Project Progress Report (PPR)

Capacity to Customers (C_2C) Project

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Produced by: Craig McNicol
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CONTENTS

VERSION HISTORY

Version	Date	Author	Status (draft, etc)	Comments
1.0	16 December 2013	C McNicol	1st issue	

APPROVAL

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GLOSSARY OF TERMS

Abbreviation	Term
CEP	Customer Engagement Plan
CRMS	Control Room Management System
C_2C	Capacity to Customers
DPS	Data Protection Statement
I&C	Industrial & Commercial
MPAN	Meter Point Administration Number
SDRC	Successful Delivery Reward Criteria
SDRC output	Discrete evidence of attainment or part attainment of an SDRC as defined in the Project Direction
RTU	Remote Terminal Unit
NMS	Network Management System
GE PoF	GE PowerOn Fusion Network Management System
GSM	Global System for Mobile Communication (GSM)

All other definitions shown starting with a capital letter are as per Low Carbon Networks Fund Governance Document v.6

1. EXECUTIVE SUMMARY

The C_2C Project was authorised to commence in January 2012 and is due to complete in December 2014. The aim of the Project is to test new technology, network operational practices (ie closed HV rings), the customer experience of being connected to a closed ring and commercial demand response contracts that will allow Electricity North West to increase the loadings on a selection of Trial circuits representing approximately 10% of our HV network without resorting to conventional network reinforcement. In other words to 'release' inherent spare capacity in the HV system in order to accommodate the future forecast increases in demand whilst avoiding (or deferring) the cost and environmental impacts that are associated with traditional network reinforcement. The Project consists of customer and commercial, technology and learning, and dissemination Workstreams.

The Project has developed and is trialling new demand response contracts that will allow Electricity North West to manage the import or export capacity of either existing or new connections customers on the Trial circuits under fault or abnormal system conditions. Existing customers are receiving regular monthly payments in exchange for the managed contract, whereas new connections customers are being offered the option to sign up to a connection contract with demand response obligations in exchange for a reduced connection / reinforcement charge.

In the event that a fault occurs on or adjacent to the HV network feeding such a customer, the contract will allow Electricity North West to manage all or part of their import or export capacity, if required by the network, to enable Electricity North West to restore customers' supplies in as short a time as possible. It is envisaged that many future customers may opt for part of their demand to be managed in this manner in exchange for reduced connection charges.

The Project commenced the live Trial phase in April 2013 and this will continue until September 2014. There has been considerable customer engagement throughout the Project both in preparation for Trial go-live and since go-live. This will continue throughout the Trial period.

The Project actual costs to date are £7.0m and the estimated at completion costs is now £8.8m, which is £1.5m favourable to Project Budget (including contingency).

Progress to date

This report is the fourth Project Progress Report and covers the period June to November 2013 inclusive. The Project is on track and key highlights to date are;

The ongoing customer engagement element of the project is progressing well.

- We have started to conduct post fault customer surveys on C_2C circuits and early findings support the hypothesis that customers experience/perceive a shorter restoration time.
- We have also started to conduct surveys of customers who have either accepted or rejected a C_2C contract in order to enhance our understanding of the motives and barriers to take-up.

The above interviews will be continued to allow for qualitative analysis to be undertaken. Progress will be reported in the next Project Progress Report.

We will continue to monitor and sample survey customers connected to the trial circuits to measure their perception of power quality/reliability of being connected to a trial circuit. We will also compare the perceptions of those customers on trial circuits (test group) to those that are not (control group).

Recruitment of new connections customers

This element of the project has been adversely affected by the economic downturn resulting in lower overall system demand and hence fewer qualifying applications requiring reinforcement. As a consequence we have been able to offer fewer C_2C managed connection agreements to new connections customers as these only benefit customers when reinforcement is required.

We have currently signed one new connection contract and have eleven new customer opportunities that we are pursuing. We are continuously monitoring this element of the project. However, even with ten months of the Trial remaining given the present economic conditions it is difficult to predict if the target of ten contracts will be achieved. We are considering if it will be necessary to extend the Trial beyond the current end date of September 2014. This would involve extending the software licences and support for the GE PowerOn Fusion product and maintaining the commercial workstream resources. Both of these activities are currently outperforming budget and it is therefore likely that such an extension, if it were required, could be funded without exceeding the Project Budget. At this stage we are not requesting any such extension and we will closely monitor progress regarding new customer contracts.

Recruitment of existing customers

- We have achieved our SDRC relating to purchasing a minimum of ten existing customer contracts.
- We have plans to purchase a total of 11-13 contracts to ensure we have a sample representative of all typical load sizes, circuit fault rates and market sectors.
- We have purchased contracts and generated learning using two of the three routes to market, namely direct and via an agent. The remaining contracts we plan to purchase via Flexitricity ie the third and final route to market.

During the reporting period the Project has delivered 11 SDRC outputs, these are detailed in section 5. The most significant are shown below.

Table 1.1 Most significant SDRC delivered during the reporting period

Milestone	Workstream	Completion date
9.6.2 Submit third project progress to Ofgem	Dissemination	Jun-13
9.6.5 Publication of third white paper	Dissemination	Jun-13
9.5.4 P2/6 recommendation report issued	Technical	Aug-13
9.3.8 Fourth customer seminar	Dissemination	Nov-13

Milestone	Workstream	Completion date
9.6.3 Present to fourth industry conference (2013 LCN Annual Conf)	Dissemination	Nov-13

During the next reporting period the Project will seek to complete negotiations of at least ten post-fault demand response contracts with new customers, continuously monitor and model the effect of changes to the network running configuration, monitor any subsequent effects on Trial participants and customers connected to Trial circuits and continue to disseminate learning on an ongoing basis.

