



Making a positive difference
for energy consumers

The Company Secretary
SP Distribution Limited
1 Atlantic Quay
Robertson Street
Glasgow G2 8SP

Direct Dial: 020 7901 1851
Email: dora.guzeleva@ofgem.gov.uk

Date: 27 October 2014

Dear Company Secretary,

Low Carbon Networks Fund – amendments to Flexible Networks for a Low Carbon Future Project

This letter contains our¹ decision to amend the: Approved Project Amount for the Project, Project Implementation, and the Successful Delivery Reward Criteria sections of the Project Direction for SP Distribution Limited's (SPD's) Flexible Networks for a Low Carbon Future project (the Project).

Background

On 19 December 2011, we issued a Project Direction² to SPD.³ The Project Direction set out 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.⁴

On 14 February 2014, SPD requested a number of amendments to the Project Direction. These amendments were requested because of material changes in the circumstances of the Project.

Installation of 11kV Automatic Voltage Regulators

In the Full Submission SPD stated that it would install Automatic Voltage Regulators, to stabilise voltage, in each of the three trial areas: St Andrews, Whitchurch and Wrexham. SPD noted in the change request that "long secondary feeders tend to be voltage constrained under 'abnormal' network feeding arrangements." At the time of the original Full Submission this was thought to describe some of the feeders in the trial areas and was the reason why this technology was going to be installed.

However, following monitoring and analysis work carried out by SPD, as part of the Project, we understand the envisaged constraints do not exist and there is little value in installing

¹ The terms 'the Authority', 'Ofgem', 'we' and 'us' are used interchangeably in this letter. Ofgem is the Office of the Gas and Electricity Markets Authority.

² <https://www.ofgem.gov.uk/publications-and-updates/low-carbon-network-fund-project-direction-flexible-networks-low-carbon-future>

³ 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.

⁴ Second Tier and Discretionary Funding Mechanism has the meaning given in CRC 13.3(b).

Automatic Voltage Regulators at Whitchurch or Wrexham. However, the change request notes that the deployment at St Andrews continues to be valid and will go ahead.

We agree that as the voltage regulators are not needed to address voltage constraints in all three of the trial areas, these should not be installed in two of the trial areas. The risk that the level of learning will be reduced is being mitigated in two ways. Firstly, the voltage regulator installed in the test network at the Power Network Demonstration Centre (PNDC) will be tested through a full range of scenarios. Secondly a non-LCN Fund voltage regulator has been installed for a new generator connection in Ruthin, Wales.

The Project will deliver equivalent learning because of the work being carried out at the PNDC and the additional learning that will be gained from the installation and operation of the Automatic Voltage Regulator in Ruthin. Given that the level of learning will remain the same and money will be returned to customers as a result of this change, we consider the proposed changes to the Project Direction should be approved and that they will be in the interests of customers.

Project completion date

Procurement delays

The Project has encountered delays in procuring new and innovative technologies. The procurement process has taken significantly longer than expected due to the innovative nature of what SPD was procuring. We recognise that the procurement of innovative solutions has taken longer than forecast for a number of LCN Fund projects. This was SPD's first Second Tier project and the lessons learned by other distribution network operators (DNOs) in terms of project implementation could not have been incorporated before the Project was put forward for funding. However, we note that projects that are awarded funding this year and in future Network Innovation Competitions should ensure this lesson is incorporated during project planning.

The proposed changes to the timings of the Project will allow SPD to fully implement the Project, largely in line with the Full Submission. The changes will also ensure that the learning that is developed will be available for inclusion in the close-down report.

System development delays

SPD has determined that the most appropriate method of implementing the Project in Business As Usual (BAU) is via its PowerOn SCADA system. As such it intends to implement the Project using this approach to gain the maximum learning possible. However, separately to the Project SPD is upgrading its SCADA system. This work started following the end of the Full Submission process and coordinating the Project and the upgrade has caused delays.

The proposed changes to the timings of the Project will allow SPD to fully implement the Project using a method that will be most applicable to the likely BAU roll-out scenario if the method is successful.

Delays in the availability of the PNDC

In the full submission SPD said that testing of the solutions in Work Package 2.2 and Work Package 2.4 would commence at the PNDC by October 2013. However, due to the delays commissioning the test network at the facility, work on the Project has been delayed. We recognise that the successful commissioning of this network is out with the control of the Project.

The proposed changes to the timings will allow SPD to fully implement the Project. We also consider that the use of the PNDC to test the automatic voltage regulators is very important given the removal of two automatic voltage regulators from the original Project.

SPD has made it clear in its change request that the use of the PNDC will allow a broader range of testing that would not be possible on the operational distribution network.

Effect of the delays

SPD proposes amending the Project plan in a number of aspects for the reasons set out above. While different elements of the Project are impacted upon in different ways, the combined impact is that SPD proposes that the Project should end in September 2015 instead of December 2014. We consider that, generally, the delays that have come about in the implementation of the Project have been outside the control of the SPD project team. However, we consider more work should have been done when the Project was being developed so that impact of rolling out new SCADA systems could be understood before a submission was made.

