

Mike Kenny
Project Lead – Distributed Restart
National Grid ESO

Email: graeme.barton@ofgem.gov.uk

Date: 08 December 2022

Dear Mike,

Decision on Material Change Request for Black Start from Distributed Energy Resources (also known as Distributed ReStart) Network Innovation Competition (NIC) Project

We write further to your letter dated 23 September 2022, seeking permission to extend the deadline to complete and request additional funding for the Distributed ReStart NIC project.

Background

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.

We¹ decided to fund Black Start from Distributed Energy Resources within the 2018 NIC.² We thereafter issued its Project Direction for the project on 20 December 2018, outlining the terms to be followed in relation to the project as a condition of it being funded under the NIC.³ On 1 April 2019, we reissued the Project Direction to the National Grid ESO following the legal separation of National Grid ESO and National Grid Electricity Transmission.⁴

Although the formal title of the project we awarded funding to and used in the Project Direction is "Black Start from Distributed Energy Resources", this project is more commonly known as the "Distributed ReStart" project and will be referred to as such throughout this letter. The purpose of the Distributed ReStart project is to explore how

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

² <https://www.ofgem.gov.uk/publications/network-innovation-competition-2018-funding-decisions>

³ <https://www.ofgem.gov.uk/publications/network-innovation-competition-project-direction-black-start-distributed-energy-resources-der>

⁴ The reissued Project Direction on 1 April 2019 does not appear to have been published on Ofgem's website; nonetheless we have used the 1 April 2019 Project Direction as the basis for the current change request.

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distributed energy resources can be used to restore power to the transmission system in the event of a national power outage. The aim is to achieve a functioning bottom-up approach to electricity system restoration to provide an alternative to the current transmission-led service which is largely reliant on fossil fuel generation.

The NIC Governance Document⁵ sets out the regulation, governance and administration of the NIC.

Material Change Request to Project Direction

On 22 September 2022, National Grid ESO submitted a material change request to the Authority as required under paragraph 8.21 of the Electricity NIC Government Document to extend the project timelines.

The requested changes relate to the extension of project timelines to help accommodate a third live trial at Redhouse aimed at testing battery energy storage systems with grid-forming technology. National Grid ESO do not seek to add additional deliverables to the NIC project for the work at Redhouse, as this work can be taken forward separately.

This innovative trial at Redhouse would provide Distribution Network Operators with proven automated solutions for bottom-up restoration of the electricity system without the need for a major increase in headcount of control room engineers. This would enhance the ability for DNOs to meet or even exceed the upcoming Electricity System Restoration Standard with greater confidence.

To help support the wider work at Redhouse, National Grid ESO have requested an extension to the Distributed ReStart project until October 2023 and an additional £250,114 in contingency funding.

Decision

We have considered the request to extend the project deadline and have decided that it would be appropriate to grant this request. We agree that the NIC project timeline should be extended to help accommodate a wider innovation trial. We consider the proposed third live trial at Redhouse is innovative and is a significant learning opportunity for electricity system restoration using distributed energy resources. Owing to this, we have concluded there is the potentially significant value to network operators and consumers as a result of the completion of the trial.

We note that during the extension period until October 2023, National Grid ESO may continue to make use of the project funding we awarded to the project in 2018.

With regards to the request for an additional £250,114 in contingency funding, we will not be fulfilling this request. In line with Paragraphs 8.48 to 8.59 of the NIC Governance Document, additional contingency funding can only be made available to projects where a project direction was issued in or before relevant year 2016/17. As the project direction for Distributed ReStart was first issued on 11 January 2019, there is no provision for us in the NIC Governance Document to fulfil the request for additional NIC contingency funding.

We, additionally, note that the ESO has the flexibility to use Network Innovation Allowance (NIA) funds to take forward additional innovation projects during the course of the price control, which comply with the RIIO-2 NIA Governance Document.⁶ We believe the NIA provides the ESO sufficient flexibility to take forward any additional innovative activities.

⁵ <https://www.ofgem.gov.uk/publications/version-30-network-innovation-competition-governance-documents>

⁶ <https://www.ofgem.gov.uk/publications/riio-2-nia-governance-document-update>

Our decision is to approve the NIC change request to extend the project timeline until October 2023. In accordance with Section 13 of the 2019 Project Direction, we hereby amend the schedule to the 2019 Project Direction in line with this decision. This letter constitutes notice pursuant to section 49A (Reasons for decisions) of the Electricity Act 1989.

