



Making a positive difference
for energy consumers

Company Secretary
SP Manweb Plc
3 Prenton Way
Prenton
CH43 3ET

Direct Dial: 020 7901 7106
Email: Geoffrey.Randall@ofgem.gov.uk

Date: 16 January 2018

Dear Company Secretary,

Project Direction ref: SPMW / LV Engine / 16 January 2018

SP Manweb Plc (SPMW) submitted the project LV Engine (the Project) in August 2017 to be considered for funding through the Electricity Network Innovation Competition (NIC). In this year's decision¹, we selected the Project² for funding.

This Project Direction contains the terms to be complied with by SPMW as a condition of the Project receiving funding through the Electricity NIC. It must comply with these terms, which can be found in the Schedule to this Project Direction.

Project direction

Chapter 5 of the Electricity NIC Governance Document³ states that a Project Direction will:

- set out the Project-specific conditions that the Network Licensee (which for this project is SPMW) is committing to in accepting funding;
- require the Network Licensee to undertake the Project in accordance with the commitments it has made in the Full Submission. Where appropriate, the Project Direction may therefore include extracts from the Full Submission or refer to specific sections of the Full Submission;
- set out the Approved Amount for the Project, that will form part of the calculation contained in the Funding Direction issued by the Authority under Chapter 7 of the Governance Document;
- set out the Project budget that the Network Licensee must report against and how variances against the Project budget will be reported and approved; and

¹ <https://www.ofgem.gov.uk/publications-and-updates/network-innovation-competition-2017-funding-decisions>

² Unless otherwise specified, defined terms in this Project Direction have the meaning given to them in Appendix 1 of the Electricity NIC Governance Document.

³ <https://www.ofgem.gov.uk/publications-and-updates/version-30-network-innovation-competition-governance-documents>

- set out the mechanism for the Network Licensee receiving the Approved Amount as set out in section 4 of the Funding Direction.

These are described for the Project in the Schedule to this Project Direction.

Decision

Provided SPMW complies with the Electricity NIC Governance Document and with the Schedule to this Project Direction, the Project is deemed to be an Eligible NIC Project.⁴

This Project Direction constitutes notice pursuant to section 49A (Reasons for decisions) of the Electricity Act 1989.

Geoffrey Randall
Associate Partner, RIIO Networks
For and on behalf of the Authority

⁴ Eligible NIC Project has the meaning given in definitions of the Electricity Distribution licence.

Schedule to Project Direction

1. TITLE

Project Direction ref: SP Manweb Plc / LV Engine / 16 January 2017.

2. PREAMBLE

This Project Direction is issued by the Gas and Electricity Markets Authority (the "Authority") to SP Manweb 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 complied with in relation to LV Engine (the "Project") as a condition of it being funded under the NIC and the Funding Return Mechanisms.⁵

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

UK Power Networks

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 Project Direction) 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 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

⁵ The Funding Return Mechanism is defined in part C of Charge Restriction Condition 5A.

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.

5. APPROVED AMOUNT FOR THE PROJECT

The Approved Amount is **£7,290,061.43**

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.

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 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 £824,159.77
- (iii) complete the Project on or before the Project completion date of 31 December 2022 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.

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	Technical specification of SST and functional specification of the LV Engine schemes' including relevant control algorithms.	10/12/2018	A document detailing the technical requirements of SST including: 1. Continuous and emergency operating ratings. 2. Voltage control capabilities. 3. Power flow control capabilities. 4. Fault control and fault ride through capabilities. 5. Environment operating conditions. 6. Protection requirements. 7. Functional specification of the LV Engine schemes including control algorithms.	10%

Internal Only

Reference	Project Deliverable	Deadline	Evidence	NIC funding request (100%)
2	Detailed technical design of SST by the manufacturer and life cycle assessment.	22/12/2019	Production of two documents: 1. Detailed design: The information will be provided as much as it complies with IRP agreement with the manufacturing partner, that can include the topology (stages) of SST, the cooling system, the choice of conductor, the control algorithm, SST protection logic, and all the lessons learnt within WP 3. 2. Life cycle assessment: The results of life cycle assessment based on manufacturing and material process which will be conducted by an academic or consultant partner.	20%
3	Manufacture SSTs for LV Engine schemes.	11/01/2021	Manufacture SSTs for demonstrating the objectives of each LV Engine scheme as described in Section 2.1.3. of the Full Submission.	20%
4	Complete network integration tests.	28/09/2020	1. Shipping the SST prototype to live network integration facility. 2. Complete network integration testing as per test specifications developed within Work package 1. 3. Obtain a network integration certificate for SST prototypes from the chosen testing facility.	10%
5	Establish the system architecture of LV Engine schemes.	20/06/2021	1. Monitoring equipment is installed and measured data is sent to the SST and SP Energy Networks real time system (RTS). 2. Live performance can be monitored through a dashboard specifically designed for LV Engine schemes. 3. The SSTs performance is recorded in the SP Energy Networks data historian. 4. Remote access to control and troubleshooting of SST is established	15%

Reference	Project Deliverable	Deadline	Evidence	NIC funding request (100%)
6	Demonstrate the functionalities of SST.	20/06/2022	<ol style="list-style-type: none"> 1. Assessment of performance data in different loading/generation conditions where SST has performed LV voltage control. 2. Assessment of performance data in different loading conditions where SST shares capacity with a conventional transformers or another SST. 3. Assessment of performance data of LVDC network. 	14%
7	Best operational practices of SSTs.	07/11/2022	<ol style="list-style-type: none"> 1. A report detailing a cost benefit analysis methodology for the future deployment of LV Engine schemes as BaU. 2. Providing a report recommending the methodology for selecting the best transformer schemes including use of SST or OLTC. 3. Recommending a policy document which can be used for BaU adoption of SST. Providing a refined SST technical specification which can inform future SST deployment across the UK. 	10%
8	Identify a trial site for replicating LV Engine solution within UK Power Networks.	26/09/2022	<p>A report detailing the following:</p> <ol style="list-style-type: none"> 1. Network issues can be resolved within UK Power Networks by deploying LV Engine solutions 2. Details of the potential trial site within UK Power Networks for deploying LV Engine solution 3. Expected financial benefit by deploying LV Engine solution. 	1%
Common Project Deliverable				

Reference	Project Deliverable	Deadline	Evidence	NIC funding request (100%)
N/A	Comply with knowledge transfer requirements of the Governance Document.	31/12/2022	<ol style="list-style-type: none"> 1. Annual Project Progress Reports which comply with the requirements of the Governance Document. 2. Completed Close Down Report which complies with the requirements of the Governance Document. 3. Evidence of attendance and participation in the Annual Conference as described in the Governance Document. 	N/A

12. USE OF LOGO

The Funding Licensee and Project Partners, External Funders and Project Supporters⁶ may use the NIC logo for purposes associated with the Project but not use the Ofgem logo in any circumstances.

⁶ As listed in Box 1.6 in Section 1 of the Full Submission pro-forma.

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.

ANNEX 1: PROJECT BUDGET

Cost Category	Cost (£)
Labour	
	1,735,484.35
Equipment	
	3,383,701.62
Contractors	
	1,824,894.65
IT	
	123,778.50
IPR Costs	
	-
Travel & Expenses	
	320,314.30
Payments to users	
	6,000.00
Contingency	
	384,771.66
Decommissioning	
	0
Other	
	0
Total	8,241,597.70