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Date: 09 December 2015

Dear Company Secretary,

Project Direction ref: SGN / Real-Time Networks / 09 December 2015

SGN submitted the project Real-Time Networks (the Project) on 25 July 2015 to be considered for funding through the Gas Network Innovation Competition (NIC). In this year's decision¹, we² selected the Project³ for funding.

We have issued this Project Direction to SGN. It contains the terms to be followed by SGN as a condition of the Project receiving funding through the Gas NIC. SGN must comply with these terms, which can be found in the Schedule to this Project Direction.

Project Direction

Paragraph 5.66 of the Gas NIC Governance Document⁴ states that a Project Direction will:

- set out the Project-specific conditions that the Network Licensee (which for this Project is SGN) is committing to in accepting funding;
- require the Network Licensee to undertake the Project in accordance with the commitments it has made in the Full Submission. Where appropriate, the Project Direction may therefore include extracts from the Full Submission or refer to specific sections of the Full Submission;
- set out the Approved Amount for the Project, that will form part of the calculation contained in the funding direction issued by the Authority under chapter 7;
- set out the Project budget that the Network Licensee must report against and how variances against the Project budget will be reported and approved; and
- set out the mechanism for the Network Licensee receiving the Approved Amount as set out in section 4 of the Funding Direction.

These are described for the Project in the Schedule to this Project Direction.

Decision

Provided SGN complies with the Gas NIC Governance Document and with the Schedule to this Project Direction, the Project is deemed to be an Eligible NIC Project⁵.

¹ <https://www.ofgem.gov.uk/publications-and-updates/gas-network-innovation-competition-2015-funding-decision>

² The terms 'the Authority', 'Ofgem', 'we', 'us' and 'our' are used interchangeably in this letter. The Authority is the Gas and Electricity Markets Authority. Ofgem is the Office of the Authority.

³ Unless otherwise specified, defined terms in this Project Direction have the meaning given to them in Appendix 1 of the Gas NIC Governance Document.

⁴ https://www.ofgem.gov.uk/sites/default/files/docs/2015/07/gas_nic_2-1_stat_con.pdf

⁵ Eligible NIC Project has the meaning given in the definitions in the Gas Distribution licence.

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



Judith Ross
Head of Network Regulation Policy
For and on behalf of the Authority

Schedule to Project Direction

1. TITLE

Project Direction ref: SGN / Real-Time Networks / 09 December 2015

2. PREAMBLE

This Project Direction is issued by the Gas and Electricity Markets Authority (the "Authority") to SGN (the "Funding Licensee") pursuant to the Gas NIC Governance Document issued pursuant to Special Condition 1I (Network Innovation Competition) of the Gas Distribution Licence (the "Licence"). It sets out the terms to be followed by the Funding Licensee in relation to Real-Time Networks ("the Project") as a condition of the Project being funded under the Network Innovation Competition ("NIC") and the Funding Return Mechanisms⁶.

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

References to specific sections of the Funding Licensee's Full Submission in this Project Direction are, for ease of reference, made by referring to the section number in the Funding Licensee's Full Submission pro-forma.

3. CONDITION PRECEDENT

The Funding Licensee will not access any funds from the Project Bank Account until it has signed contracts with the Project Partners named in Table 1.

Table 1. Project Partners

	Company Name
1.	DNV GL

4. COMPLIANCE

The Funding Licensee must comply with Special Condition 1I of the Licence and with the NIC Governance Document (as may be modified from time to time in accordance with Special Condition 1I and as modified and/or augmented in respect of the Project by this Project Direction) and with this Project Direction.

Any part of the Approved Amounts that the Authority determines not to have been spent in accordance with this Project Direction (or with the Gas NIC Governance Document) is deemed to be Disallowed Expenditure.

Pursuant to Special Condition 1I, Disallowed Expenditure is revenue received (whether by the Funding Licensee or by another Licensee) under the NIC and Funding Return Mechanisms that the Authority determines not to have been spent in accordance with the provisions of the Gas NIC Governance Document or those of the relevant Project Direction.

Pursuant to paragraph 8.48 of the Gas NIC Governance Document, Disallowed Expenditure includes any funds that must be returned if the Project is halted without Ofgem's permission, any funds that have not been spent in accordance with the approved Project Budget contained within the Project Direction, and any unspent funds on the completion of the Project.