Summary of key risks

There is one risk associated with the achievement of a Project SDRC or maintaining consistency with the Full Submission. This risk is summarised below and described in detail in section 4 of this report.

Risk description	Category
Low economic activity and reduced system maximum demand may affect participation for new connections customers.	Recruitment

Summary of key learning outcomes delivered in the period

A detailed description of the Project's learning outcomes can be found in section 6, the areas where learning has emerged are summarised below:

- Engagement with customers.
- Aggregator and agent engagement.
- Demand side response price model.
- Managing the network.
- Updating Engineering Recommendation P2/6.

Third Party dissemination activities

Event	Contribution	Date
SMI's European Demand Response Seminar	Presented	June 13
WPD Substation Monitoring Knowledge Sharing Event	Presented	July 13
NEA Annual Conference	Presented	Sept 13
EA Technology DSR Forum – Customers	Presented	Oct 13
SMi's Distribution Automation Europe Conference	Presented	Oct 13
Low Carbon Network Fund Annual Conference	Presented	Nov 13
Fourth Customer Seminar	Presented	Nov 13
Various trade magazine articles and newsletters	Published	Various

Internal dissemination activities

- Various briefings to Connections business' system planners/ designers.
- Briefings and training to system planners regarding production of C_2C design and quotations.

- Briefings to control and operational staff regarding the changes to operational configuration of the Trial circuits.
- Briefings to Executive Leadership Team via Project reporting process.
- Company-wide briefings via our intranet and internal Newswire magazine.

2. PROJECT MANAGER'S REPORT

2.1 General Project Management

The most significant Project management activities undertaken during the reporting period are listed below:

- Management of Project resources.
- Project monitoring and control.
- Internal and external stakeholder awareness.

During this reporting period the Project emphasis has moved away from technology installation and preparation for Trial go-live to Trial implementation. The key focus of the project has been customer engagement, data collections and data analysis. Continuous internal stakeholder engagement has taken place in order to embed the Trial processes and obtain feedback from those involved. This process will continue as the Trial progresses as and when learning is generated that requires internal communication.

During the next reporting period significant Project management activities will be:

- Continued stakeholder engagement and management.
- Continued Project monitoring and control.

There are no Project management risks or issues that are associated with delivery of a Project SDRC or maintaining consistency with the Full Submission.

2.2 Technology Workstream

The most significant Technology Workstream activities during the reporting period are listed below:

- Issue of ER P2/6 recommendation report.
- Installation of remote control devices at Trial participant's premises.
- Continued work with University Partners to commence losses, power quality, carbon and economic benefit analysis work with the Universities of Manchester & Strathclyde.

All SDRC that are associated with the above activities are complete or on track.

During the current reporting period the emphasis of the Workstream shifted from installation and commissioning works to completion of P2/6 recommendation report and management of work with our academic Partners. The Workstream also supported the commercial activity of securing existing customer Trial participants by conducting site surveys and commissioning works at the premises of any customers that agreed to take part in the Trial.

During the next reporting period, the Technology Workstream's significant activities will be:

- Continuation of losses, power quality, carbon and economic benefit analysis work with the academic Partners.
- Installation of remote control equipment at customers' premises and other locations as appropriate as and when Trial participants are secured.

There are no Technical Workstream risks or issues that are associated with delivery of a Project SDRC or maintaining consistency with the Full Submission.

2.3 Customer and Commercial Workstream

The most significant Customer and Commercial Workstream activities during the reporting period are listed below:

- Continued engagement with existing I&C customers via our Partners Flexitricity and npower to secure Trial participants.
- Continued direct engagement with new I&C demand and generator customers to secure new connections Trial participants.
- Distribution of project pamphlet to 350,000 customers connected to the Trial circuits.
- Customer seminars and briefings.
- Ongoing customer surveys throughout the Trial to obtain feedback from customers connected to Trial circuits (test group) and customers not on trial circuits (control group) to allow for comparisons to be made.

With the exception of engagement with new demand or generation customers all SDRC that are associated with the above activities are complete or on track. As stated in the executive summary the activity of securing ten managed connections agreements has been affected by low economic activity and reduced system maximum demand due to a continuation of the economic recession in the North West region. This risk is described in full in section 4 if this document.

During the next reporting period the Customer and Commercial Workstream's significant activities will be:

- Continued engagement with existing I&C customers via our Partner Flexitricity to secure Trial participants using an aggregator.
- Continued direct engagement with new I&C demand and generator customers to secure new connections Trial participants.
- Customer seminars and briefings.
- Ongoing customer surveys throughout Trial to obtain feedback from Trial participants and domestic customers connected to Trial circuits.

There is one Commercial risk associated with the achievement of a Project SDRC or maintaining consistency with the Full Submission. These risks are summarised below and described in detail in section 4 of this report.

Risk description	Category
Low economic activity and reduced system maximum demand may affect participation for new connections customers.	Recruitment

3. CONSISTENCY WITH FULL SUBMISSION

During the current period Ofgem approved a change request associated with the project under clause 3.101 of the Low Carbon Networks Fund Governance Document v.6. This change was in relation to the involvement of Enernoc (one of our aggregator Partners). Enernoc declined to participate in the tender exercise that was undertaken in order to agree the recruitment processes and the costs for Partners to purchase C_2C demand response from our existing customer base. The contract to procure up to ten C_2C agreements from existing customers was subsequently awarded to npower. With the exception of the above issue the Project is being undertaken in accordance with the Full Submission.

