



Making a positive difference
for energy consumers

Company Secretary
Western Power Distribution –
West Midlands
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Direct Dial: 0207 901 7106
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Date: 16 December 2016

Dear Company Secretary,

Project Direction ref: WPD WMID / OpenLV / 16 December 2016

Western Power Distribution (West Midlands) plc (WPD WMID) submitted the project OpenLV (the Project) in August 2016 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 followed by WPD WMID 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 WPD WMID) 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
- set out the mechanism for the Network Licensee receiving the Approved Amount as set out in section 4 of the Funding Direction.

¹ <https://www.ofgem.gov.uk/publications-and-updates/electricity-network-innovation-competition-2016-funding-decision>

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-2-1-network-innovation-competition-governance-documents>

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

Decision

Provided WPD WMID 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
Head of RIIO Electricity Transmission
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: WPD WMID / OpenLV / 16 December 2016.

2. PREAMBLE

This Project Direction is issued by the Gas and Electricity Markets Authority (the "Authority") to Western Power Distribution (West Midlands) 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 OpenLV (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 Partner named in Table 1.

Table 1. Project Partner

EA Technology Ltd

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 Ofgem's permission, any funds that have not been spent in accordance with the approved Project

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

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 **£4,854,578.52**

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 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);
- (ii) provide a Network Licensee Compulsory Contribution of £544,568.00
- (iii) complete the Project on or before the Project completion date of 30 April 2020; 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.⁶

⁶ This is the amount requested by the Funding Licensee in its Full Submission.

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).

Table 2. Successful Delivery Reward Criteria

Successful Delivery Reward criterion	Evidence
1) Specification, Design and Factory Testing of the overall OpenLV solution.	
<ul style="list-style-type: none"> • Technical Report – Outlining the detailed design of the overall OpenLV Solution. The report will contain chapters or appendices including the following information: <ul style="list-style-type: none"> ○ Detailed systems architecture. ○ Requirements specification for the OpenLV intelligent substation hardware. ○ An assessment of the development of the intelligent substation control software to identify whether any changes are required to the planned deployment for the OpenLV project. ○ Detail the approach for testing the overall solution ahead of wide scale deployment. ○ Factory and site acceptance test documentation. ○ Factory testing results. 	<ul style="list-style-type: none"> • Submit Technical Report to Ofgem which contains: <ul style="list-style-type: none"> ○ the specification for the OpenLV solution. ○ FAT and SAT documentation. ○ FAT test results. (27 October 2017)
2) Identification of Target Networks (Method 1), Community Engagement Plan, Assessment of the Market Potential (Methods 2 & 3) and Detailed Trial Design for all Methods.	
<ul style="list-style-type: none"> • Plan – To detail approach to achieve planned outcomes under Method 2. The plan will include the approach to pre-planning, trial structuring and early consultation work. • Technical Report – To enable the successful implementation of all Methods. The report will contain chapters or appendices including the following information: <ul style="list-style-type: none"> ○ Assessment and identification of the target areas of the LV Network to maximise learning for Method 1. ○ An assessment of the market 	<ul style="list-style-type: none"> • Published community engagement plan that explores, among others, the following hypotheses: <ul style="list-style-type: none"> ○ Who engages? ○ Under what conditions? ○ What are the barriers? ○ How do all participants see the benefits? (31 December 2017) ○ Sharing the technique(s) used to identify target LV networks. (30 May 2018). ○ Sharing the results from assessing the market potential for sharing LV network data with and providing an open platform to communities that want to be part of a smarter grid. Interim report (31 December 2017) and final report (30 May 2018).

