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Decision on 2018 Low Carbon Networks Fund and Network Innovation Competition Successful Delivery Reward applications

Final decision

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Overview:

In May 2018 we received applications from network licensees for a Successful Delivery Reward for three completed Low Carbon Network (LCN) Fund projects, two electricity Network Innovation Competition (NIC) projects, and one gas NIC project. Having considered the applications, we have decided to award a total of £3.9m across the six projects. Five projects received 100% of the award applied for and one project received 95% of the amount applied for.

This document sets out our assessment of each project's Successful Delivery Reward application and the consequential award.

Context

Network companies need to innovate to address the challenges they face. We recognised this when developing the fifth electricity distribution price control (DPCR5) and introduced the Low Carbon Networks (LCN) Fund. Subsequently, in the RIIO (Revenue=Incentives+Innovation+Outputs) price control we have introduced two innovation mechanisms: the Network Innovation Allowance (NIA) and the Network Innovation Competition (NIC).

The schemes fund the companies to conduct research and run network-related trials of technologies that will facilitate the transition to a low carbon economy, where these offer cost savings and/or wider environmental benefits for customers. The funding provided to companies under the schemes is paid for by consumers through their bills.

Certain LCN Fund and NIC projects are eligible to apply for a Successful Delivery Reward, the SDR aimed to incentivise good project and financial management of the innovation projects by licensees.

Associated documents

Low Carbon Networks Fund Governance Document v.7

Network Innovation Competition Governance Documents v.3

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Executive Summary

Our framework for regulating network companies contains mechanisms to stimulate innovation. The Low Carbon Networks (LCN) Fund financed innovation projects during the fifth electricity distribution price control (DPCR5), either through an allowance or a competitive process. Licensees were awarded funds for projects that will help networks meet the challenges posed by the low carbon transition or delivered other environmental benefits. In the RIIO-1 price control framework, the LCN Fund has now been replaced by the Network Innovation Competition (NIC) and Network Innovation Allowance (NIA) which have a similar aim.

The Successful Delivery Reward (SDR) is a financial reward companies can apply for on completion of certain LCN Fund or NIC projects for network companies that deliver projects efficiently. Network companies make a compulsory contribution of 10% of the total project funding approved at the start of the project. This is the maximum value of the SDR for each project. Companies can apply to receive this once their project is complete if they can demonstrate how they have met certain criteria.

There is an annual window for completed LCN Fund and NIC projects to apply for their SDR. In 2018, three completed LCN Fund and two completed electricity NIC projects, and one completed gas NIC project, applied for the SDR. We used their applications, along with other evidence received in the course of the projects (see 1.10 for further information) to assess whether each project had been well managed and met its Successful Delivery Reward Criteria (SDRC).

Our decisions on the reward for each project are presented in Table 1 below.

Table 1: Allocation of the Successful Delivery Reward for each project

Innovation project	Funding mechanism	Network Company	Licensee Compulsory contribution (£'000)	Total Awarded SDR (£'000)
Accelerating Renewable Connections	LCN Fund	SP Energy Networks	846	846
FlexDgrid	LCN Fund	Western Power Distribution	1,285	1,285
Kent Active System Management	LCN Fund	UK Power Networks	378	378
Offshore Cable Repair Vessel & Universal Joint	Electricity NIC	TC Ormonde OFTO Limited	41	41
Visualisation of Real Time System Dynamics using Enhanced Monitoring	Electricity NIC	SPT	737	737
Robotics	Gas NIC	SGN	738	701

1. Introduction

1.1. Network companies need to innovate to address the challenges they face and facilitate the transition to a low carbon economy. As a result, we developed the Low Carbon Networks (LCN) Fund for the electricity distribution companies under the last price control, DPCR5, which ran until 31 March 2015. Part of the LCN Fund was in the form of an annual competition where companies competed for funding for innovation projects (known as the "Second Tier"). We then also developed two annual innovation competitions as part of the current RIIO price control. These are known as the "Network Innovation Competition" (NIC) with one competition for electricity and one for gas.