4. RISK MANAGEMENT

4.1 Risks and issues experienced during reporting period

Recruitment Risks

There is currently one recruitment risks that are associated with the achievement of the Project SDRCs or maintaining consistency with the Full Submission.

Low economic activity and reduced system maximum demand may affect participation for new connections customers (R023) - Status: Open – Likelihood: Moderate, Impact: Significant

Risk: There is a risk that we may not secure ten demand response contracts with new customers, leading to failure to achieve a Project SDRC, because of lower than anticipated economic activity and reduced system maximum demand in the North West region.

Action plan:

We have performed a number of actions to mitigate this risk. The first proactive action was taken during Trial circuit selection activity where connections market activity was a key criterion for assessing suitability of the circuit for inclusion in the Trial. Since December 2012 we have increased engagement with developers to reinforce and cement awareness of the opportunities that may exist to obtain lower cost connection quotations. We have been closely monitoring new connections applications on the C_2C circuits from January 2013 onwards. In addition to this we are also performing a number of other actions such as:

1. Review of all non C_2C applications that have expired or are about to expire. There may be opportunities to re-design and re-quote based on the C_2C design principles to customers who have not accepted on the basis of the original quote being too high.
2. Review of all accepted 'non C_2C quotations' that have gone into construction but not yet started on site. Some of these may be eligible for and benefit from being re-designed and re-quoted based on the C_2C design principles. In all cases this would be by agreement with the customer. And subject to an eligibility test (ie in the trial area).

To date we have currently signed one new C_2C connection contract. We have received 256 applications that are 'on or near' a trial circuit. However, due to the reduction in system

maximum demand only six of these require a circuit to be reinforced such that a lower cost C_2C quote can be offered to the customer.

The table below shows the decrease in maximum demand associated with the Trial circuits from 2010/11 onwards. This demonstrates a reduction of approximately 6.6% since the creation of the project Full Submission.

	Maximum demand figures (in MVA)		
	2010/11	2011/12	2012/13
MD all C_2C Primary Substations	2,049.39	1,954.02	1,923.11
% change from 20010/11	**0.0%**	**-4.9%**	**-6.6%**

Summary

The economic recession has resulted in a general decline in demand that has resulted in a 6.6% reduction in maximum demand on the Trial circuits. Hence only 2% of eligible schemes actually require reinforcement such that a lower cost C_2C quote can be offered to the customer. We are optimistic that a number of the applications that are currently eligible will be converted into accepted C_2C new connections agreements.

Procurement, Installation and Other

Risks

There are currently no Procurement, Installation or Other risks that affect our ability to deliver the Project as described in the Full Submission.

4.2 Risks that existed at time of documenting the Project Full Submission

The narrative below refers to risks that existed at time of submission and were detailed in Appendix 2 of the Full Submission.

Recruitment Risks

No recruitment risks were detailed in Appendix 2 of the Full Submission.

Procurement Risks

Risk 8 – Project Partners walk away once Project is won - Status: Controlled

We have signed contracts with GE Energy, PB Power, npower and our University Partners who are all are actively engaged in the Project. As described in section 3 of this report, Enernoc has declined to actively participate in the purchase of C_2C DSR agreements for strategic commercial reasons. We are currently working with Flexitricity who remain committed to the Project and we are working to secure their participation in engaging with and securing Trial participants. This will be a key area of focus during the next reporting period.

Installation Risks

Risk 1: Risk that internal Operations team will not be able to support installation of automated devices - Status: Controlled

The vast majority of installation work has now been completed. The only installation work remaining is the installation of equipment at Trial customer's premises as and when they sign contracts (approximately 20 sites). Our Technology Workstream is liaising directly with the installation resource and no issues are foreseen over the remainder of the Project.

Risk 6 – Network equipment cost overruns - Status: Controlled

This activity has been completed within budget.

Other Risks

Risk 2: Risk that key personnel will not be available to deliver the Project - Status: Controlled

The Project delivery team has been recruited and are part of the same department as the bid development team, which supported the delivery team during the mobilisation stage of the Project. The Project is now past its most intensive period and is sufficiently resourced to deliver the remainder of the Project.

Risk 3: Risk of problems with the financial control of the Project because of the new requirement for a separate bank account - Status: Controlled

The Project Bank Account has been set up and monthly processes have been put in place to review receipt and payments on a monthly basis.

Risk 4: Failure to achieve low carbon saving - Status: Open – Likelihood: Moderate, Impact: Significant

The carbon impact of the Project will be better understood once we begin to negotiate C_2C contracts and gain an understanding of the levels of DSR secured.

Action plan: Continuously review from commencement of Trials. This is also a key activity that is being modelled by our Partner, Tyndall Centre (for Climate Change) at University of Manchester.

Risk 5: Poor Project management - Status: Controlled

The Project team has been recruited. The Project manager is a member of the Project Management Institute and holds Professional Project Manager credentials (PMP). Weekly and monthly Project governance meeting have been established and implemented. These include monthly updates to the sponsoring director.

Risk 7 – Payment to customer cost overruns - Status: Controlled – Likelihood: Moderate, Impact: Low

This risk is now controlled. We have now purchased the minimum of ten agreements with existing customers within the Project Budget of £300k. Five agreements have been purchased directly and five via npower acting as our agent. In addition to this and as

outlined above we believe that it is appropriate to purchase more than the minimum commitment in order to determine the price point and acceptability across a representative range of customers. We are working with Flexitricity to secure additional agreements using their own equipment and this may require the use of some of the £100k contingency associated with this activity.

