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Date: 20 December 2019

Dear James,

**Network Innovation Competition – amendments to London Power Networks plc’s PowerFuL-CB project**

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.<sup>1</sup>

London Power Networks plc (LPN) was awarded NIC funding for the PowerFuL-CB NIC project in 2016.<sup>2</sup> The purpose of the PowerFuL-CB NIC project is to make it quicker and cheaper for distributed generation (especially Combined Heat & Power units) to connect to the network. It aims to do this by developing and trialling two new fault limiting circuit breakers on the network.

LPN now wish Ofgem to amend the Project Direction<sup>3</sup> issued on 16 December 2016 (“the 2016 Project Direction”) because LPN has been unable to agree a contract with one of its named project partners as that project partner was unable to sign the contract which aligned with the NIC Governance. This will have consequential impacts on some of the deliverables of the project and also the project budget.

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<sup>1</sup> See <https://www.ofgem.gov.uk/publications-and-updates/version-30-network-innovation-competition-governance-documents>

<sup>2</sup> See Network Innovation Competition decision, Ofgem, 2016; <https://www.ofgem.gov.uk/publications-and-updates/electricity-network-innovation-competition-2016-funding-decision>

<sup>3</sup> The 2016 Project Direction is available here: [https://www.ofgem.gov.uk/system/files/docs/2017/02/powerful-cb\\_formal\\_project\\_direction.pdf](https://www.ofgem.gov.uk/system/files/docs/2017/02/powerful-cb_formal_project_direction.pdf)

This letter contains our decision on the requested changes to project scope, deliverables and budget and sets out related amendments to the 2016 Project Direction in a Schedule ("the Amended Project Direction").

### **Change Request**

The 2016 Project Direction contained the requirements with which LPN were obliged to comply as a condition of the project being funded through the NIC.

On 5 July 2019, LPN submitted a Change Request and asked us to make changes to the 2016 Project Direction. The proposed changes related to the removal of Method 2 from the project and the removal of Applied Materials Inc. (AMAT) as a named project partner.

As a consequence of removing Method 2, LPN proposed an alteration to the project budget and deliverables. However, Method 1 and project timescales would remain unaffected.

In the Change Request, LPN stated the following deliverables are affected:

- SDRC 9.1.2 – Prototype and lab test a customer based solution
  - Specific to Method 2, hence will be de-scoped
- SDRC 9.2.2 – Install and commission solution at a customer's premises
  - Specific to Method 2, hence will be de-scoped
- SDRC 9.2.4 – Demonstration of solution at a customer's premises
  - Specific to Method 2, hence will be de-scoped
- SDRC 9.3.2 – Assess the (commercial) business case based on the technical and customer findings, focusing on investment decision criteria and trade-offs, such as cost, time to connect, space and impact on security of supply
  - De-scoped from PowerFuL-CB project
- SDRC 9.4.1 – Share overall learning from the project with customers, regulators, other DNOs, other manufacturers, and academia via a stakeholder event
  - Re-scoped to be applicable to Method 1 only

LPN proposed to reduce the Project Budget (including contributions by Project Partners) by £1,829k, from £6,189k to £4,360k. This is the result of a reduction in LPN's voluntary contribution of £120k to zero and removal of AMAT's £388k contribution. This would reduce the NIC Funding for the Project by £1,170k.

A summarised version of the revised Project Budget from LPN’s Change Request is copied below.<sup>4</sup>

	<b>Current (£k)</b>	<b>Revised (£k)</b>	<b>Difference (£k)</b>
NIC funding request	4,594	3,425	1,170
UK Power Networks compulsory contribution	518	386	132
UK Power Networks voluntary contribution	120	-	120
Interest	69	49	20
ABB contribution	500	500	0
AMAT contribution	388	-	388
<b>Total</b>	<b>6,189</b>	<b>4,360</b>	<b>1,829</b>

### **Our view**

We note the condition of the 2016 Project Direction which clearly states that licensee will not have access to project funds until they have signed contracts with all the named project partners.

Of the funds in the Project Bank Account, £1,170k is funding for Method 2. For the purpose of recovery of that funding, the relevant Project Direction is the 2016 Project Direction and the funding for Method 2 will not be applied to Method 1 under the terms of the Amended Project Direction. It will, therefore, be recoverable in due course, as money not spent in accordance with the 2016 Project Direction and, therefore, as Disallowed Expenditure.

The funding is being treated as revenue not spent (and therefore as Disallowed Expenditure) further to the change request which LPN itself submitted and on the basis that the funding (a) has not currently been spent and (b) at no point in the future could be spent because of the Change Request.