1.2. Before licensees were awarded funding to implement a project, licensees submitted proposals. These were reviewed by both Ofgem and an independent Expert Panel. The Expert Panel recommended which projects should be awarded funding with each network company required to make a compulsory contribution of 10% of the funding requested.

1.3. Following the conclusion of a project licensees implementing Second Tier projects, and certain NIC projects, are eligible to apply for a Successful Delivery Reward (SDR) where they could receive some or all of their ten per cent contribution. As part of their submissions licensees proposed Successful Delivery Reward Criteria (SDRC). These were refined as part of the assessment and finalised within the Project Direction issued for each project awarded funding. If a company wishes to change part of the SDRC once the project had been approved they are required to come to us for approval.

1.4. All Second Tier LCN Fund projects and NIC projects awarded funding on or before 2016 are eligible to apply to Ofgem for a SDR once the project has been completed. Before submitting their application, the projects' close down report must be peer reviewed.

1.5. There is an annual window for completed LCN Fund and NIC projects to apply for their SDR. In 2018, three completed LCN Fund projects, two completed electricity NIC projects and one gas NIC project applied for the SDR. The total amount of funding applied for was £5.7 million.

Assessment process

1.6. The process for assessing the SDR applications is set out in the LCN Fund and NIC Governance Documents.[1] Licensees are required by the respective licence conditions to comply with the document as though they formed part of the licence. Throughout this document we simply refer to the "Governance Document" as both

[1] The LCN Fund Governance document is available here. The NIC Governance Documents are available here.

the NIC and LCN Fund Governance Documents are consistent in their requirements for the SDR.

1.7. The Governance Document sets out the three elements we consider as part of assessment of SDR applications, these are summarised here:

- whether the project specific SDRC, contained in their project direction, had been met to a quality that we expected and whether they were delivered on time;
- the final project cost to understand if the SDRC were met cost-effectively; and
- the management of the project, in particular how risk and uncertainty were controlled and how significant changes to the project were managed.

1.8. We place greater weighting on the first element (50%) because it is directly related to evaluating how the SDRC were met.

1.9. The remaining weighting is split evenly between cost effectiveness (25%) and project management (25%), which includes how risk, uncertainty and change are managed.

1.10. We assess projects on a case by case basis. We use:

- evidence submitted in the applications;
- responses from the companies to our supplementary questions; and
- evidence gathered by us during the life of the project.

1.11. We adopt a standard assessment process to ensure the projects are treated consistently and fairly.

1.12. Some of the projects submitted underwent changes in their scope, methodology and expected outputs, which can be expected due to the nature of innovation projects. In order to incorporate these changes into the project directions, the licensees submitted change requests to us for approval.

1.13. When we were assessing whether to approve these change requests, we considered whether there had been a material change in circumstances and whether the changes were in customers' interest. We were not evaluating the licensee's management of change and approving the request does not influence our decision on the level of the award under the SDR. Instead, this was part of our assessment of whether licensees had effectively managed risk and change, we reduced the amount of the reward where we thought the licensee had not made full use of risk management tools. We also reduced the amount of the reward where we considered documents submitted to us as part of a change request were not of the required standard.

1.14. We expect lessons from running these projects to be applied to current and future innovation projects.

Structure of this document

1.15. The remainder of this document explains our assessment of each project's SDR application. Each chapter looks at a single project and provides our decision on each of the three elements, including where we have reduced the reward for a licensee.

2. Accelerating Renewable Connections (ARC)

Project Summary

2.1. SP Energy Networks (SPEN) was awarded funding to implement the ARC project through the LCN Fund. The project sought to trial novel equipment, operational practices and commercial arrangements to enable communities to use locally generated electricity. The aim was to allow generators to connect to the distribution network earlier before reinforcement to the distribution, or transmission networks which might otherwise be needed has been completed.

Did the project meet its SDRC?