5 SUCCESSFUL DELIVERY REWARD CRITERIA

During the reporting period, 11 planned SDRC were delivered. These are detailed in table 5.1 below.

Table 5.1 SDRC delivered in reporting period

Milestone	Planned date	Completion date	Comments
Submit Project Progress Report number three to Ofgem	Jun-13	Jun-13	
Publication of white paper number three	Jun-13	Jun-13	Analysis of electrical losses in meshed distribution systems[1]
Present to industry conference number three (European Demand Response and Dynamic Pricing 2013)	Oct-13	Jun-13	Brought forward
P2/6 recommendation report issued	Sept-14	Jun-13	Brought forward
Publication of trade magazine article number six	Jul-13	Jul-13	
Customer seminar number three	Aug-13	Aug-13	
Publication of trade magazine article number seven	Sep-13	Sep-13	
Project pamphlet number two	Oct-13	Oct-13	
Present to industry conference number four (2013 LCN Annual Conf)	Dec-13	Oct-13	Brought forward
Publication of trade magazine article number eight	Nov-13	Nov-13	
Customer seminar number four	Dec-13	Nov-13	Brought forward

Details of the SDRC that were delivered at variance to the planned dates agreed in the Project Direction are highlighted below:

P2/6 workshops, consultation and recommendation report – Activity brought forward

If the Capacity to Customers concept were to be rolled out post Trial, changes may need to be made to ER P2/6. An industry consultation has always been in scope of the Project and in our last Project Progress Report we highlighted our plan to accelerate this consultation in order to avoid an overlap between it and an industry debate regarding its replacement ie

[1] Published on the IET website at http://eandt.theiet.org/contribute/white-papers/index.cfm

the development of ER P2/7 and also to fit in with Ofgem's timetables for ED1 and WS6 (Smart Grids Forum). We believe it will be beneficial to the Project and the industry as a whole to conclude this debate as soon as practicable and to that end we have engaged with all the DNOs and various industry stakeholders. We have completed an industry consultation and have published a recommendations report on the implications of C_2C for P2/6 during the current reporting period. Our work indicates that there is a general consensus among network operators that P2/6 does not preclude the use of n-1 DSR to maintain compliance. There is a difference of view regarding the requirement to change ER P2/6 in the short or long term to enable Demand Side Management to be used at an appropriate level. Our work indicates that there is support for an update to ETR130 to clarify the use of DSR and the management of system intact load levels in the short term. Subsequent to the consultation process we have issued a recommendation report. This report is currently undergoing revision due to further discussions with DNO's regarding the question of whether DSR should be accounted for in Group Demand or Network Capacity.

Various engagement activities – Activity brought forward

We have accelerated a number of our dissemination/ customer engagement activities in order to better align them to key project milestones or actual external event dates.

The SDRC planned for the next reporting period can be seen in table 5.2 below.

Table 5.2 SDRC look ahead

Milestone	Planned date	Forecast Completion date	Comments
Submit project progress report number four to Ofgem	Dec-13	Dec-13	On track
Publication of white paper number four	Dec-13	Dec-13	On track
Network data available to stakeholders	Jan-14	Jan-14	On track
Publication of trade magazine article number nine	Jan-14	Jan-14	On track
Publication of trade magazine article number ten	Mar-14	Mar-14	On track
Customer seminar number five	Apr-14	Apr-14	On track

During the next reporting period none of the SDRCs are forecast to be delivered at variance to the planned dates contained within the Project plan appended to the Full Submission.

6 LEARNING OUTCOMES

We have established a Project website which is used as a repository for sharing Project learning to interested stakeholders. The learning outcomes during the period are described below.

Lesson 1: Engagement with customers (Power Quality Monitoring initial findings)

Background: Now that the trial is live a series of surveys is being conducted to monitor the effects of the trial on customers in two areas:

1. Measuring customer perceptions of their power quality and reliability ie fault frequency, duration, dips and spikes throughout the trial period.
2. Comparing the perceptions of those customers who are not on C_2C circuits (control) to those that are (test).

So far 212 interviews have been completed, predominantly with domestic customers. The results of these surveys have been weighted to ensure they are representative of the general customer profile.

Lessons learned

1. Customers in the trial areas perceived significantly fewer faults since the C_2C trial began in April 2013 compared to those in non-trial areas (8% v 18% of respondents).
2. Customers in the trial areas perceived significantly fewer dips or spikes in their supply compared to non-trial areas (14% v 28% of respondents).
3. Three times as many respondents in the trial areas said that the frequency of faults had decreased (9% v 3%) and only a third as many said they had increased (2% v 6%).

Further comments

These findings suggest that for domestic customers the introduction of C_2C improves perceptions of the occurrence of faults. Faults under C_2C conditions are generally shorter in duration than faults on circuits outside of C_2C. So the question remains: are these lower levels of observation amongst customers on trial circuits a result of fewer faults actually taking place or as a result of customers finding them more difficult to detect, thus enhancing perceptions of power quality? Further post-fault interviews will be conducted in order to answer this question.

The ongoing power quality monitoring survey will be repeated in February 2014 and again in August 2014 before the trial is completed. Further interviews will also be conducted with Industrial and Commercial customers to allow for qualitative analysis to be undertaken.

