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Date: 16/02/2021

Dear Company Secretary,

Network Innovation Competition – Material Change Request for NGESO / TDI 2.0

The Network Innovation Competition ("NIC") funds a number of large-scale innovation projects and was set up to encourage network licensees to innovate in the design, development and operation of their networks.¹

In 2016 National Grid Electricity Transmission Plc (NGET) was awarded NIC funding for Transmission & Distribution Interface 2.0 (TDI 2.0) project (the Project). On 1 April 2019 the Electricity System Operator (NGESO) became a legally separate company within the National Grid Group.

On 9th November 2020, the NGESO submitted a material change request for the Project to the Authority.

The Project was awarded funding in December 2016 with an expected completion date at bid submission of December 2019. Further to a submission for NIC funding, on 16 December 2016 we issued a Project Direction² ("2016 Project Direction") confirming the terms of the Project funding to be awarded to NGESO.

This letter contains our³ decision on the requested changes to the Project's Successful Delivery Reward Criteria ("SDRC") and sets out related amendments to the 2016 Project Direction at Annex 1 ("the Amended Project Direction").

¹ <https://www.ofgem.gov.uk/publications-and-updates/electricity-network-innovation-competition-2016-funding-decision>

² [Network Innovation Competition - Project Direction for Transmission & Distribution Interface \(TDI\) 2.0 | Ofgem](#)

³ References to "Ofgem", "the Authority", "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.

Background

The purpose of the project is to demonstrate a regional reactive power market for distributed energy resources (DER) connected to the distribution network.

DER could provide dynamic voltage control (MVar for high and low voltage conditions) and active power support for constraint management and system balancing to the Great Britain (GB) System Operator.

Material Change request to 2016 Project Direction

On 9 November 2020 NGESO submitted a material change request to Authority as required under paragraph 8.21 of the Electricity NIC Government Document⁴ to extend the project timelines and access contingency funding.

The reasons provided by NGESO for the material change request are:

- Complexity of new software solution: a number of the existing UK Power Networks systems, such as PowerOn and RTU, required upgrading with new functionality specifically developed for use in Power Potential. This work was known at the time of bid preparation, but the full complexity of the design, test and implementation was only identified during delivery of the project.
- Customer recruitment and readiness: the need to progress each individual customer through all live test/trial stages has taken several months of repeat visits incurring additional cost. Alternative customers could not be swapped in to accelerate the project, as NGESO have committed to the individual customers, and prepared DERMS and PowerOn for their specific sites.
- COVID-19 impacted the project by forcing a pause to site works and commissioning activity. NGESO notified Ofgem of this in a letter in April 2020 letter.

A summary of requested timeline extensions is provided below, with further detail in Appendix 1 to this Direction.

SDRC / milestone	Project Direction	Updated
SDRC 9.5 Cost Benefit Analysis	31 December 2018	7 May 2021
SDRC 9.6 Trials Phase Report	30 December 2019	30 April 2021
SDRC 9.7 DSO Risk-Reward Framework	31 December 2019	15 May 2021
End date	30 December 2019	30 December 2021

In addition to timeline extensions, NGESO has requested contingency funding pursuant to paragraph 8.50 of Electricity NIC Governance Document. NGESO reports a £0.963m overspend, resulting from two delays:

- £0.813m - Non-COVID-19 related trial delay in system and customer readiness
- £0.150m - COVID-19 related trial delay in system and customer readiness

⁴ [FINAL Elec NIC Gov Doc 29.06.17 \(ofgem.gov.uk\)](#)

Of the £0.963m shortfall, Project Partners have committed £0.570m and are requesting that the remaining £0.393m be covered by contingency funding.

The original Approved Amount for the project from the project schedule is:
£7,970,435.26.

The 2016 Project Direction provides that the maximum amount of Contingency Funding that the Funding Licensee can request as additional funding for cost overruns on the Project is 5% of the approved amount. The maximum amount that NGESO can request is therefore £398,521.76.

We have amended the contingency funding in the Project Direction to reflect the amount of additional funding provided in response to this change request.

Our view

We consider that the timeline extension requests set out above relate to circumstances that would have been difficult or impossible for NGESO to foresee at the outset of the project. In our view, do not significantly reduce or affect the value that network customers could derive from this project.

The amount of contingency funding requested falls within the 5% permitted through the 2017 Project Direction. In addition, the system is already live and trials are underway. We therefore have confidence that the project can deliver the major learnings set out in the original submission. There is no change to the assumption of potential customer benefits from successful rollout of the approach.

Our decision

We have decided to approve the NIC change request. In accordance with Section 13 of the 2016 Project Direction, we hereby amend the schedule to the 2016 Project Direction in the manner set out in Schedule 1 of this letter. The letter constitutes notice pursuant to section 49A (Reasons for decisions) of the Electricity Act 1989.

As stated in paragraph 8.52, applying for Contingency Funding results in the project being ineligible to apply for the Successful Delivery Reward upon completion.