2.2. We consider the evidence submitted by SPEN in its SDR application for the ARC project demonstrates that the SDRC were delivered to an acceptable quality. The evidence provided indicates that some reports were not published until after the deadline however, not sufficiently so as to reduce the level of the reward. We therefore consider the project met its SDRC.

Were the SDRC cost-effectively delivered?

2.3. SPEN overspent on some line items. However, this was suitably justified in SPEN's submission. Overall SPEN delivered the project significantly under budget. Some reallocation of budget between line items was necessary but this was justified. Overall SPEN delivered the project for £600,000 lower than the original project budget. The unspent budget will be returned to consumers. Overall, we consider SPEN's approach to be cost-effective.

How well was ARC managed?

2.4. We consider that overall SPEN has managed the project well.

2.5. SPEN did not require any change requests for this project. Throughout the project SPEN identified risks and explained how these were mitigated within its six monthly progress report. Only one issue that had not been identified as a risk arose. There were no community owned generation schemes that were suitable for inclusion in the project. Given the list of fifteen potential projects provided by the Partner we consider that the assumption that one would be suitable is reasonable. We consider that SPEN took all practicable measures to rectify the issue and this did not require a change to the overall project.

Our decision

2.6. **We have decided to award the project the full SDR available: £846,230.**

2.7. This reflects the fact that SPEN has delivered the ARC project to a satisfactory standard, on time and under budget. How this has been calculated is set out below:

	Available / £	**Awarded / £**
SDRC Delivery	423,115	423,115
Cost effectiveness	211,558	211,558
Project management	211,558	211,558
Total	**846,230**	**846,230**

3. FlexDGrid

Project Summary

3.1. Western Power Distribution (WPD) was awarded funding to implement the FlexDGrid project through the LCN Fund. The project sought to develop new fault level[2] assessment processes, monitor fault levels and deploy alternative mitigation solutions to reduce the cost and time necessary to connect generation to the distribution system.

Did the project meet its SDRC?

3.2. We consider the evidence submitted by WPD in its SDR application for the FlexDGrid project demonstrates that the SDRC were delivered to an acceptable quality and on time. Throughout the project, WPD published evidence demonstrating delivery of its SDRCs. We therefore consider the project met its SDRC.

Were the SDRC cost-effectively delivered?

3.3. Overall, WPD managed to deliver the project £1.17m below the budget set out in the project direction. The unspent budget was returned to consumers. In March 2017.

3.4. We approved a change request from WPD to transfer budget between categories. Whilst the majority of budget categories were delivered within budget, WPD overspent on some budget categories. WPD provided satisfactory explanations for these overspends within the SDR application. Overall, we consider WPD's approach to be cost-effective.

How well was FlexDGrid managed?

3.5. We consider that the project risk and uncertainty were generally managed satisfactorily. WPD updated the risk and issues log between six monthly reports and generally flagged risks to us promptly as they became issues.

3.6. We consider that overall WPD has managed the project well. WPD submitted one change request in relation to the FlexDGrid project. As part of this change request, WPD requested to reduce the number of Fault Level Mitigation Technologies (FLMT)[3] from five to three, transfer budget between budget categories and correct several mistakes in the original Project Direction. WPD made us aware of the main change (reducing the number of FLMTs) as soon as it became apparent that

[2] Fault level is a measure of electrical stress when faults occur within networks.
[3] A FLMT is a device that ensures that fault currents remain within switchgear and network equipment ratings.

the manufacturer was unable to produce the FLMTs to the required quality on time and on budget. We consider that WPD took all practicable measures to rectify the issue that required a change request. However, we note that it took several iterations until we considered that we had sufficient information for us to make decision.

Our decision

3.7. **We have decided to award the project the full SDR available: £1,285,480.**

3.8. This reflects the fact that WPD has delivered FlexDGrid to a satisfactory standard, on time and under budget. Whilst we consider that it took several prompts from us to ensure that sufficient information was provided as part of the change request to justify their proposed changes, we do not consider that this was sufficient to result in us lowering the SDR.