Lesson 2: Aggregator and agent engagement

Background: A key commercial deliverable during the current period was to understand the likely margin charged by aggregators or agents for the purchase of C_2C contracts. In order to do this we fully engaged with aggregators and provided as much information as possible to them including list of target customer MPANs, post codes and circuit list such that aggregators could check these against their own client lists.

Lessons learned

1. The aggregators had few clients within the Electricity North West area.

2. Aggregators tend to be focused on a small number of large customers geared to FR[2] and STOR[3].
3. There are three possible routes to market namely:
   a. DNO direct,
   b. Agent/ aggregator finder's fee using our equipment with the contract model being Electricity North West direct with the customer; and,
   c. Via an aggregator using their system.
4. Each aggregator had different views on the value of C_2C Managed Connections Agreements, commission levels and contract models.
5. Aggregator cost = 30% 'on costs' vs DNO 8% 'overhead'.
6. DNO direct engagement is attractive as it facilitates a strong ongoing customer relationship that builds customer confidence in the proposition.
7. Customer engagement cannot occur remotely, face to face meetings are imperative.

Lesson 3: Demand side response price model.

Background: In addition to establishing aggregator / agent 'on costs' it has been necessary to analyse a variety of data sources in order to establish the range of market prices for the C_2C Managed Connections Agreements for existing customers. Numerous sources of data were examined including Reckon[4] report, aggregator view, feedback from potential service providers (I&C customers), IIS proxy method[5] and internal Electricity North West experience of purchasing DSR products. It should be noted that this exercise was not straightforward as the C_2C concept is new and there is no like-for-like historic data to analyse for this type of service.

Lessons learned

1. There were widely differing values from each of the sources regarding the projected cost of C_2C (post fault) DSR.
2. Much of the information used to establish the target price was provided by third parties in confidence. This data was analysed and was sufficient for us to identify what we believe to be a sensible target price with upper and lower limits that we are now using as the basis for negotiations with potential Trial participants.
3. During the development of the commercial templates, customers indicated they would value certain variables within the contract such as protected days, protected circuits eg essential load and a range of hours associated with the maximum delay to supply restoration.
4. Having formulated a target price for the 'vanilla' service of 1MVA of DSR with no protected days and a maximum supply restoration delay of eight hours we then had to decide what adjustment factors should be applied to the 'target price' taking account of each contract variable. This was done and an easy to understand

[2] **Frequency Response** - System frequency is a continuously changing variable that is determined and controlled by the second-by-second (real time) balance between system demand and total generation.

[3] **Short Term Operating Reserve** - A service for the provision of additional active power from generation and/ or demand reduction.

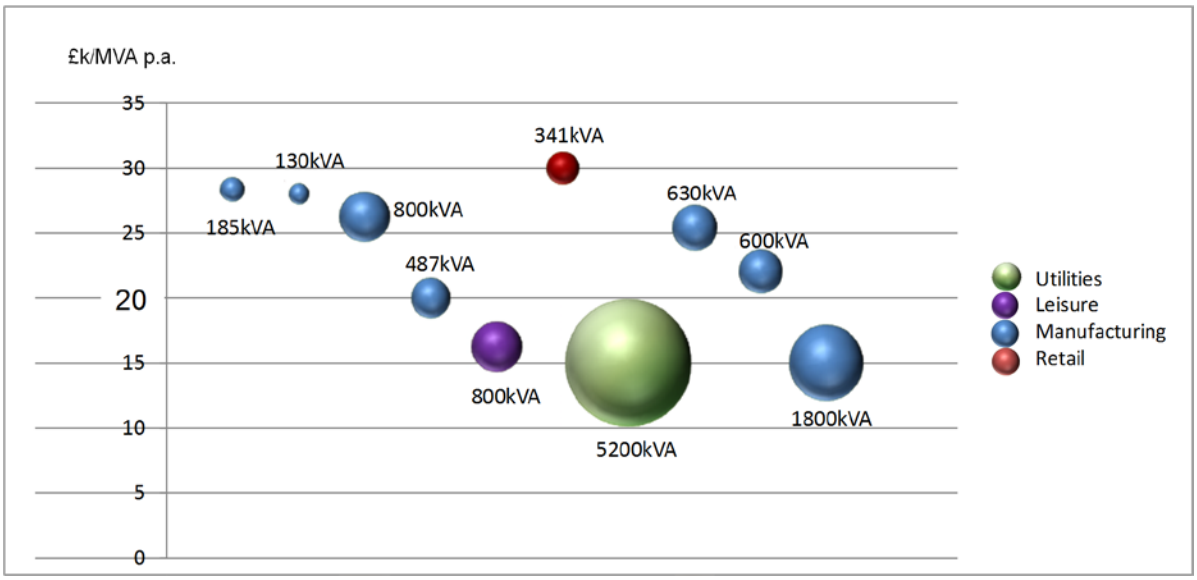
[4] Desktop review and analysis of information on value of lost load for RIIO-ED1 and associated work.

[5] Used current IIS incentives for CIs and CMLs to model value of 1MW of C_2C Managed Load per 8-hour interruption.

contract calculator was produced and made available to customers in order for them to observe the affect of introducing contract variables.

5. As customers became more aware of the affect of the contract variables, the flexible options became less important to them. Most customers that have agreed to participate in the Trial have agreed to the few or no contract variables in order to maximise their revenue.
6. The actual average price per MVA p.a. paid to 'existing' customers was £20,570 compared with our £20,000 mid price target. A summary of load size, price paid and market sector is shown below.

