



Making a positive difference  
for energy consumers

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Date: 15 August 2013

Dear Keith

### **Low Carbon Networks Fund – amendments to Eastern Power Networks Flexible Plug and Play project.**

This letter contains our agreement to amend the Successful Delivery Reward Criteria (SDRC) for Eastern Power Networks plc (“EPN”)’s Flexible Plug and Play project (“the Project”).

#### **Background**

On 19 December 2011, we issued a Project Direction<sup>1</sup> to EPN<sup>2</sup>. The Project Direction sets the terms to be followed in relation to the Project as a condition of it being funded under the Second Tier and Discretionary Funding Mechanism<sup>3</sup>.

On 19 June 2013 you first wrote to us requesting two amendments to the Project Direction. These amendments would change two of the Successful Delivery Reward Criteria (SDRCs). Following the letter we replied to you by e-mail seeking further clarification on your request. You provided this on the 19 July 2013. The two requested changes and our decision are outlined below.

#### **SDRC 9.4 – Demonstrate technical characteristics of FPP solution**

SDRC 9.4 relates to the demonstration of the technical characteristics of the Project solution. This SDRC required the demonstration of the overall project installation phase to be completed by the end of September 2013.

The original scope of the project included a provision for two frequent use switches to be deployed at a strategic location on the 33kV overhead line circuits between Peterborough Central and March Grid substations to optimise the amount of distributed generation in the trial area. EPN is also monitoring a reinforcement project currently being carried out at the same strategic location that will utilise Ring Main Units (RMUs) that it believes can deliver the same functionality.

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<sup>1</sup> [FPP project direction](#)

<sup>2</sup> This was pursuant to the LCN (Low Carbon Networks) Fund Governance Document issued pursuant to Part E of Charge Restriction Condition 13 (“CRC13”) of the Electricity Distribution Licence.

<sup>3</sup> Second Tier and Discretionary Funding Mechanism has the meaning given in CRC 13.3(b).

Therefore EPN has determined that it no longer needs to install the two frequent use switches and has requested a change in the projects direction to refund the unspent funds associated with this equipment.

The cost allocation for the frequent use switches was £83,530 for materials and £8,000 for labour giving a total of £92,530. EPN proposes to return £83,277 which equates to the 90% share of the costs (90%) that is covered by LCN funding. (The remaining 10% of the costs was to be funded by EPN.)

We are pleased that EPN has identified how it can deliver the project more efficiently and return money to customers. We encourage all DNOs to look to deliver their LCN Fund projects more efficiently where possible.

We therefore agree with EPN's proposed changes to SDRC 9.4.

### **Successful delivery reward criterion 9.8 – Deployment of Quadrature booster within trial area**

The criterion for this SDRC was the successful deployment of a Quadrature booster within the Project trial area by the end of June 2013.

The Quadrature booster is a specialised form of transformer used to control the power flow by controlling phase angles between the three electrical phases of the network. Used on transmission networks, the project is the first time that this technology will be used on a distribution network in GB.

EPN requests an extension to the SDRC to 9 August 2013 as a number of delays have impacted on the project delivery plan. There were three main reasons for the delay as outlined below:

1. According to the original submission the Quadrature booster was due to be supplied by Alstom, a contract partner. However due to contractual issues with Alstom, EPN needed to procure an alternative supplier to avoid any further delays. Wilson Transformer Pty limited was subsequently selected as the supplier of the Quadrature booster. However, this delay reduced the contingency time.
2. The Quadrature booster protection scheme was initially designed for transmission networks. Quadrature boosters used at transmission level have different characteristics and network integration requirements. This raised a number of questions about the proposed scheme and therefore a validation exercise was required to confirm the actual configuration to be used.
3. During the cold commissioning of the Quadrature booster a number of technical issues were raised. This resulted in additional site testing that stimulated real operational conditions.

Although we consider that some of these delays could have been anticipated, we accept that much of the delay could not have been reasonably foreseen and reflects the innovative nature of the project. We also recognise that the extension requested to the SDRC is relatively short and will not have any significant impact on other parts of the project. EPN should ensure that it fully records and disseminates the learning from this experience.

We therefore agree to EPN's request to extend the deadline for SDRC 9.8 to 9 August 2013. However we note that EPN first sent us the change request on 19 June 2013 this was only 11 days before the original SDRC 9.8 deadline. In future we ask that you request changes to an SDRC well in advance of that SDRCs deadline.

## Decision

In accordance with Section 13 of the Project Direction, and in particular Section 13 (i), the Authority hereby amends the Schedule to the Project Direction in the manner set out in the Schedule to this Direction.

This constitutes notice of reasons for the Authority's decision pursuant to section 49A of the Act.

A handwritten signature in blue ink that reads "Andy Burgess".

