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Date: 20 February 2014

Dear Company Secretary

Low Carbon Networks Fund – amendments to Southern Electric Power Distribution’s New Thames Valley Vision project

This letter contains our decision to approve requested amendments to the Successful Delivery Criteria (SDRCs) and Full Submission for Southern Electric Power Distribution (“SEPD”)’s New Thames Valley Vision project (“the project”).

Background

On 19 December 2011, we issued a Project Direction¹ to SEPD.² The Project Direction contains 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.³

On 11 November 2013, SEPD requested amendments to one of the SDRCs in the Project Direction and the specifications for the energy storage and power electronic devices included in the Full Submission. We requested further clarification and final details were received on 27 January 2014. These amendments are being requested following the completion of forerunner projects, which identified the required functionality for these devices, and of an exercise to procure them.

SDRC 9.4c - Install LV connected batteries as defined in SDRC 9.4a

Part of the project involves trialling energy storage and power electronic devices on the low voltage (LV) network. The specification of these devices has been informed by forerunner Innovation Funding Incentive (IFI) and First Tier LCN Fund projects which completed following Full Submission of the project. This learning was used to finalise the required functionality of the devices for the purposes of the project.

Once the specification of the devices was known, SEPD conducted a ‘request for information’ (RFI) and invited 77 companies to respond. Eight companies responded but none had existing products that provided the required functionality in a single package. A formal ‘request for quotation’ (RFQ) was then issued. One response was received to the RFQ which involved parts from multiple suppliers. This solution was eventually ruled out due to issues with the proposal.

¹ <https://www.ofgem.gov.uk/publications-and-updates/low-carbon-network-fund-project-direction-new-thames-valley-vision>

² 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.

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

Other respondents to the RFI were contacted and another potential supplier submitted a bid, again involving components from multiple parties. Following a technical evaluation and several rounds of clarification, this supplier was named as the preferred bidder and an order for the devices placed.

SEPD has stated that delays have been experienced on this aspect of the project due to procurement taking four months longer than planned. Additionally the requirement for the devices to be assembled from separate components has added an additional five months to the anticipated four months for manufacturing and testing.

As a result of these delays, SEPD has requested that we amend SDRC 9.4c, which required two devices to be installed by March 2014. The proposed amendment requires all of the devices to be installed before the end of November 2014. The project plan (and later SDRCs) requires that all of the devices are installed in November 2014 so this change would allow SEPD some flexibility for the trial installations, without impacting on the installation of the remaining devices or the trial duration. SEPD has indicated that the first trial devices have been shipped by the manufacturer.

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 will not have any significant impact on other parts of the project. We therefore agree to SEPD's request to amend SDRC 9.4c in the manner shown in schedule one to this letter. SEPD should ensure that it fully records and disseminates the learning from this experience.

Specifications for the energy storage and power electronic devices provided in the Full Submission

SEPD has also requested a change to the power electronics and energy storage devices as specified in the Full Submission.⁴ Following the completion of forerunner projects, the detailed specification of these devices was finalised. During the procurement exercise, it became clear that the devices required did not currently exist and the project would require components from existing devices to be combined.

The Full Submission envisaged the use of 15 single-phase and 16 three-phase devices. The proposed amendment would involve 25 three-phase devices with two three-phase power electronics extension units and 16 energy storage extension units. The three-phase devices in the new configuration are modular and can operate as single phase devices. While the new specification has 37.5kWh less energy storage, the modular nature allows control of individual phases and in total more phases can be controlled than envisioned in the Full Submission. SEPD has stated that this configuration of the devices will provide the learning set out in the Full Submission. SEPD has indicated that, as the number of components and function is similar, there are no cost implications for the project.

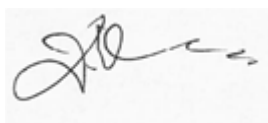
We consider that due to the difficulties experienced, including the market readiness to supply these devices and the learning developed by other projects, this proposed change is in the best interest of customers as it allows the project to proceed and develop the learning identified in the Full Submission. We therefore approve SEPD's proposed changes to the specifications of these devices in the manner shown in schedule two to this letter.

Decision

In accordance with Section 15 of the Project Direction, and in particular Section 15 (i), the Authority hereby amends the Schedule to the Project Direction in the manner set out in the Schedule to this Direction.

⁴ Further details of these devices can be found in Schedule two.

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

A handwritten signature in black ink, appearing to read 'Dora Guzeleva', is positioned above the printed name and title.

Dora Guzeleva,
Head of Networks Policy, Local Grids
For and on behalf of the Authority

Schedule One

1. Amend existing section 11 (Successful Delivery Reward Criteria)

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

| | | |
|-------|---|--|
| 9.4 c | Criterion: March <u>November</u> 2014 – Install 2 <u>25</u> LV connected batteries as defined in 9.4a. | Evidence: Photographic evidence of installs. Site visit will also be offered |
|-------|---|--|

Schedule Two

1. Amend the power electronic and energy storage device specification

Amend the power electronic and energy storage device specification from the Full Submission (page 7) in the following manner:

~~"A total of 15 single-phase (10kW/10kWh) domestic storage units and 16 three-phase (25kW/25kWh) street storage units are planned"~~

"A total of 25 three-phase power electronics and energy storage units (36kVA/12.5kWh each) with two further three-phase power electronics extension units (36kVA each) and a further 16 energy storage extension units (12.5kWh each), of which each phase connection can be independently controlled as if acting as a single phase unit."

| No. units | Unit Description |
|-----------|--|
| 25 | Base Energy Storage and Management Units Comprising: <ul style="list-style-type: none">• 12.5 kWh comprised of 5 modules of 24 cells• 3 x 12kVA per phase four-quadrant power electronics unit (36kVA in total) Finished cabinet for footpath (1200mm high, 400mm deep, 2290mm wide) |
| 2 | Extension Power Electronics Units Comprising: <ul style="list-style-type: none">• 3 x 12kVA per phase four-quadrant power electronics unit (36kVA in total) Finished cabinet for footpath (1200mm high, 400mm deep, 1300mm wide) |
| 16 | Extension Energy Storage Unit Comprising: <ul style="list-style-type: none">• 12.5 kWh comprised of 5 modules of 24 cells Finished cabinet for footpath (1200mm high, 400mm deep, 930mm wide) |