We consider that, with the proposed amendments contained in LPN’s change request, the PowerFuL-CB project can still deliver benefits. We therefore believe that it is in the interests of customers to enable the project to continue.

Accordingly, we agree with the proposed amendments to the project SDRCs and agree with the proposed changes to the project budget, subject to the treatment of the £1,170k

<sup>4</sup> Note that the table summarising the Project Budget in Annex 1 of the Amended Project Direction does not include £500,000 contribution from Project Partner ABB.

funding for Method 2 as Disallowed Expenditure for the purposes of the 2016 Project Direction. LPN will not spend this money on any part of the project and will leave the £1,170k in the project bank account and not access it, returning it through the NIC Funding Return Mechanism at the end of the project.

### **Our decision**

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. We have published the amended Project Direction alongside this letter.

Our assessment in this letter does not in any way fetter our discretion with respect to any future decisions on the Successful Delivery Reward, should you make a submission when eligible.

If you would like to discuss any of the issues raised in this letter, please contact Graeme Barton at [graeme.barton@ofgem.gov.uk](mailto:graeme.barton@ofgem.gov.uk).

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Steven McMahon', written in a cursive style.

### **Steven McMahon**

Deputy Director, Electricity Distribution & Cross Sector Policy, Network Price Controls

**For and behalf of the Authority**

## Schedule 1 Amended Project Direction

### 1. TITLE

Project Direction ref: LPN / PowerFuL-CB / ~~16 December 2016~~20 December 2019

### 2. PREAMBLE

This Project Direction is issued by the Gas and Electricity Markets Authority (the "Authority") to London Power Networks plc (the "Funding Licensee") pursuant to the Electricity NIC Governance Document issued pursuant to Part E of Charge Restriction Condition 5A (The Network Innovation Competition) of the Electricity Distribution Licence (the "Licence"). It sets out the terms to be followed in relation to PowerFuL-CB (the "Project") as a condition of it being funded under the NIC and the Funding Return Mechanisms.<sup>5</sup> 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 Partners ~~s~~ named in Table 1.

#### Table 1. Project Partners ~~s~~

ABB <del>Applied Materials</del>
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<sup>5</sup> The Funding Return Mechanism is defined in part C of Charge Restriction Condition 5A.

#### 4. COMPLIANCE

The Funding Licensee must comply with Part E of Charge Restriction Condition 5A of the Licence and with the Electricity NIC Governance Document (as may be modified from time to time in accordance with Part E of Charge Restriction Condition 5A and as modified and/or augmented in respect of the Project by this Amended Project Direction) and with this Amended Project Direction.

Subject to the following paragraph, any part of the Approved Amounts that the Authority determines not to have been spent in accordance with this Amended Project Direction (or in accordance with the Electricity NIC Governance Document) is deemed to be Disallowed Expenditure.

The proportion of the Approved Amounts allocated under the 2016 Project Direction to Method 2 which had not been applied to Method 2 as at the date of this Amended Project Direction (£1,170k) shall not be applied to Method 1 in accordance with this Amended Project Direction and are Disallowed Expenditure for the purposes of the relevant 2016 Project Direction and recoverable at the end of the project under the Funding Return Mechanism.

Pursuant to Charge Restriction Condition 5A, 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 ~~£4,594,431.653,424,531.70~~

## 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 ([except in so far as those commitments relate to Method 2](#)) 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.](#)

- (i) undertake the Project in accordance with the description set out in Section 2 (Project Description);
- (ii) provide a Network Licensee Compulsory Contribution of [£518,121.93385,949.86](#)
- (iii) complete the Project on or before the Project completion date of 31 August 2021; 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 (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 0% of the approved amount.<sup>6</sup>

## **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).

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<sup>6</sup> This is the amount requested by the Funding Licensee in its Full Submission.