Andy Burgess  
Associate Partner Transmission and Distribution policy

## Schedule to Direction

Amend existing section 11 (Successful Delivery Reward Criteria)

Amend existing section 11 of the Schedule to the Project Direction in the following manner:

### 11. SUCCESSFUL DELIVERY REWARD CRITERIA

The Project will be judged by the Authority for the purposes of the Second Tier Successful Delivery Reward against the Successful Delivery Reward Criteria set out in Table 2<sup>4</sup> below (that comply with paragraphs 3.27 and 3.28 of Section Two of the LCN Fund Governance Document).

**Table 2. Successful Delivery Reward Criteria**

Successful Delivery Reward criterion	Evidence
Completion of the first phase of stakeholder engagement activities by the end of September 2012. This will include a stakeholder engagement report that will record the findings from the first phase of stakeholder engagement activities identifying key technical and commercial challenges to the FPP project. These findings will be shared with all the relevant stakeholders, including all GB DNOs, and will form a key input to the Strategic Investment Model and Smart Commercial Arrangements FPP project work streams.	Publication of a stakeholder engagement report ("Stakeholder Engagement report I").
Development of smart commercial arrangements, which will provide a number of options that can be tested and implemented in new types of connection agreements with generation developers. These will be established in conjunction with key stakeholders. The development of smart commercial arrangements will be completed by the end of December 2012 in accordance with agreed specifications.	<ul style="list-style-type: none"> <li>- Publication of a report on Principles of Access, which will determine the Principles of Access for Smart commercial arrangements.</li> <li>- Connection agreements templates (new model forms) for actively managed generator connections, to be established in conjunction with key stakeholders.</li> </ul>
Full deployment of an IP communications platform across the FPP trial area to support open standards communication protocols. This will be completed by the end of March 2013.	<ul style="list-style-type: none"> <li>- Installation and commissioning documentation of Cable &amp; Wireless Worldwide Multi-Service Platform (MSP) network and Silver Spring Networks Radio Frequency (RF) Mesh network in the FPP trial area and in accordance with the specification included in the contracts with the relevant partners.</li> <li>- Recorded results of IEC 61850 communication trials using IEC 61850 simulators at installed locations in the FPP trial area.</li> </ul>
Demonstration of flexible plug and play capabilities of the overall FPP technical solution following completion of the FPP installation phase. This will be completed by	<ul style="list-style-type: none"> <li>- IEC 61850 certification for all relevant RTUs, IEDs and other IEC 61850 field devices.</li> <li>- Installation and commissioning</li> </ul>

<sup>4</sup> These are the Successful Delivery Reward Criteria set out in the Implementing DNOs Full Submission

the end of September 2013.	<p>documentation of IEDs and other field devices necessary to support the trials and in accordance with the specification included in the contracts with the relevant partners.</p> <ul style="list-style-type: none"> <li>- Installation and commissioning documentation of production of Smart Applications in accordance with the specification included in the contracts with the relevant partners.</li> <li>- Pre-production interoperability test results for FPP's Smart Devices and Smart Applications.</li> </ul>
Delivery of the FPP Strategic Investment Model including validation and testing of the model utilising data captured within the FPP trials. This will be completed by the end of December 2014.	<ul style="list-style-type: none"> <li>- Completion documentation for the Strategic Investment Model development and build phase.</li> <li>- Recorded validation and test results.</li> <li>- Delivery of the Strategic Network Investment model in a fully usable and external issue format.</li> </ul>
Deployment of Active Power Flow Management and Active Voltage Management within the FPP trial area. This will be completed by the end of December 2014.	<ul style="list-style-type: none"> <li>- Pre-production functional test results for Active Power Flow Management and Active Voltage Management applications.</li> <li>- Installation and commissioning documentation of production Active Power Flow Management and Active Voltage Management applications in accordance with the specification included in the contracts with the relevant partners.</li> <li>- Suitable agreements with generators in place (if required).</li> <li>- Trial results for the Active Power Flow Management and Active Voltage Management trials.</li> </ul>
Facilitation of faster and cheaper connection of distributed generation to the distribution network, as compared to timescales and costs of connection utilising traditional approaches. To be completed by the end of December 2014.	<p>Demonstration that distributed generation connection offers are:</p> <ol style="list-style-type: none"> <li>1 - Cheaper; and</li> <li>2 - Offer faster project connection timescales, than offers based traditional reinforcement.</li> </ol> <p>The evidence for this criterion will be met through the provision of one connection offer to generators using the FPP methods. If during the duration of the FPP project other generators are in a position to accept a connection offer, then we will use that as evidence supporting this criterion.</p>
Successful deployment of a Quadrature-booster within the FPP trial area. This will be completed by the <del>9 August</del> <u>end of June</u> 2013.	<ul style="list-style-type: none"> <li>- Installation and commissioning of a Quadrature-booster and in accordance with the specification included in the contracts with the relevant partners.</li> <li>- Demonstration of improved balance between the circuits allowing increased power flow of 10MW.</li> </ul>

The maximum amount of the Second Tier Successful Delivery Reward (which will not exceed the DNO Compulsory Contribution) that the Project will be eligible for is £989k;