3.9. How this has been calculated is set out below:

	Available / £	**Awarded / £**
SDRC Delivery	642,740	642,740
Cost effectiveness	321,370	321,370
Project management	321,370	321,370
Total	**1,285,480**	**1,285,480**

4. Kent Active System Management (KASM)

Project Summary

4.1. UK Power Networks (UKPN) was awarded funding to implement the KASM project though the LCN Fund. The KASM project aimed to demonstrate the value of contingency analysis software in operational timeframes on the network in East Kent. The project was the first occasion on which contingency analysis was used on the GB distribution network, and was the first trial of the implementation on a coordinated and interfaced basis with the electricity transmission network.

Did the Project meet its SDRC?

4.2. We consider the evidence submitted by UKPN in its SDR application for KASM demonstrates that the SDRC were delivered to an acceptable quality and on time. We therefore consider the Project met its SDRC.

Were the SDRC cost-effectively delivered?

4.3. UKPN did not overspend against any budget lines. Overall UKPN managed to deliver the project £616,000 below the budget set out in the Project Direction. No reallocation of budget between line items was therefore necessary. The unspent budget will be returned to consumers. Overall, we consider UKPN's approach to be cost-effective.

How well was KASM managed?

4.4. UKPN submitted two change requests during the course of the project, both of which were approved.

4.5. The first of these change requests was for an eight month delay on the delivery of SDRC 9.2 and 9.3 due to unforeseen complications in extracting and aligning data from UKPN's long-term planning and control systems.

4.6. The second change request was the result of a knock-on effect of the data extraction complications, and requested that the delivery of SDRC 9.4 be delayed by six months. This was raised as a possibility in the first change request.

4.7. Both requests were approved by Ofgem. Due to the low impact of the requested date changes on the project deliverables, UKPN was directed to manage these changes outside of a formal change request process, and therefore no changes were made to the Project Direction.

4.8. Changes were identified, tracked and reported in meetings and six month reports well before any of the affected SDRC were scheduled for delivery. UKPN managed the process of changing the project satisfactorily.

4.9. We consider UKPN's approach to risk management in this project was proven by the timely identification of necessary changes to SDRC delivery dates. The risks listed in the six-monthly reports, which reflect the project direction, have been regularly updated. The risk section included mitigation measures, and updates as to how the risk was being managed.

Our decision

4.10. **We have decided to award the project the full SDR available: £378,065.**

This reflects the fact that UKPN delivered the project to a satisfactory standard, on time and on budget. How this has been calculated is set out below:

	Available / £	**Awarded / £**
SDRC Delivery	189,032	189,032
Cost effectiveness	94,516	94,516
Project management	94,516	94,516
Total	**378,065**	**378,065**

5. Offshore Cable Repair Vessel and Universal Joint

Project Summary

5.1. TC Ormonde OFTO Limited (TC Ormonde) submitted the project Offshore Cable Repair Vessel and Universal Joint on 25 July 2014 for consideration through the second year of the electricity NIC. The project was selected for funding.

5.2. The purpose of the project was: to convert a telecommunications cable repair vessel to enable subsea repairs; and to design, manufacture and test new universal joints, capable of connecting dissimilar cable types.

5.3. According to the Project Direction, dated 19 December 2014, the project was divided into two phases: (i) an Initial Phase involving a detailed design and feasibility study; and (ii) a Main Phase involving construction of the vessel and universal joints. The project was halted after phase one. Further information on the reasons for this can be found in our decision letter where we explain why the project was halted.[4]

Did the project meet its SDRC?

5.4. We consider the evidence submitted by TC Ormode in its SDR application for the Initial Phase of the project demonstrates that the relevant SDRC were delivered to an acceptable quality and on time. We therefore consider the project met its SDRC.

Were the SDRC cost-effectively delivered?

5.5. TC Ormonde did not overspend against the budget set out for the Initial Phase in the Project Direction. No reallocation of budget between line items was necessary.

5.6. Competitive tenders were undertaken to select the developers of the required designs and feasibility studies for vessel conversion and joint development.