We have published the Amended Project Direction in the Schedule to this letter.

If you would like to discuss any of the issues raised in this letter, please contact Graeme Barton at Graeme.Barton@ofgem.gov.uk.

Yours sincerely,



Steven McMahon

Deputy Director, Electricity Distribution & Cross Sector Policy
For and behalf of the Authority

Appendix 1: Changes to Project Direction Schedule

Schedule to Project Direction

1. TITLE

Project Direction ref: NGE~~SOT~~ / TDI 2.0 / ~~16 December 2016~~. 16 February 21.

2. PREAMBLE

This Project Direction is issued by the Gas and Electricity Markets Authority (the "Authority") to National Grid Electricity ~~System Operator Transmission plc~~ (the "Funding Licensee") pursuant to the Electricity NIC Governance Document issued pursuant to Part E of Special Condition 3I (Network Innovation Competition) of the Electricity Transmission Licence (the "Licence"). It sets out the terms to be followed in relation to Transmission & Distribution Interface 2.0 (the "Project") as a condition of it being funded under the NIC and the Funding Return Mechanisms.⁵ Unless otherwise expressly stated, it supersedes the Project Direction issued on 16 December 2016 ("the 2016 Direction").

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

References to specific sections of the Funding Licensee's Full Submission in this Amended 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 a contracts with the Project Partner named in Table 1.

Table 1. Project Partner

<u>UK Power Networks (UKPN)</u>

4. COMPLIANCE

The Funding Licensee must comply with Special Condition 3I of the Licence and with the NIC Governance Document (as may be modified from time to time in accordance with Special Condition 3I and as modified and/or augmented in respect of the Project by this Project Direction) and with this Amended Project Direction.

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

Pursuant to Special Condition 3I.12 of the Licence, 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 Electricity NIC Governance Document or with those of the relevant Project Direction.

Pursuant to Chapter 8 of the Electricity 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 [Amended](#) Project Direction, and any unspent funds on the completion of the Project.

5. APPROVED AMOUNT FOR THE PROJECT

The [revised](#) Approved Amount is ~~£7,970,435.26~~ [£8,363,435.26](#).

6. PROJECT BUDGET

The Project Budget is set out in Annex 1 of this [Amended](#) Project Direction.

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, in accordance with Chapter 8 of the Electricity NIC Governance Document. Ofgem will use the reported expenditure and explanation to assess whether the funding has been spent in accordance with the Electricity NIC Governance Document and with this [Amended](#) 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 Electricity 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 Electricity NIC Governance Document and with the terms of this [Amended](#) Project Direction. These include (but are not limited to) the following:

Unless otherwise expressly stated, the 2016 Project Direction is superseded by this [Amended Project Direction](#). The Project shall be delivered in accordance with the amendments proposed in the Change Request.

1. undertake the Project in accordance with the description set out in Section 2 (Project Description);
2. provide a Network Licensee Compulsory Contribution of £896,399.51 (50% from NGETSO, 50% from UKPN);
3. complete the Project on or before the Project completion date of 30 December 2021~~19~~; and
4. disseminate the learning from the Project at least to the level described in Section 5 (Knowledge Dissemination).

8. REPORTING

Ofgem may issue guidance (as amended from time to time) about the structure and content of the Project Progress Report required by Chapter 8 of the Electricity NIC Governance Document. The Funding Licensee must follow this guidance in preparing the reports.

As required by Chapter 8 of the Electricity 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 50.04% of the approved amount.⁶

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 Electricity 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 assessed by the Authority for the purposes of the NIC Successful Delivery Reward against the SDRCs set out in Table 2 below (which comply with Chapter 5 of the Electricity NIC Governance Document).

Table 2. Successful Delivery Reward Criteria

Successful Delivery Reward criterion	Evidence
9.1 Technical High Level Design	
The high level design of the technical solution and high level business processes which will operate the solution.	<ul style="list-style-type: none">Alternative design options considered and selection criteriaHigh level design specificationFunctional design documentHigh level business processesReview of anticipated synergies and conflicts (3 July 2017)
9.2 Commercial and Detailed Technical Design	
Stage Gate 1 – The agreed detailed technical design (Partner/s, National Grid, UKPN and Customers) and Commercial Framework for the trial.	<ul style="list-style-type: none">Stakeholder consultation findingsFunctional Specification DocumentsFinalised Commercial FrameworkDetailed Business Processes (1 January 2018)
9.3 Commercial Tendering Process Report and Finalised Trials Approach	
Stage Gate 2 – Outline the learnings from the tendering rounds for the reactive power services and the engagement on the active power services. Based on this process and the trials approach advise which customers will be utilised during each trial phase and the forecasted effectiveness.	<ul style="list-style-type: none">Report on tendering approach, including technical and contractual requirements for participation, barriers to entry and measures to alleviate theseProposed commercial framework and interaction with SO and DNO incentivesReview of technologies and volumes under contractInitial forecasts of availability and utilisation volumesSigned commercial contractsTrials Approach and Methodology (2 July 2018)
9.4 Customer Readiness Report and Performance of the Technical Solution in Controlled Environment	

