.

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.

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

¹² 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: CG/Digital Inspector/SIFIESRR/Rd2_Alpha

Application number: 10079059

Project title: Digital Inspector

Innovation Challenge/Project Phase: Improving energy system resilience and robustness
/ Alpha Phase round 2

Project start date: 01 October 2023

Project end date: 31 March 2024

SIF Approved Amount for SIF Funding: £309,790.00

2. PREAMBLE

This SIF Project Direction is issued by the Gas and Electricity Markets Authority (the "Authority") to Cadent Gas Limited (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 Digital Inspector (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.

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

Table 1. Project Partners

UNITED LIVING GROUP LIMITED
NATIONAL GAS TRANSMISSION PLC
TRITON ELECTRONICS LIMITED
TWI LIMITED

Condition 2

The Funding Party must report on the financial contributions made to the Project as set out in its Application. Any financial contributions made over and above that stated in its Application should also be reported and included within the Project costs template.

Condition 3

The Funding Party must 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.

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 ££309,790.00 (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 2 Alpha Phase. An end of Phase report is required for the round 2 Alpha Phase if the Project is not planning on submitting an Application to the round 2 Beta Phase and, if the Funding Party submits an Application for the Project for the round 2 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)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.

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>

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.

Table 3. Project milestone¹⁶

Reference	Project milestone	Deadline	Overall objectives and key tasks	Summary of milestones	SIF Funding Request
Milestone 1	Initial prototypes	31 March 2024	<p>Overall Work Package Objectives:</p> <p>We will have completed the first iteration of the Integration API, for TWI to send data. There will be a functional device prototype board which will have serial communication from the data capture board and Bluetooth relaying of data to a windows application. The initial SQL schema for the database, necessary for the next stages will be complete, this will include the devices, tablets, and basic project data.</p> <p>Key Tasks:</p> <ol style="list-style-type: none"> 1. Integration of the API with TWI 2. Initial device prototype 3. Initial database design 	<p>M1: API for TWI complete (£3,800.00).</p> <p>M2: Device prototype and database design complete (£23,314.00).</p> <p>M3: Initial Data Gathering (£15,879.00).</p>	£42,993.00

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

Milestone 2	Web service	31 March 2024	<p>Overall Work Package Objectives:</p> <p>We will have completed the first stage of getting secure device comms and management deployed on both the devices and the web service. We will use Azure IOT to manage device authentication and management. We will have created a cloud webservice that will handle management endpoints for the devices to poll and auth / contextualise themselves and relay basic data back and forth. We will run tests on the device comms and create test routines to automate monitoring of communication performance as the Alpha phase progresses.</p> <p>Key Tasks:</p> <ol style="list-style-type: none"> 1. Initial functionality of the webservice 2. Device and web service communications established 3. Azure IOT integration 	<p>M1: Web service functionality & device comms established (£11,000.00).</p> <p>M2: Azure IOT Integration (£3,249.00).</p>	£14,249.00
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Milestone 3	Further development and 1st test	31 March 2024	<p>Overall Work Package Objectives:</p> <p>In this phase we will expand the device functionality, based on the results of the previous development phases. We will create much of the Inspector app interfaces and functionality, integrating it with the webservice and the devices via Bluetooth. By the end of this milestone the inspection app on the tablet will be able to download basic project data, record data from the device prototype via Bluetooth, and create a basic report to be sent back to the web service. At the end of this period we have planned in a field test, which will involve taking the device to United Living and demonstrating it to their inspectors at their HQ for feedback.</p> <p>Key Tasks:</p> <ol style="list-style-type: none"> 1. Initial tablet interface 2. Further device prototype version 3. First field test 	<p>M1: First field test complete (£21,245.00).</p> <p>M2: Requirements capture and produce low fidelity mock up (£15,879.00).</p>	£37,124.00
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Milestone 4	Web interface	31 March 2024	<p>Overall Work Package Objectives:</p> <p>This milestone will focus on the first stage of a functional web interface. This will build on the prototypes built during the Discovery Phase of the project and make them functional, this will include the project tracker, bar chart and project map interfaces. We will also produce some management pages for creation, update, deletion of users and other elements, i.e. some project fields. We will also produce some basic device management pages.</p> <p>Key Tasks:</p> <ol style="list-style-type: none"> 1. Expansion of the database design 2. Functional web interface 	M1: Web interface v1 complete (£8,360.00).	£8,360.00
Milestone 5	Revisions, 2nd field test	31 March 2024	<p>Overall Work Package Objectives:</p> <p>This milestone will result in additions to the tablet interface, so that a Fab report can be completed on the device. We will also modify the webservice to facilitate the uploading and completion of the fab</p>	M1: Tablet interface v2 and webservice v2 complete (£14,360.00).	£40,692.00