5.7. Overall, we consider TC Ormonde's approach to be cost-effective.

[4] https://www.ofgem.gov.uk/publications-and-updates/network-innovation-competition-offshore-cable-repair-vessel-decision-halt-project

How well was OCRV managed?

5.8. TC Ormonde was required to submit a six monthly report. During the Initial Phase of the project, three Progress Reports were submitted.

5.9. Through these reports, risks and uncertainties were identified, assessed and detailed in a risk register; mitigation measures and learning opportunities arising from the risk identification process were considered and communicated appropriately.

Our decision

5.10. **We have decided to award the project the full SDR available for the Initial Phase: £41,000**

5.11. This reflects the fact that TC Ormonde delivered the Initial Phase of the project to a satisfactory standard, on time and on budget. How this has been calculated is set out below:

	Available / £	**Awarded / £**
SDRC Delivery	20,500	20,500
Cost effectiveness	10,250	10,250
Project management	10,250	10,250
Total	**41,000**	**41,000**

6. Visualisation of Real Time System Dynamics using Enhanced Monitoring (VISOR)

Project Summary

6.1. Scottish Power Transmissions Ltd. (SPT) was awarded funding to implement the VISOR project in December 2013 through the Electricity NIC. The VISOR Project sought to use enhanced monitoring techniques to provide a number of benefits associated with the secure integration of new technologies onto the transmission network and also provide visibility of system voltage and stability limits.

Did the Project meet its SDRC?

6.2. We consider the evidence submitted by SPT in its SDR application for VISOR demonstrates that the SDRC were delivered to an acceptable quality and on time. We therefore consider the Project met its SDRC.

Were the SDRC cost-effectively delivered?

6.3. SPT did not overspend against overall budget. SPT managed to deliver the project, and supplementary project changes £261,510 below the budget set out in the Project Direction. The unspent budget will be returned to consumers.

6.4. Several budget line items were re-allocated. The main reasoning behind these re-allocations was moving resources and services from contractors to in-house and long term staff training and skills development.

6.5. There was a large overspend in Labour Dedicated Resources. This is mainly due to long term external consultancy and project support which was classified under the category, and a stronger focus on training and skill development for staff. As this overspend was covered by underspend in other areas, overall the project remained under budget. Overall, we consider SPT's approach to be cost-effective.

How well was VISOR managed?

6.6. SPT submitted one change request during the course of the project which was approved on 31 March 2017.

6.7. The change request consisted of an extension of the Project end date, and the creation of an independent data visualisation/interaction tool for handheld devices to better allow for wider dissemination of the Project's learning.

6.8. The extension of the Project end date allowed for SPT to integrate the developed system into SP Transmission's Energy Management System (EMS) within their network control room; as well as provide training to the control centre staff and incorporate the system within their critical infrastructure. SPT also included four additional SDRCs[5] in its change request.

6.9. Project progress and SDRC progress were tracked and reported in six month reports and were received by Ofgem in a timely manner.

6.10. We consider SPT's approach to risk management in this project was proven by the detailed Project Progress Reports which included carefully monitoring and identification of risks, and mitigation strategies for each. As well, SPT provided an extensive risk registry management strategy that was reviewed, maintained, and updated on a regular basis throughout the project.

Our decision

6.11. **We have decided to award the project the full SDR available: £736,982.**

6.12. This reflects the fact that SPT delivered the project to a satisfactory standard, on time and on budget. How this has been calculated is set out below:

	Available / £	**Awarded / £**
SDRC Delivery	368,491	368,491
Cost effectiveness	184,245	184,245
Project management	184,245	184,245
Total	**736,982**	**736,982**

[5] Network Innovation Competition– amendments to Scottish Power Transmission's Visualisation of Real Time System Dynamics using Enhanced Monitoring (VISOR) project, 21 April 2017; https://www.ofgem.gov.uk/publications-and-updates/network-innovation-competition-amendments-scottish-power-transmission-s-visualisation-real-time-system-dynamics-using-enhanced-monitoring-visor-project

7. Robotics

Project Summary

7.1. SGN were awarded funding to implement their Robotics project through the Gas NIC. The project designed, developed and trialled a robotic platform used to seal metallic joints, and remotely inspect interior of large diameter mains operating at pressures up to 2bar.