⁶ The Funding Return Mechanism is defined in Special Condition 1I (Network Innovation Competition).

5. APPROVED AMOUNT FOR THE PROJECT

The Approved Amount is £7,104,672.47.

6. PROJECT BUDGET

The Project Budget is set out in Annex 1 to this Project Direction. The Funding Licensee must not spend more than 110% of any category total (eg "Labour") in Annex 1 without the Authority's prior written consent (such consent is not to be unreasonably withheld).

The Funding Licensee will report on expenditure against each line under the category total in the Project Budget, and explain any projected variance against each line total in excess of 5% as part of its detailed report which will be provided at least every six months, in accordance with paragraph 8.17 of the Gas NIC Governance Document. Ofgem will use the reported expenditure and explanation to assess whether the funding has been spent in accordance with the Gas NIC Governance Document and in accordance with this Project Direction.

For the avoidance of doubt this reporting requirement does not change or remove any obligations on the Funding Licensee with respect to reporting that are set out in the Gas NIC Governance Document.

7. PROJECT IMPLEMENTATION

The Funding Licensee must undertake the Project in accordance with the commitments it has made in the Full Submission approved by the Authority pursuant to the Gas NIC Governance Document and with the terms of this Project Direction. These include (but are not limited to) the following:

- (i) undertake the Project in accordance with the description set out in Section 2 (Project Description);
- (ii) provide a Network Licensee Compulsory Contribution of £798,830;
- (iii) complete the Project on or before the Project completion date of 31 March 2019; and
- (iv) disseminate the learning from the Project at least to the level described in Section 5 (Knowledge Dissemination).

8. REPORTING

Ofgem will issue guidance (as amended from time to time) about the structure and content of the reports required by paragraph 8.17 of the Gas NIC Governance Document. The Funding Licensee must follow this guidance in preparing the reports required by paragraph 8.17 of the Gas NIC Governance Document.

As required by paragraph 8.22 of the Gas NIC Governance Document, the Funding Licensee must inform the Authority promptly in writing of any event or circumstance likely to affect its ability to deliver the Project as set out in its Full Submission.

9. COST OVERRUNS

The maximum amount of Contingency Funding that the Funding Licensee can request as additional funding for cost overruns on the Project is 5%⁷ of the Approved Amount.

⁷ This is the amount requested by the Funding Licensee in its Full Submission.

10. INTELLECTUAL PROPERTY RIGHTS (IPR)

In Section 5 of its Full Submission (Knowledge Dissemination) the Funding Licensee has stated that the Project conforms to the default IPR arrangements set out in chapter 9 of the Gas NIC Governance Document. The Funding Licensee must therefore undertake the Project in accordance with the default IPR arrangements.

11. SUCCESSFUL DELIVERY REWARD CRITERIA

The Project will be judged by the Authority for the purposes of the NIC Successful Delivery Reward against the Successful Delivery Reward Criteria ("SDRCs") set out in Table 2 below (that comply with paragraphs 5.26 – 5.29 of the Gas NIC Governance Document).⁸

Table 2. Successful Delivery Reward Criteria

Successful Delivery Reward criterion	Evidence
9.1 Procurement of Novel Sensor Technologies (WP01) by 30 November 2016	<ul style="list-style-type: none"> • Research will have been conducted into technology requirements for both flow and gas quality and benchmarked against accuracy of available alternatives within the gas industry. • Key network locations will have been identified to gain required levels of detail of gas quality and flow within the identified trial area of Medway MP/IP network. • A site by site survey will have been undertaken in order to outline construction requirements including all civil and attributed costs. This process will have identified any wayleave or easement requirements for each site. • Detailed specifications outlining requirements for flow and gas quality metering will have been produced by DNV GL and delivered to SGN. • DNV GL will have drawn on their previous experience within the fields of gas quality and metering to draw up both conceptual and detailed designs for the required technologies. SGN will have confirmed the suitability of technologies for installation within their network. • An estimation of a variance against the target prices will have been identified by DNV GL. • A procurement event in compliance with industry procurement regulations will be conducted by DNV GL. <p>The evidence will be:</p> <ul style="list-style-type: none"> • All specifications, designs and supporting documents to be documented in project file. • Evidenced procurement event or a procurement exemption as per industry procurement regulations. • Acceptance, approval and sign off by project director. • Equipment purchase order produced.
9.2 Development of Design of Cloud Based Data Solution (WP01) by June 2016	<ul style="list-style-type: none"> • DNV GL will have drawn on their previous experience in the fields of data and communication and carried out research into applicable cloud-based data solutions for a real-time network. • A detailed specification for the requirements of a

⁸ These are the Successful Delivery Reward Criteria set out in the Funding Licensees Full Submission.