CUSTOMER SPREAD - LOAD SIZE V PRICE V SECTOR



Lesson 4: Managing the network

Background: C_2C uses software-based automation that carries out automatic switching restoring customers within three minutes. This switching is via remote control switches. The actuators that physically operate the switching device are retrofit and communication is by Global System for Mobile Communication (GSM).

Lesson Learned

1. Due to the nature of the remote control device it is not unknown for devices to fault. A fault on the remote control device at the normal open point of the ring needs to be classed as a high priority fault because this could affect the automation during a fault sequence and hence adversely affect customers.
2. In the event of a fault associated with the remote control device the normal open point (NOP) on the ring should be reassigned to a different RC device to enable the ring to be kept closed.
3. The long-term solution is to make the software more intelligent so it can change its strategy subject to remote control faults.

Lesson 5: Engineering Recommendation P2/6

Background: We have conducted a consultation to gather views on the ability of Engineering Recommendation P2/6 (ER P2/6) "Security of Supply" to recognize customer load management and demand side response (collectively termed DSR) and the requirement or otherwise for modification of ER P2/6 in the short term to explicitly include the effects of DSR. In December 2012 Electricity North West was granted derogation from P2/6 relating to the C_2C circuits for the duration of the Trial.

The consultation format included network simulations to develop scenarios to be used in workshops and consultation documents. Internal workshops were initially held with selected staff with varying levels of P2/6 knowledge. The staff were questioned and provided their views on scenarios. A consultation document was then developed as an output from the internal workshop and opened to third parties. External workshops involving other DNOs, IDNOs and NGET took place and attendees gave their view on various scenarios.

Lesson learned

1. Our work indicates that there is a general consensus among network operators that P2/6 does not preclude the use of n-1 DSR to maintain compliance. There is a difference of view regarding the requirement to change ER P2/6 in the short or long term to enable Demand Side Management to be used at an appropriate level. Our work indicates that there is support for an update to ETR130 to clarify the use of DSR and the management of system intact load levels in the short term. Subsequent to the consultation process we have issued a recommendation report. This report is currently undergoing revision due to further discussions with DNO's regarding the question of whether DSR should be accounted for in Group Demand or Network Capacity.

7 BUSINESS CASE UPDATE

We are not aware of any developments that have taken place since the issue of the Project Direction that affect the business case for the Project.

8 PROGRESS AGAINST BUDGET

The original Project Budget as defined in the Project Direction is shown in Appendix A.

Prior to the acceptance of the Project Direction we discussed with Ofgem the re-categorisation of expenditure as our understanding of delivery methods had changed during the development of the Project initiation documentation; for example, we proposed to change our delivery approach by using contractors for some activities rather than our own personnel. We accepted the Project Direction and agreed to inform Ofgem of the proposed changes within the Project Progress Report process. Appendix B details the proposed re-categorisation.

Ofgem has approved this request and agreed that moving forward we should report expenditure in relation to the re-based Project Budget.

Actual spend to date compared to re-based Project Budget is summarised in table 8.1 below. The report includes expenditure up to and including 30 November 2013. Detailed projected expenditure at Project activity level can be found at appendix C.

Table 8.1

£'000s Excluding Partner Funding Ofgem Cost Category	Spend to date			Total Project		
	Actual	Budget[1]	Variance	Forecast	Budget[1]	Variance
Summary						
Labour	982	1,122	140	1,663	1,755	92
Equipment	2,629	3,075	445	2,629	3,078	448
Contractors	2,229	2,816	588	2,851	3,012	161
IT	601	740	138	601	740	138
IPR Costs	0	0	0	0	0	0
Travel & Expenses	0	0	0	0	0	0
Payments to users	57	105	48	289	300	11
Contingency	235	588	354	420	947	526
Decommissioning	0	0	0	0	0	0
Other	230	310	80	354	445	91
Total Costs	**6,963**	**8,756**	**1,793**	**8,808**	**10,275**	**1,467**

Note 1: Re-based Project Budget as agreed by Ofgem on 24 January 2013

At the end of the last reporting period we reported a £1.7m variance to the original Project Budget, this was due to profile variances caused by the deferment of placing large value orders earlier in the Project.

The actual spend to date is £1.8m favourable to Project Budget and the estimated at completion costs is now £1.5m favourable to Project Budget.

The current position shows the most significant contribution to this outperformance to date is due to £0.6m of efficiencies regarding remote control installation (£0.3m of this due to scope reduction[6]), £0.1m IT efficiencies and £0.4m of efficiencies against contingency. There is also a £0.4m profiling variance associated with the Demand Response Survey and the analysis to be carried out by our academic Partners. Our estimated at completion cost currently reflects these efficiencies and known risks as at the end of the current reporting period. Should any unforeseen event occur, these efficiencies may be affected.

9 BANK ACCOUNT

The Project bank statement is shown in Appendix D. The statement contains all receipts and payments associated with the Project up to the end of November 2013.

[6] The Project Budget assumed the funding for the installation of 540 remote control units, in reality the Project was required to fund the installation of 489 units due to 51 units overlapping with, and being funded by our Quality of Supply investment programme.

10 INTELLECTUAL PROPERTY RIGHTS (IPR)

Electricity North West is following the default IPR arrangements. We have considered our IPR approach to current period Project deliverables and concluded the default IPR arrangements apply.

11 OTHER

There is no other information at this time that would be of use to Ofgem in understanding the progress of the Project and performance against the SDRC.