<p>Stage Gate 3 – Update on the effort required to ready customers to take part in the trial (technical, business processes, etc.) and the performance of the technical solution in a controlled environment and expected performances in the live environment.</p>	<ul style="list-style-type: none"> • Test Report – End to End testing • Business Change Implementation Report • Customer Readiness Assessment • Technical Solution – GO / NO-GO Criteria Results • Customer and Business – GO / NO-GO Criteria Results (31 December 2018)
9.5 Cost Benefit Analysis	
<p>Analysis assessing the financial case for the trial to date and for extending the approach into the future</p>	<ul style="list-style-type: none"> • Detailed assessment of the costs and benefits of TDI 2.0, to include: <ul style="list-style-type: none"> o analysis of the net benefit of extending the trial into the future (using Ofgem’s CBA framework), replication study assessing the viability of, and case for, extending TDI 2.0 to other DNOs and for providing a wider set of services (31 December 2018 7 May 2021)
9.6 Trial Phase Reports	
<p>Stage Gate 6 – Trials Report The completion of the trials in line with customer agreements and review of the performance of the trial; the closure of the project (potentially moving into BAU) in line with customer agreements</p>	<ul style="list-style-type: none"> • Trials Phase Report including adequacy of contracted volumes to meet requirement, availability/reliability of DERs and control system, accuracy of sensitivity and accuracy forecasting, evidence of competitive bidding, evidence of conflicts • Report summarising the financials of each party (subject to DER commercial confidentiality), in particular the costs incurred by the DNO, the uplift applied to DER bids, and hence the net revenue that the DNO receives • Assessment of scheme design and operation to cover how well it worked, where conflicts arose, and how the governance arrangements performed • Plan for transitioning trial participants into enduring solution (30 December 2019 30 April 2021)
9.7 DSO risk-reward framework for providing wider system services	
<p>A paper describing the incentive framework used for the project and recommendations for an enduring incentive framework for an active DSO</p>	<ul style="list-style-type: none"> • Analysis of the costs, risks and revenues for the services included in the trial • Assessment of mechanism used within the trial and comparison against alternative incentive mechanisms • Assessment of the applicability of these incentive schemes to a DSO providing a broader set of system services and interaction with the wider SO incentives (31 December 2019 15 May 2021)

12. USE OF LOGO

The Funding Licensee and Project Partners, External Funders and Project Supporters may use the NIC logo for purposes associated with the Project but not use the Ofgem or Ofgem E-Serve logos in any circumstances.⁷

13. AMENDMENT OR REVOCATION

As set out in Chapter 8 of the Electricity NIC Governance Document and this [Amended Project Direction](#), this [Amended Project Direction](#) may be [further](#) 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 [Amended Project Direction](#), and the Authority agrees; or
- (ii) if Ofgem agrees to provide Contingency Funding, which requires the re-issue of the [Amended Project Direction](#); 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 customers to make changes to the Project Direction before the Contingency Funding would be awarded; or
- (iv) To reflect amendments made to the licence.

14. HALTING OF PROJECTS

This [Amended Project Direction](#) is subject to the provisions contained in paragraphs chapter 8 of the Electricity NIC Governance Document relating to the halting of projects. By extension, this [Amended Project Direction](#) is subject to any decision by the Authority to halt the Project to which this [Amended Project Direction](#) relates and to any subsequent relevant Funding Direction issued by the Authority pursuant to Special Condition 3I.

In the event of the Authority deciding to halt the Project to which this [Amended 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 [Amended Project Direction](#).

In the event of the Authority deciding to halt the Project to which this [Amended 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 [Amended Project Direction](#).

NOW THEREFORE:

In accordance with the powers contained in the Electricity NIC Governance Document issued pursuant to Part E of Special Condition 3I of the Licence the Authority hereby issues this [Amended Project Direction](#) to the Funding Licensee in relation to the Project.

This constitutes notice of reasons for the Authority's decision pursuant to section 49A (Reasons for decisions) of the Electricity Act 1989.

ANNEX 1: PROJECT BUDGET

Cost Category	Cost (£)
Labour	
	<u>3,879,274.00</u> 3,827,275.00
Equipment	
	<u>528,540.00</u> 1,487,000.00
Contractors	
	<u>4,223,668.00</u> 1,456,000.00
IT	
	<u>1,083,738.00</u> 915,000.00
IPR Costs	
	0
Travel & Expenses	
	<u>90,000.00</u> 147,086.88
Payments to users	
	<u>567,041.00</u> 693,000.00
Contingency	
	<u>0</u> 705,376.25
Decommissioning	
	0
Other	
	<u>151,395.00</u> 329,375.00
Total	<u>10,523,656.00</u> 9,560,113.13