**Table 2. Successful Delivery Reward Criteria**

Successful Delivery Reward criterion	Evidence
<b>9.1 Work with industry</b>	<b>to advance new FLMTs based on FLCB technology</b>
9.1.1 Prototype and lab test a substation-based solution (Method 1)	<b>Publish Learning Report – Development of a FLCB for substations</b> , which will include: recommendations for specifying a substation-based FLCB; results and learning from type tests (including a short circuit test) conducted at an accredited high power laboratory; and requirements for integrating FLCBs into existing networks and ensuring safety. (31 May 2019)
<del>9.1.2 Prototype and lab test a customer-based solution (Method 2)</del>	<del><b>Publish Learning Report – Development of a FLCB for customers</b>, which will include: recommendations for specifying a customer-based FLCB; results and learning from type tests (including a short circuit test) conducted at an accredited high power laboratory; and requirements for integrating FLCBs into existing networks and ensuring safety. (31 August 2019)</del>
9.1.3 Independent review of safety case	<b>Issue preliminary safety case to relevant ENA panel(s) for independent review</b> which will include: Definition and justification of acceptable levels of risk; analysis of failure modes and effects; details of proposed mitigations; and claims, arguments, and evidence to demonstrate that the proposed mitigations reduce the overall level of risk to an acceptably low level. (31 May 2018)
9.1.4 Safety case for FLCB installation without back-up	<b>Publish preliminary safety case</b> which will include the technological and operational safety case to the time when the trial equipment could be deployed as BAU without the FLCBs being installed in series with a back-up circuit breaker. (31 May 2018)
<b>9.2 Trial the technical suitability of these two technologies including effectiveness and safety considerations for relieving fault level constraints for 11kV networks</b>	
9.2.1 Install and commission solution at an 11kV substation (Method 1)	<b>Publish Interim Learning Report – Demonstration of a FLCB for substations</b> , which will include results and learning from installation, commissioning, and operation to date of a FLCB at a substation. (31 July 2020)
<del>9.2.2 Install and commission solution at a customer’s premises (Method 2)</del>	<del><b>Publish Interim Learning Report – Demonstration of a FLCB for customers</b>, which will include results and learning from installation, commissioning, and operation to date of a FLCB at a customer’s premises. (31 July 2020)</del>

9.2.3 Demonstration of solution at an 11kV substation (Method 1)	<b>Publish Final Learning Report – Demonstration of a FLCB for substations</b> , which will include results and learning from operating and maintaining a substation containing a FLCB, and technical performance of the FLCB and overall solution under real network conditions. (30 June 2021)
<del>9.2.4 Demonstration of solution at a customer’s premises (Method 2)</del>	<del><b>Publish Final Learning Report – Demonstration of a FLCB for customers</b>, which will include results and learning from operating and maintaining a FLCB at a customer’s premises, and technical performance of the FLCB and overall solution under real network conditions. (30 June 2021)</del>
<b>9.3 Assess the suitability of the solutions against customers’ needs</b>	
9.3.1 Review the customer needs for these two FLCBs technologies on behalf of DNOs and DG stakeholders	<b>Publish Learning report – Understanding customers’ requirements</b> , which will describe our findings from customer dialogue sessions, i.e. understanding their requirements and concerns about FLCBs, and customer feedback. (31 October 2017)
<del>9.3.2 Assess the (commercial) business case based on the technical and customer findings, focusing on investment decision criteria and trade-offs, such as cost, time to connect, space and impact on security of supply</del>	<del><b>Publish Learning report – Suitability of Method 1 FLCBs</b>, which will inform generation customers of the solutions, answer frequently asked questions, and provide enough information for customers to assess whether the solution meets their requirements (e.g. cost, time to connect, space required, operational impacts). (31 March 2020)</del>
<b>9.4 Share the learning throughout the project with the wider utility industry</b>	
9.4.1 Share overall learning from the project with customers, regulators, other DNOs, other manufacturers, and academia via a stakeholder event	<b>Publish key materials</b> from the stakeholder event <a href="#">for Method 1</a> (e.g. slides), and provide Ofgem with a list of invitees and attendees. (30 September 2021)

The maximum amount of the Electricity NIC Successful Delivery Reward (which will not exceed the Network Licensee Compulsory Contribution) that the Project will be eligible for is ~~£518,121.93385,949.86~~.

## 12. USE OF LOGO

The Funding Licensee and Project Partners, External Funders and Project Supporters<sup>7</sup> 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 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 of 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 Part E of

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<sup>7</sup> As listed in Box 1.6 in Section 1 of the Full Submission pro-forma.

Charge Restriction Condition 5A.

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 Charge Restriction Condition 5A 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 (£)
<b>Labour</b>	
	<del>1,073,800.02</del> <u>469,499.80</u>
<b>Equipment</b>	
	<del>1,180,650.44</del> <u>973,786.85</u>
<b>Contractors</b>	
	<del>2,240,188.61</del> <u>1,902,834.19</u>
<b>IT</b>	
	0
<b>IPR Costs</b>	
	0
<b>Travel &amp; Expenses</b>	
	<del>91,200.00</del> <u>65,200.00</u>
<b>Payments to users</b>	
	<del>12,864.000</del>
<b>Contingency</b>	
	<del>547,500.00</del> <u>370,758.60</u>
<b>Decommissioning</b>	
	<del>154,838.40</del> <u>77,419.20</u>
<b>Other</b>	
<b>Total</b>	<b><del>5,301,041.47</del><u>3,859,498.65</u></b>