12 ACCURACY ASSURANCE STATEMENT

This document has been reviewed by a number of key business stakeholders. The Project team and select members of the C_2C Project Steering Group, including the lead member of the bid development team have reviewed the report to ensure its accuracy. The narrative has also been peer reviewed by the Electricity North West Future Networks Manager and the Electricity North West Networks Strategy and Technical Support Director.

The financial information has been produced by the C_2C Project Manager and the Project's finance representative who review all financial postings to the Project each month in order to ensure postings have been correctly allocated to the appropriate Project activity. The financial information has also been peer reviewed by the Electricity North West Distribution Finance Business Partner. Issue of the document has been approved by the Networks Strategy & Technical Support Director.

APPENDIX A – PROJECT DIRECTION PROJECT BUDGET

£000's Excluding Partner Funding Ofgem Cost Category	
Labour	**2,512**
Monitoring Equipment Installation - Labour	22
Business input into specs and testing & CIO System Design Approval	20
Connections – Clerical	65
Connections - Customer Relationship Management	241
Dissemination - ENWL & Customer engagement via email & training	28
Implementation of PowerOn Fusion	709
Maintenance & Support for PowerOn Fusion	187
Project Management - GE	351
Project Management - ENWL	790
Involvement in developing Future Network Planning/Operational Standard	15
Circuit Selection	32
Developing Future Network Planning/Operational Standard	53
Equipment	**3,078**
Publicity Materials - Informational Pamphlets & postage & packaging	18
Remote Control Installation - Plant	1,954
Monitoring Equipment Installation - Plant	112
Remote Control Installation - Materials	563
Commissioning SCADA link to Remote Control Devices	31
Delivery and configuration of GE IT hardware and software	399
Contractors	**2,254**
Demand Side Response Customer Survey	391
Project Management - ENWL	115
Remote Control Installation - Labour	844
Remote Control Installation at Customers' Premises	159
Contractors Travel & Publicity - Informing Affected Customers	42
Connections - Connections Design	303
Carbon Analysis	40
Data Analysis and Economic Modelling	185
Power System and Technical Modelling	175
IT	**740**
Data Capture and Cleanse	55
Database Licenses	100
Develop CRMS Reporting Capability	11
Develop CRMS/PowerOn (SOAP) Interface	87
Develop New Interface to PowerOn Fusion	87
Develop Real-time Data Update Functionality	55
Develop Visual Display Functionality for CRMS	73
Initial Data Load Functionality	55
System Integration & Testing	66
Testing and Development Workstation	10
Upload and Store Estimates (into historian)	85
Upload CRMS Diagram and Managed Loads	55
IPR Costs	**0**
Travel & Expenses	**0**
Payments to users	**300**
Demand Side Response	300
Contingency	**947**
Development and Preparation	44
Remote Control Installation	284
Publicity, Training and Dissemination	125
DSR and Interruptions	100
Project Management	28
Connections	102
Monitoring Equipment	77
Installation and configuration of IT and Implementation of PowerOn Fusion	109
Circuit selection and data upload	24
Analysis, Modelling and Development of Standards	41
System Integration & Testing	13
Decommissioning	
Other	**445**
Publicity and Dissemination	257
Accommodation	160
Unplanned interruptions during trial	27
	10,275

Source: Ofgem Schedule to Project Direct 19-12-11

APPENDIX B – RE-BASED PROJECT BUDGET (APPROVED 24 JANUARY 2013)

£'000s Excluding Partner Funding Ofgem Cost Category	Total Project Re-based Budget	Budget	Variance	Comments
Labour	**1,755**	**2,512**	**758**	
Monitoring Equipment Installation - Labour	22	22	0	
Business input into specs and testing & CIO System Design Approval	20	20	0	
Connections – Clerical	65	65	0	
Connections - Customer Relationship Management	241	241	0	
Dissemination - ENWL & Customer engagement via email & training	28	28	0	
Implementation of PowerOn Fusion	0	709	709	Moved to Contractor from Labour
Maintenance & Support for PowerOn Fusion	187	187	0	
Project Management - GE	0	351	351	Moved to Contractor from Labour
Project Management - ENWL	790	790	0	
Involvement in developing Future Network Planning/Operational Standard	15	15	0	
Circuit Selection	0	32	32	Contractors used instead of internal labour
Developing Future Network Planning/Operational Standard	0	53	53	Contractors used instead of internal labour
Connections - Connections Design	303	0	(303)	Internal labour to be used instead of contractors
Remote Control Installation	84	0	(84)	10% of Remote Control Installation by internal labour
Equipment	**3,078**	**3,078**	**0**	
Publicity Materials - Informational Pamphlets & postage & packaging	18	18	0	
Remote Control Installation - Plant	1,954	1,954	0	
Monitoring Equipment Installation - Plant	112	112	0	
Remote Control Installation - Materials	563	563	0	
Commissioning SCADA link to Remote Control Devices	31	31	0	
Delivery and configuration of GE IT hardware and software	399	399	0	
Contractors	**3,012**	**2,254**	**(758)**	
Demand Side Response Customer Survey	391	391	0	
Project Management - ENWL	115	115	0	
Remote Control Installation - Labour	760	844	84	10% of original budget moved to Labour
Remote Control Installation at Customers' Premises	159	159	0	
Contractors Travel & Publicity - Informing Affected Customers	42	42	0	
Connections - Connections Design	0	303	303	
Carbon Analysis	40	40	0	
Data Analysis and Economic Modelling	185	185	0	
Power System and Technical Modelling	175	175	0	
Project Management - GE	351	0	(351)	Moved to Contractor from Labour
Circuit Selection	32	0	(32)	Contractors used instead of internal labour
Developing Future Network Planning/Operational Standard	53	0	(53)	Contractors used instead of internal labour
Implementation of PowerOn Fusion	709	0	(709)	Moved to Contractor from Labour
IT	**740**	**740**	**0**	
Data Capture and Cleanse	55	55	0	
Database Licenses	100	100	0	
Develop CRMS Reporting Capability	11	11	0	
Develop CRMS/PowerOn (SOAP) Interface	87	87	0	
Develop New Interface to PowerOn Fusion	87	87	0	
Develop Real-time Data Update Functionality	55	55	0	
Develop Visual Display Functionality for CRMS	73	73	0	
Initial Data Load Functionality	55	55	0	
System Integration & Testing	66	66	0	
Testing and Development Workstation	10	10	0	
Upload and Store Estimates (into historian)	85	85	0	
Upload CRMS Diagram and Managed Loads	55	55	0	
IPR Costs	**0**	**0**	**0**	
Travel & Expenses	**0**	**0**	**0**	
Payments to users	**300**	**300**	**0**	
Demand Side Response	300	300	0	
Contingency	**947**	**947**	**0**	
Development and Preparation	44	44	0	
Remote Control Installation	284	284	0	
Publicity, Training and Dissemination	125	125	0	
DSR and Interruptions	100	100	0	
Project Management	28	28	0	
Connections	102	102	0	
Monitoring Equipment	77	77	0	
Installation and configuration of IT and Implementation of PowerOn Fusion	109	109	0	
Circuit selection and data upload	24	24	0	
Analysis, Modelling and Development of Standards	41	41	0	
System Integration & Testing	13	13	0	
Decommissioning	0	0	0	
Other	**445**	**445**	**0**	
Publicity and Dissemination	257	257	0	
Accommodation	160	160	0	
Unplanned interruptions during trial	27	27	0	
	10,275	**10,275**	**0**	