If you would like to discuss any of the issues raised in this letter, please contact Chris Statham (Christopher.Statham@ofgem.gov.uk).

Yours sincerely,

Graeme Barton
Head of Price Control Operations – Small & Medium Sized Projects

For and on behalf of the Authority

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Schedule – Amended Project Direction

1. TITLE

Project Direction ref: NGESO / Black Start from Distributed Energy Resources / ~~20~~
~~December 2018~~ 08 December 2022

2. PREAMBLE

This Project Direction is issued by the Gas and Electricity Markets Authority (the "Authority") to National Grid Electricity Transmission (the "Funding Licensee") pursuant to the Electricity NIC Governance Document issued pursuant to Part E of Special Condition 3I (The Network Innovation Competition) of the Electricity Transmission Licence (the "Licence"). It sets out the terms to be complied with in relation to Black Start from Distributed Energy Resources (the "Project") as a condition of it being funded under the NIC and the Funding Return Mechanisms.⁷

Unless otherwise specified, defined terms in this 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 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

SP Transmission, SP Distribution and SP Manweb TNEI Services Limited

4. COMPLIANCE

The Funding Licensee must comply with Part E of Special Condition 3I of the Licence and with the Electricity NIC Governance Document (as may be modified from time to time in accordance with Part E of Special Condition 3I-) 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 in accordance with the Electricity NIC Governance Document) is deemed to be Disallowed Expenditure.

Pursuant to Special Condition 3I-, 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 Project Direction, and any unspent funds on the completion of the Project.

⁷ The Funding Return Mechanism is defined in part C of Special Condition 3I
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5. APPROVED AMOUNT FOR THE PROJECT

The Approved Amount is **£10,271.61k**

6. PROJECT BUDGET

The Project Budget is set out in Annex 1 of this 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 the explanation to assess whether the funding has been spent in accordance with the Electricity NIC Governance Document and with this Project Direction.

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 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) of the Full Submission;
- (ii) provide a Network Licensee Compulsory Contribution of £1,169.09k (£879.58k from National Grid Electricity Transmission; and £289.51k in total from SP Transmission, SP Distribution and SP Manweb);
- (iii) complete the Project on or before the Project completion date of ~~1 April 2022~~ [1 October 2023](#); and
- (iv) disseminate the learning from the Project at least to the level described in Section 5 (Knowledge Dissemination).

8. REPORTING

Ofgem may issue guidance (and amend it 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 material event or circumstance likely to affect its ability to deliver the Project as set out in its Full Submission.

9. 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.

10. PROJECT DELIVERABLES

At the end of a Project, the Funding Licensee must commission a report from an independent third party that verifies whether the Project Deliverables set out in Table 2 below (which comply with Chapter 5 of the Electricity NIC Governance Document) have been achieved.

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After it has received the report, the Funding Licensee must send it to the Authority. Where a Project Deliverable has not been achieved we will consider whether funding should be returned to customers using the Funding Return Mechanism. If the Network Licensee is deemed by Ofgem to be at fault for the non-delivery of the Project Deliverable, it is the proportion of funding assigned to it within Table 2 below, which may be returned to customers.

Table 2. Project Deliverables

Reference	Project Deliverable	Deadline	Evidence	NIC funding request (100%)
1	Organisational, Systems and Telecommunications viability assessment of the capability to deliver the high level concept	8/11/2019	Report documenting the outcomes of analysis for: <input type="checkbox"/> Resilience assessment of telecommunications; <input type="checkbox"/> Resilience and capability assessment of systems relevant to Black Start from DER; and <input type="checkbox"/> Capability assessment of Organisational structures and skills. The conclusions of the report will highlight the main areas of challenge that will be the focus of the Design and later stages to address.	8%
2	Design of process, roles and requirements, and systems and telecommunication requirements to control and coordinate a Power Island created from Black Start from DERs.	2/10/2020	Proposal of how Black Start from DER will operate as a process, including: <input type="checkbox"/> A process map with task allocations; <input type="checkbox"/> Organisational structures including roles and responsibilities; <input type="checkbox"/> Requirements for systems or tools with initial outline design concepts; and <input type="checkbox"/> Telecommunications functional requirements	12%
3	Refine the Organisational, Systems and Telecommunications requirements by testing key areas and capturing the learning	30/9/2021	Undertake a desktop exercise to test the organisational capability for the process, including systems and telecommunications where appropriate. Capture learnings from the exercise within an update to the Key Deliverables 2 report.	10%