Project Budget

The factors described above have impacted on the Project Budget. These have resulted in savings for consumers compared to the original Project Budget. The following factors have reduced the cost of the Project:

- the number of voltage regulators required for the Project has reduced;
- internal labour and contractors' costs have been reduced as the installation of monitoring equipment was less expensive than forecast;
- many of the purchases originally thought necessary for the use of the PNDC have been funded by the founders of the PNDC rather than by the Project; and
- as the Project has already started the licensee's perception of risk to the Project has reduced, this means SPD has reduced the level of contingency funding it feels is necessary.

The savings, of £1,019k, realised as a result of changes to the Project will be returned to customers through the LCN Fund Funding Direction in 2014.

Decision

In accordance with Section 14 of the Project Direction, and in particular Section 14 (i), the Authority hereby amends the Schedule to the Project Direction in the manner set out in the Schedule to this letter.

By approving these changes we are not making an evaluation of SPD's overall management of the project.

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



Dora Guzeleva

Head of Networks Policy: Local Grids

For and on behalf of the Authority

Schedule

Amendments to Schedule to Project Direction

1. Amend existing section five: Approved Amount for the Project

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

The Approved Amount is ~~£3,600k~~ £2,851k

2. Amend existing section seven: Project Implementation

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

The Implementing DNO must undertake the Project in accordance with the commitments it has made in the Full Submission approved by the Authority pursuant to the LCN Fund Governance Document and 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);
- (ii) provide a DNO compulsory Contribution of ~~£625k~~ £515k⁵
- (iii) provide extra funding in excess of the DNO Compulsory Contribution of at least ~~£1,963k~~ £1,917k⁶
- (iv) complete the Project on or before the Project completion date of ~~31 December 2014~~ 30 September 2015; and
- (v) disseminate the learning from the Project at least to the level described in Section 5 (Knowledge Dissemination).

3. Amend existing section twelve: Successful Delivery Criteria

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

Successful Delivery Reward criterion	Evidence
The project will be delivered to budget in accordance with the Tier 2 full submission. A 5% variance will be acceptable between work packages but the overall project will be delivered in line with this submission in order to demonstrate effective cost control.	Ongoing cost reporting to monitor progress and publication of a final report to Ofgem will identify costs incurred per work package to assess compliance with the Tier 2 submission. Project completion date of December 2014 <u>September 2015</u> .
The project will be delivered in accordance with the timelines outlined in the Tier 2 submission to ensure timely learning can be disseminated and adopted in advance of RIIO-ED1 commencing. Delivery in accordance with these timelines, and in line	Ongoing project reporting and formal reports to Ofgem will identify the how well the project is being delivered in accordance with the time lines set out within this submission. Should individual work package time lines deviate from plan, a lower reward

⁵ The DNO Compulsory Contribution may take the form of Direct Benefits realised from the Project

⁶ The DNO Compulsory Contribution may take the form of Direct Benefits realised from the Project

with budget as per criterion 1 will demonstrate effective project management.	weighting may be appropriate as long as the overall project is delivered on time. Completion date December 2014 September 2015.
<p>This criterion is to reward on the basis of degree of success on achieving the stated project outputs.</p> <p>The St Andrews trial will be making use of the network monitoring to improve knowledge of the network and provide robust evidence of the benefits of the physical solutions. The flexible network control, dynamic asset rating and voltage regulators will provide additional back-feed capability such that the existing substation and OHL reinforcements can be deferred or avoided. An increase in capacity of 20% is being targeted.</p>	<p>The Evidence will be submitted in the form of a sufficiently robust business case paper detailing the full basis, costs and benefits of the installed Flexible Network solution sufficient for Scottish Power to defer or avoid the business as usual reinforcement.</p> <p>At the end of the project, evidence detailing how a 20% headroom has been achieved will be published along with details of the methodology for this, along with supporting verification from one of the project partners. A comparative analysis of the traditional reinforcement solution will also be provided to demonstrate the nature of the saving.</p> <p>Work will be undertaken within the permitted CI/CML allowance and with no health, safety or environmental incidents. All of these measures will form part of the internal reporting structure and will feature in any formal report to Ofgem, Completion date December 2014 <u>September 2015</u>.</p>
<p>This criterion is to reward on the basis of degree of success on achieving the stated project outputs.</p> <p>The Wrexham trial (to be undertaken within the SP Manweb DNO licence area) will be making use of the cascade monitoring to improve knowledge of the network and provide robust evidence of the benefits of the physical solutions. The improved knowledge will then be used to allow further PV connections without significant reinforcement as is currently envisaged with the target to facilitate an additional 20% of PV onto the network.</p>	<p>The Evidence will be submitted in the form of a sufficiently robust business case paper detailing the full basis, costs and benefits of the installed Flexible Network solution sufficient for the Licensee to defer or avoid the business as usual reinforcement.</p> <p>An evidence base will be published which outlines the amount of microgeneration which the project has proven can be connected to this part of the network as a result of this solution, a comparative analysis will be provided of the volume of microgeneration which could be connected pre-project, with the target to facilitate an additional 20%. This will be supported by independent analysis by an appropriate project partner to verify the results.</p> <p>Work will be undertaken within the permitted CI/CML allowance and with no health, safety or environmental incidents. All of these measures will form part of the</p>