	<p>cloud system, hosted by DNV GL will have been drawn up based on requirements data quantity, granularity and security as applicable to the project trial.</p> <ul style="list-style-type: none"> • Following the identification of preferred comms systems, compatible with the loggers and sensors to be demonstrated within the real-time network, a detailed cloud system design will have been produced by DNV GL. <p>The evidence will be:</p> <ul style="list-style-type: none"> • All specifications, designs and supporting documents to be documented in project file. • Acceptance, approval and sign off by project director.
<p>9.3 Installation and Testing of Sensor Technologies (WP02) LTS/IP/MP by March 2017</p>	<ul style="list-style-type: none"> • Following identification of preferred installation sites, any required wayleaves or easements will have been acquired and in place to meet the identified installation dates as per the project plan. • Offsite testing will have been conducted within DNV GL's lab environment with reporting produced and published for learning dissemination purposes. • A site specific risk register will have been produced for each site by DNV GL and signed off by the project director. • Relevant T/SP/G/17 will have been produced for each site for E&I, mechanical and civils. • After following all safety procedures, in accordance with SGN's Safety Management Framework and Safe Control of Operations permitry prepared, registered and authorised by SGN, the installations will have been commissioned at the approval of the project director. • On-site testing will have been conducted to the satisfaction of all relevant industry standards and that of the project director. <p>The evidence will be:</p> <ul style="list-style-type: none"> • All specifications, designs and supporting documents to be documented in project file. • Reporting and findings of offsite testing of sensors to be published and made available to network licensees. • Method statements, approvals and appraisals of all installations to be held in project file. • Photographic evidence of installs to be held within project file.
<p>9.4 Installation and Testing of Logger Technologies (WP03) by March 2017</p>	<ul style="list-style-type: none"> • A customer engagement plan will have been produced outlining all significant parties along with potential impacts and associated risks with mitigations aligned for all key risk areas. • A strategy outlining meter locations and specific targeted consumer demand type will have been produced and authorised by the project director. • An implementation of the customer engagement strategy will have been carried out with bespoke approaches to the various consumer types as identified in the data collection methodology. • Loggers will have been installed at all identified

	<p>feasible locations where consent has been received without disruption to the customer or loss of supply.</p> <p>The evidence will be:</p> <ul style="list-style-type: none"> • A stakeholder engagement plan specific to the customer logging element of the project will be published. • Installation records will be received and documented within the project file.
<p>9.5 Conceptual Design of Systems Software (WP05) by September 2017</p>	<ul style="list-style-type: none"> • DNV GL will have drawn on their previous experience in the fields of data modelling and software development to conduct research into the requirements for bringing together loggers, sensors, cloud and communications systems with novel software platform. • Detailed specifications outlining requirements for a software platform will have been produced by DNV GL and delivered to SGN. real-time data for pseudo-online system requirements will have been assessed. • A prototype demand model for real-time modelling will have been produced by DNV GL and tested in a controlled environment with legacy data. • Acceptance testing will have been conducted by DNV GL supported by relevant business users from SGN. <p>The evidence will be:</p> <ul style="list-style-type: none"> • All specifications, designs and supporting documents to be documented in project file. • Acceptance, approval and sign off by project director.
<p>9.6 Testing of Cross Tier Model Integration (WP06) by January 2019</p>	<ul style="list-style-type: none"> • DNV GL will have finalised the prototype data modelling and software development for bringing together loggers, sensors, cloud and communications systems within the novel software platform. • Real-time data collected from the network installed loggers and sensors alongside existing SGN legacy data systems will have been modelled through SPS platform by DNV GL. • Detailed specifications outlining requirements for a software platform will have been produced by DNV GL and delivered to SGN. Real-time data for online system requirements will have been assessed. • A prototype demand model for real-time modelling will have been produced by DNV GL and tested in a controlled environment with real-time data. • Acceptance testing will have been conducted by DNV GL supported by relevant business users from SGN. <p>The evidence will be:</p> <ul style="list-style-type: none"> • All specifications, designs and supporting documents to be documented in project file. • Acceptance, approval and sign off by project director.
<p>9.7 Assessment of Relevant Renewable Technologies Impact on the Network by March 2019</p>	<ul style="list-style-type: none"> • A feasibility study will have been conducted identifying the significant downstream renewables based on factors such as frequency and perceived impact on demand profiles and consumption. • A partnership with local authorities or other similar bodies will have been formed to facilitate the installation of novel downstream renewables and/or