			<p>report. At the beginning of March we will complete a second field test, testing the functionality produced during the Alpha phase, collecting feedback from demonstrations to United Living and Cadent. The last 20 days of the project are dedicated to optimisations and revisions, where we will spend time assessing feedback and tests, ensuring that all functionality has been completed and tested, and improving parts of the system where possible, to understand what will be required to proceed to Beta.</p> <p>Key Tasks:</p> <ol style="list-style-type: none"> 1. Tablet interface 2. Web service 3. Second field test 4. Optimisations and revisions 	<p>M2: Second field test and final revisions completed (£10,454.00).</p> <p>M3: Alpha stage completion and written report for human factors (£15,878.00).</p>	
Milestone 6	Generate new code rules for BS 4515	31 March 2024	<p>Overall Work Package Objectives:</p> <p>Add rules from BS4515 to the existing rules for ISO 15614/9606/14732 to create a system to manage welder and</p>	<p>M1: Generate new Code Rules for BS 4515 (£35,613.00).</p>	£35,613.00

			<p>welding procedure qualifications to Welding Qualifier</p> <p>Key Tasks:</p> <ol style="list-style-type: none"> 1. New rules 2. Start/stop duration times 3. Signatures on pWPS (prelim) 4. Add different consumable diameters per process 5. Add rules for multiple welders on thick sections 		
Milestone 7	Import existing Excel / PDF docs	31 March 2024	<p>Overall Work Package Objectives:</p> <p>Import existing welding procedure and welder qualification documents into Welding Qualifier to allow United Living to manage all documents of this type.</p> <p>Key Tasks:</p> <ol style="list-style-type: none"> 1. Software developers will work to import custom document types specific to United Livings processes 	M1: Import existing Excel / PDF docs (£24,500.00).	£24,500.00

Milestone 8	Integration with Dashboard	31 March 2024	<p>Overall Work Package Objectives: Add functions to communicate with the Dashboard at the start of the welding phase and when welding is complete</p> <p>Key Tasks: 1. Export function to send information to the Dashboard 2. Import function to retrieve the information from the Dashboard</p>	M1: Integration with dashboard (£24,894.00).	£24,894.00
Milestone 9	Create pWPS from project tracker	31 March 2024	<p>Overall Work Package Objectives: Add function to automatically create preliminary welding procedures when no suitable PQR/WPSs exist for a new joints/materials.</p> <p>Key Tasks: 1. Add function to automatically create preliminary welding procedures.</p>	M1: Create pWPS from Project Tracker (£8,046.00).	£8,046.00
Milestone 10	Define Digital Weld	31 March 2024	<p>Overall Work Package Objectives: Write a specification for a 'digital weld' to facilitate communications between any</p>	M1: Digital Weld Definition (£16,525.00).	£16,525.00

			<p>software systems relating to welded fabrications.</p> <p>Key Tasks:</p> <ol style="list-style-type: none"> 1. Define the parameters which make up a Digital Weld 2. Academic review of requirements for conducting standardisation 		
Milestone 11	Project management	31 March 2024	<p>Overall Work Package Objectives:</p> <p>Project management of TWI work packages in project</p> <p>Key Tasks:</p> <ol style="list-style-type: none"> 1. This will ensure the coordination of different teams within the organisation 2. Successful delivery of work packages 3. Integration of software with Triton dashboard 	M1: Project complete (£36,792.00).	£36,792.00

14. 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.

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.

¹⁷ 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

SIF Project Direction costs	
Cost Category	Total Project costs (£)
Labour	180,070
Materials	6,730
Subcontracting	34,560
Travel and subsistence	5,450
Other costs	116,999
Total	£343,809

Project Partner	Total project costs (£)	Project contribution (£)	Total SIF Funding requested (£)	Project contribution (%)
CADENT GAS LIMITED	£16,692.00	£1,670.00	£15,022.00	
UNITED LIVING GROUP LIMITED	£52,929.00	£5,293.00	£47,636.00	
National Gas Transmission PLC	£4,980.00	£-	£4,980.00	
TRITON ELECTRONICS LIMITED	£106,424.00	£10,642.00	£95,782.00	
TWI LIMITED	£162,784.00	£16,414.00	£146,370.00	
Total	£343,809.00	£34,019.00	£309,790.00	11%

ANNEX 2 TO SCHEDULE: TEMPLATE OF BANK ACCOUNT DETAILS TO BE PROVIDED TO EITHER NGT (BOX.GSOSETTLEMENTS@NATIONALGRID.COM) OR NG ESO (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)