Successful Delivery Reward criterion	Evidence
<p>potential for Community Engagement (Method 2).</p> <ul style="list-style-type: none"> ○ An assessment of the market potential for OpenLV Extensibility (Method 3). ○ Detailed trial design for all methods. 	<ul style="list-style-type: none"> ○ Sharing the results from assessing the market potential for sharing LV network data with and providing an open platform to academics and companies (including non-energy companies). Interim report (31 December 2017) and final report (30 May 2018). ○ Detailed trial design for all methods. (30 May 2018).
3) Learning from Deployment of the Overall OpenLV Solution & Standard Guidelines for Application Development.	
<ul style="list-style-type: none"> • Technical Report – Outlining the learning from the site testing completed on the OpenLV solution before wide scale deployment. The report will contain chapters or appendices including the following information: <ul style="list-style-type: none"> ○ An overview of the OpenLV Solution (technical specifications and how it works). ○ The installation documentation for the intelligent substation devices. ○ Confirmation that the third party system has been installed and configured to support wide scale deployment. ○ An overview of the training provided to installation and operational staff. ○ Site Acceptance tests for the central IT Architecture. ○ Results of site acceptance tests on the initial intelligent substation devices before wide scale roll-out. ○ Standard guidelines to enable 3rd party organisations to develop new Applications. ○ App development (skeleton implementation of a software container to speed up App development). 	<ul style="list-style-type: none"> ○ Sharing the installation documentation for the intelligent substation devices. ○ Sharing the training material provided to all installation and operational staff. ○ SAT results for the central IT architecture. ○ Sharing the learning generated from the deployment of the central systems architecture and initial intelligent substation devices. ○ Quality Assurance processes / test processes to ensure Apps are sufficiently robust prior to being made available for deployment. <p>(1 February 2019)</p>
4) Learning Generated from the OpenLV Project Trials for All Methods.	
<ul style="list-style-type: none"> • Technical Report – Outlining the learning generated from the trials from Methods 1, 2 and 3. The SDRC will be split into three individual reports to showcase the learning generated from the project trials for all Methods. 	<ul style="list-style-type: none"> ○ Sharing the level of capacity uplift achieved through Method 1. ○ Sharing which LV networks can benefit from OpenLV and why. ○ Establishing the level of capacity uplift that could be achieved in WPD’s licence area and across GB (applicability of other DNOs). ○ Sharing how DNOs can engage with communities who want to become part of a smarter grid to exploit the open and flexible nature of OpenLV. ○ Sharing how community engagement supports the uptake of LCTs. ○ Outlining the routes communities can take to raise funding.

Successful Delivery Reward criterion	Evidence
	<ul style="list-style-type: none"> ○ Sharing the network benefits provided by community engagement. ○ Sharing how DNOs can engage with academics, companies (including non-energy companies) to exploit the open and flexible nature of OpenLV. ○ Sharing the network benefits provided through Method 3. ○ Sharing how the method facilitates non-traditional business models. <p>(31 January 2020)</p>
<p>5) Knowledge Capture, Dissemination & Transferring the OpenLV Solution to Business as Usual.</p>	
<ul style="list-style-type: none"> • Technical Report – Assessing the Technology Readiness Level (TRL) of the overall OpenLV solution to enable the solution to be rolled out as part of BaU. The report will contain chapters or appendices including the following information: <ul style="list-style-type: none"> ○ The key learning generated from each of the Methods. ○ Replicability and scalability of the Methods, Trials and overall Solution. ○ A Cost Benefit Analysis of each of the Methods and the overall solution based on the data generated on the project. ○ A specification for the overall OpenLV Solution to enable the system to be taken into BaU. ○ Recommend changes to the overall Security of the Solution (if required). ○ Training needs analysis (who needs to know and what do they need to know) to enable the OpenLV solution to be rolled out as part of BaU. 	<ul style="list-style-type: none"> ○ Summary of key project learning. ○ Knowledge and learning dissemination reports and presentation. ○ Network data being made available from each of the methods. ○ Six-monthly progress reports submitted to Ofgem throughout the project. ○ OpenLV project presentations delivered at six industry conferences during the course of the project from March 2017 to June 2020. ○ OpenLV project presentations delivered at each of the LCNI conferences during the course of the project. ○ Cost benefit analysis for each method. ○ A summary of the training needs analysis required to enable roll out as part of BaU. ○ Recommendations for changes to system security ahead of wide scale deployment. ○ A summary of changes that need to be made to the overall OpenLV solution to enable roll out as part of BaU. ○ Delivery of the Loadsense App. ○ Economic analysis / extrapolation for the tested Community Applications Method 2. ○ Enduring tools for community groups throughout GB to use beyond the end of the project. <p>(30 April 2020)</p>

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 £544,568.00.

12. USE OF LOGO

The Funding Licensee and Project Partners, External Funders and Project Supporters⁷ 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 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) if Ofgem agrees to provide Contingency Funding, which requires the re-issue of the 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 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.

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 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.

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

ANNEX 1: PROJECT BUDGET

Cost Category	Cost (£)
Labour	
	267,310.00
Equipment	
	853,640.00
Contractors	
	3,775,070.00
IT	
	2,490.00
IPR Costs	
	0
Travel & Expenses	
	29,710.00
Payments to users	
	0.00
Contingency	
	451,460.00
Decommissioning	
	66,000.00
Other	
	0.00
Total	5,445,680.00