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			<p>Work with manufacturers to complete designs of systems and telecommunications to enable the timely delivery of the Power System Trials.</p> <p>Where appropriate, undertake offline tests to prove capability of systems via hardware in the loop testing.</p>	
4	Assessment of Black Start from DER viability in GB and proposed functional requirements	31/7/2019	<p>Report presenting the outcomes from the Options stage of the Power Engineering and Trials (PET) work stream including;</p> <ul style="list-style-type: none"> □ The choice of case studies and the potential options for network re-energisation in each case; □ Initial proposals for the functional and testing requirements to apply for Black Start from DER; and □ The potential for roll-out of the method across GB; and □ Industry consultation to test whether the report is clear, comprehensive and justifies further work. 	5%
5	Technical and financial proposals for demonstration	31/7/2020	<p>Report presenting the conclusions from detailed assessment of the Power Engineering aspects of Black Start from DER, using the case studies as examples, and make firm proposals for live trials.</p> <p>The report will be supported by the results of power system studies, shared subject to confidentiality restrictions relevant to each DER.</p> <p>The report will be assessed in terms of completeness and clarity and whether it allows decisions to be</p>	10%

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			made on live trials by the Steering Group and DER participants.	
6	Demonstration of Black Start from DER	20/12/2021	This deliverable will mark the completion of the Power Engineering live trials (as approved by the Steering Group). A report will be produced detailing outcomes and learning from the trials. This will be assessed against the testing objectives specified for the trials.	30%
7	Functional requirements for procurement and regulation	8/11/2019	Report on procurement options and the criteria for determining the preferred option. Report on commercial design of the service (e.g. term, obligations delivery and payment etc.) with consideration of the learnings from the organisational and technical work streams. Report on gaps and blockers in relevant codes and license conditions that will need to be addressed to enable proposed new Black Start services.	5%
8	High-level outline of contract terms and regulatory arrangements.	2/10/2020	Report on detailed design of the procurement process and contractual arrangements based on technical, procurement and regulatory options. Report on potential regulatory and funding arrangements, and consequential changes to relevant codes and Licence requirements.	5%
9	Final version of procurement generic standard terms.	20/12/2021	Generic standard terms of contract by which a service for Black Start could be procured reflecting industry engagement. These will include the contracted obligations on each party required in the delivery of the service and	5%

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			the necessary commercial arrangements.	
10	Final proposals for functional and testing requirements for Black Start from DER.	End of Project	<p>Report on learning and proposed approaches from project activities, across all work streams and external engagement. This will form the basis for transition to business as usual.</p> <p>If the concept is successful this will include:</p> <ul style="list-style-type: none"> <input type="checkbox"/> finalised process design with consulted organisational structures, roles and responsibilities; <input type="checkbox"/> finalised functional specifications for telecommunications and systems; <input type="checkbox"/> finalised technical generic DER / Network / concept requirements; <input type="checkbox"/> finalised Generic contractual terms for procurement. <p>If the concept cannot be successfully proven, the above will be prepared documenting the gaps.</p>	10%
Common Project Deliverable				
N/A	Comply with knowledge transfer requirements of the Governance Document.	End of Project	<p>Annual Project Progress Reports which comply with the requirements of the Governance Document.</p> <p>Completed Close Down Report which complies with the requirements of the Governance Document.</p> <p>Evidence of attendance and participation in the Annual Conference as described in the Governance Document.</p>	N/A

12. USE OF LOGO

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The Office of Gas and Electricity Markets

10 South Colonnade, Canary Wharf, London, E14 4PU Tel 020 7901 7000

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The Funding Licensee and the Project Partners, External Funders and Project Supporters⁸ may use the NIC logo for purposes associated with the Project but not use the Ofgem logo in any circumstances.

13. AMENDMENT OR REVOCATION

As set out in Chapter 8 of the Electricity 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; or
- (ii) to reflect amendments made to the Licence.

14. HALTING OF PROJECTS

This 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 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 Part E of Charge Restriction Condition 5A.

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 Electricity NIC Governance Document issued pursuant to Part E of Charge Restriction Condition 5A of the Licence the Authority hereby issues this 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.

⁸ As listed in Box 1.6 in Section 1 of the Full Submission pro-forma.

ANNEX 1: PROJECT BUDGET

Cost Category	Cost (£k)
Labour	
	5,094.20
Equipment	
	-
Contractors	
	2,175.30
IT	
	-
IPR Costs	
	-
Travel & Expenses	
	352.70
Payments to users	
	-
Contingency	
	578.42
Decommissioning	
	-
Other	
	3,367.86
TOTAL	11,568.48

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