	<p>access to existing installations.</p> <ul style="list-style-type: none"> • Logging will have been installed at these locations where consent was available and data collected and integrated to the real-time modelling system. • An impact assessment focusing on both demand profile and power use for each type of novel downstream renewable will have been produced with findings to be made available to other network licensees as part of the project learning dissemination. <p>The evidence will be:</p> <ul style="list-style-type: none"> • Records of all available novel downstream renewables documented in project file. • A report identifying demand profile impacts of each available downstream renewable published and made available for all network licensees.
<p>9.8 Knowledge Dissemination of Tasks Completed by June 2019</p>	<ul style="list-style-type: none"> • Comprehensive reporting assessing the technical and commercial viability for system roll-out will have been compiled. • Knowledge on project outcomes will have been shared with all relevant stakeholders as per the project dissemination plan. • DNV GL will have conducted a three day learning dissemination event for network licensees and other relevant stakeholders. <p>The evidence will be:</p> <ul style="list-style-type: none"> • Reports detailing all of the above criteria to be published on Ofgem portal. • GDNs invited to attend DNV GL learning dissemination event.

The maximum amount of the Gas NIC Successful Delivery Reward (which will not exceed the Network Licensee Compulsory Contribution) that the Project will be eligible for is £798,830.

12. USE OF LOGO

The Funding Licensee and Project Partners, External Funders and Project Supporters⁹ may use the NIC logo for purposes associated with the Project but not use the Ofgem or Ofgem E-Serve logos in any circumstances.

13. AMENDMENT OR REVOCATION

As set out in the Gas NIC Governance Document and this Project Direction, this Project Direction may be amended or revoked under the following circumstances:

- (i) if the Funding Licensee considers that there has been a material change in circumstance that requires a change to the Project Direction, and the Authority agrees (paragraph 8.23 of the Gas NIC Governance Document); or
- (ii) if Ofgem agrees to provide Contingency Funding, which requires the re-issue of the Project Direction (paragraph 8.42 of the Gas NIC Governance Document); or
- (iii) if the Funding Licensee applies for Contingency Funding to cover a decrease in Direct Benefits and the Authority decides it would be in the best interest of

⁹ As listed in Box 1.6 in Section 1 of the Full Submission pro-forma.

customers to make changes to the Project Direction before the Contingency Funding would be awarded (paragraph 8.42 of the Gas NIC Governance Document).

14. HALTING OF PROJECTS

This Project Direction is subject to the provisions contained in paragraphs 8.30 to 8.34 of the Gas NIC Governance Document relating to the halting of projects. By extension, this Project Direction is subject to any decision by the Authority to halt the Project to which this Project Direction relates and to any subsequent relevant Funding Direction issued by the Authority pursuant to Special Condition 1I.

In the event of the Authority deciding to halt the Project to which this Project Direction relates, the Authority may issue a statement to the Funding Licensee clarifying the effect of that halting decision as regards the status and legal force of the conditions contained in this Project Direction.

NOW THEREFORE:

In accordance with the powers contained in the Gas NIC Governance Document issued pursuant to Special Condition 1I of the Licence the Authority hereby issues this Project Direction to the Funding Licensee in relation to the Project.

This Project Direction constitutes notice of reasons for the Authority's decision pursuant to section 38A of the Gas Act 1986.

ANNEX 1: PROJECT BUDGET

Cost Category	Cost (£k)
Labour	4129.6
Equipment	-
Contractors	3,734.83
IT	-
IPR Costs	-
Travel & Expenses	48.83
Payments to users	-
Contingency	-
Decommissioning	-
Other	85.00
Total	7,998.26