Did the project meet its SDRC?

7.2. We consider the evidence submitted by SGN in its SDR application for Robotics demonstrates that the SDRC were delivered to an acceptable quality and on time. We therefore consider the Project met its SDRC.

Were the SDRC cost-effectively delivered?

7.3. The project was delivered under budget in all but one area. The only area that was delivered above budget was IT, which was within the 5% threshold allowable.

7.4. SGN delivered the project £348,900 under budget. The unspent budget will be returned to consumers. Overall, we consider SGN's approach to be cost-effective.

How well was the Robotics project managed?

7.5. SGN was required to provide reports at key milestones throughout the project. All of these reports were of an acceptable standard and were provided within pre-agreed deadlines.

7.6. SGN provided risk analysis throughout their quarterly reports and detailed analysis of these risks and their progression was provided.

7.7. SGN submitted its SDR application before publishing a peer reviewed close down report. The Governance Document requires licensees to publish a peer reviewed close down report prior to making an SDR application. Upon inquiry, it is our view that this was an administrative error, and have therefore chosen to accept the project's application. We have however taken this error into account when considering the appropriate level of SDR.

7.8. Overall, we consider the project management under the robotics to be of a generally satisfactory standard.

Our decision

7.9. **We have decided to award the project the 95% of the SDR available: £701,100.**

7.10. This reflects the fact that SGN generally delivered the project to a satisfactory standard, on time and on budget. However, we have taken the decision to deduct 5% from the total reward available to reflect that SGN did not fully comply with the processes set out in the Governance Document. The reward calculations are set out in the table below:

	Available / £	**Awarded / £**
SDRC Delivery	369,000	369,000
Cost effectiveness	184,500	184,500
Project management	184,500	147,600
Total	**738,000,**	**701,100**

8. Next Steps

8.1. We will implement our decisions on this reward by directing the DNOs to recover the SDRs through the 2018 LCN Fund funding direction[6] in accordance with the LCN Fund Governance Document. Separately we will require National Grid Gas plc (NGG) and National Grid Electricity Transmission plc (NGET) to recover the total SDR amount for the GDN, OFTO and TO respectively and transfer the appropriate amounts as part of the NIC funding direction. [7] The funding directions will also take into account any funding to be returned to customers, including project underspends and revenue from royalties generated by LCN Fund and NIC projects.

8.2. We will issue the funding directions in time for the DNOs, NGG, and NGET to prepare their indicative use of system tariffs at the end of December 2018. This will allow DNOs to recover any awarded SDR in the 2019/20 regulatory year.

8.3. There is a potential further award available to the LCN Fund Second Tier project under the Discretionary Funding Mechanism. This reward, in contrast to the SDR, is designed to provide an additional incentive for DNOs to engage in the objectives underpinning the LCN Fund. There are two assessments for this reward, the first of which is ongoing.

8.4. This document constitutes notice of our reasons for our decision in accordance with section 49A of the Electricity Act 1989 and section 38A of the Gas Act 1986.

8.5. If you have any queries, please contact: networks.innovation@ofgem.gov.uk.

[6] The LCN Fund Funding Direction set out how much each Distribution Services Provider (DSP) can recover from customers through Use of System Charges and the net amounts to be transferred between DSPs to cover the costs of eligible funding under the LCN Discretionary Fund. The Funding Directions will take account of any funding to be returned to customers, including revenue from royalties generated by LCN Fund projects.

[7] The NIC Funding Direction sets out how much the system operators can recover from customers through Use of System Charges and the net amounts to be transferred to licensees to cover the costs of NIC projects and any Successful Delivery Reward. The Funding Directions will take account of any funding to be returned to customers, including revenue from royalties generated by NIC projects.