	internal reporting structure and will feature in any formal report to Ofgem. Completion date December 2014 <u>September 2015</u> .
<p>This criterion is to reward on the basis of degree of success on achieving the stated project outputs.</p> <p>The Whitchurch trial (To be undertaken within the SP Manweb DNO license area) will be making use of the network monitoring to improve knowledge of the network and provide robust evidence of the benefits of the physical solutions. The flexible network control, and dynamic asset rating will provide additional back-feed capability such that the existing substation and OHL reinforcements can be deferred or avoided. A increase in capacity of 20% is being targeted.</p>	<p>The Evidence will be submitted in the form of a sufficiently robust business case paper detailing the full basis, costs and benefits of the installed Flexible Network solution sufficient for the Licensee to defer or avoid the business as usual reinforcement.</p> <p>At the end of the project, evidence detailing how a 20% headroom has been achieved will be published along with details of the methodology for this, along with supporting verification from one of the project partners. A comparative analysis of the traditional reinforcement solution will also be provided to demonstrate the nature of the saving.</p> <p>Work will be undertaken within the permitted CI/CML allowance and with no health, safety or environmental incidents. All of these measures will form part of the internal reporting structure and will feature in any formal report to Ofgem. Completion date December 2014 <u>September 2015</u>.</p>
<p>This criterion covers both Internal and External engagement and dissemination activities as described in Work Package 3.</p> <p>It will also monitor how the Licensee adopts or incorporates the outputs of the LCNF project into the core business processes going forward. Having the positive outcomes accepted as beneficial for core business will be a strong indication of both success of the trials as well as an indication of the commitment of the Flexible Networks project team in driving the business change and acceptance process.</p> <p>The key aspects of this criterion are to ensure that the project provides high quality and timely engagement and dissemination with the internal and external stakeholders.</p>	<p>Internal and External workshops which will include formal post-workshop surveys to effectively score the success of the learning. Surveys will include points on whether there is sufficient high level information to understand the project context, as well as detailed information on the solution design, data/information gathered and shared, and how the acceptance process within SP Energy Networks progressed.</p> <p>A survey will also be undertaken within each trial area of the affected Stakeholders to gauge the level of satisfaction and to confirm whether they felt they were sufficiently informed of the activities, benefits and risks of the LCNF project.</p> <p>Further proposed milestones which will demonstrate this success are:</p> <ul style="list-style-type: none"> - Project website established to provide overview of project - April 2012 - Site visit of PNDC for DNO and Ofgem

	representatives to demonstrate technology - June 2013 - Formal dissemination event to disseminate outcomes - December 2014 <u>September</u> <u>2015</u>
--	--

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 £625k £515k.

4. Amend existing Annex One to the Schedule to Project Direction: Project Budget

Cost Category	Total (£k)
Labour	2049-1203
Project Management	479 452
Internal Stakeholder Engagement	65 44
Installation and Maintenance	456 40
Internal Engineering Days	1049 668
Equipment	2008 1815
WP1.2 Monitoring Equipment (Whitchurch)	326 284
WP1.2 Monitoring Comms. (Whitchurch)	38 40
WP1.2 Monitoring Equipment (St Andrews)	499 551
WP1.2 Monitoring Comms (St Andrews)	59 42
WP1.2 Monitoring Equipment (Ruabon)	189 234
WP1.2 Monitoring Comms (Ruabon)	22 32
WP2.1 Dynamic rating equip. (Whitchurch)	70 15
WP2.1 Dynamic rating equip. (St Andrews)	155 90
WP2.2 Control equip. (St Andrews)	194 334
WP2.1 Dynamic rating equip. (Ruabon)	70 5
WP2.2 Control equip. (Whitchurch)	146 59
WP2.4 11kV Voltage Regulators	240 128
Contractors	1106 1533
TNEI Days	147 291
Internal Engineering Days	94 148
University Assistance	289 380
Other contractors	474 680
Legal and Procurement	102 34
IT	319
System Development / Network Control Functionality	125
Software Licences and Contractor Days	44
IT Upgrades & incorporation of equipment technology	150
IPR Costs	0
Travel & Expenses	44 22
Travel Expenses	44 22
Payments to users	100
WP2.3 Energy Efficiency	100
Contingency	304 223
Whitchurch	64 21
Ruabon	31 26

St Andrews	100 84
TNEI days	4
Internal Engineering Days	20
Contractors	34
IT	14
Legal and Procurement	5
Payments to Users, Maintenance/Faults and Decommissioning Days	8
11kv Voltage Regulators	24 8
Decommissioning	45 33
WP1.2 Decommissioning Days (Secondary s/s monitoring)	45 33
Other	278 37
Work at PNDC and other Lab work	224 37
Interruptions	0