Source: Ofgem Schedule to Project Direct 19-12-11

APPENDIX C – DETAILED PROJECTED PROJECT EXPENDITURE

£'000s Excluding Partner Funding Ofgem Cost Category	Total Project Forecast	Re-based Budget	Variance	Comments
Labour	**1,663**	**1,755**	**92**	**Estimated at completion costs £92k favourable to plan (Connections efficiencies)**
Monitoring Equipment Installation - Labour	44	22	(22)	Higher than expected install unit rate & removal of equipment at end of Trial not budgeted.
Business input into specs and testing & CIO System Design Approval	25	20	(5)	Activity completed. Estimated at Completion cost £5k adverse to plan.
Connections – Clerical	63	65	2	
Connections - Customer Relationship Management	246	241	(5)	
Dissemination - ENWL & Customer engagement via email & training	28	28	(0)	
Maintenance & Support for PowerOn Fusion	147	187	40	Anticipated efficiency. Estimated at completion £40k favourable to plan.
Project Management - ENWL (Labour)	811	790	(21)	
Involvement in developing Future Network Planning/Operational Standard	15	15	(1)	
Connections - Connections Design (Labour)	186	303	117	Lower than anticipated volumes. Estimated at completion cost £117k favourable to plan.
Remote Control Installation - ENWL Labour	97	84	(13)	Resolution of post go live bug fixes. Estimated at Completion £13k adverse to plan. Offset by outperformance of contractor costs.
Equipment	**2,629**	**3,078**	**448**	**Estimated at completion costs £448k favourable to plan (Remote control efficiencies)**
Publicity Materials - Informational Pamphlets & postage & packaging	17	18	1	
Remote Control Installation - Plant	1,816	1,954	138	Efficiency, estimated at completion £138k favourable to plan.
Monitoring Equipment Installation - Plant	179	112	(68)	Actual unit cost of monitoring equipment exceeded plan.
Remote Control Installation - Materials	218	563	345	Efficiency, estimated at completion £345 favourable to plan.
Commissioning SCADA link to Remote Control Devices	0	31	31	Efficiency, estimated at completion £31 favourable to plan.
Delivery and configuration of GE IT hardware and software	399	399	0	
Contractors	**2,851**	**3,012**	**161**	**Estimated at completion costs £161k favourable to plan (Remote control efficiencies)**
Demand Side Response Customer Survey	361	391	29	Profile variance to plan, estimated at completion £29k favourable to plan.
Project Management - ENWL (Contractors)	74	115	40	Profile variance to plan, estimated at completion £40k favourable to plan.
Remote Control Installation - Labour	654	760	106	Efficiency. Estimated at completion £106k favourable to plan.
Remote Control Installation at Customers' Premises	173	159	(14)	Profile variance to plan, estimated at completion in line with plan.
Contractors Travel & Publicity - Informing Affected Customers	37	42	5	Awaiting outstanding £37k invoice, estimated at completion £5k favourable to plan.
Carbon Analysis	40	40	0	
Data Analysis and Economic Modelling	185	185	(0)	
Power System and Technical Modelling	175	175	(0)	
Project Management - GE	351	351	0	
Circuit Selection	38	32	(7)	Actual spend £7k adverse to plan.
Developing Future Network Planning/Operational Standard (Contractors)	47	53	6	Profile variance to plan, estimated at completion £6k favourable to plan.
Implementation of PowerOn Fusion	714	709	(5)	
IT	**601**	**740**	**138**	**Estimated at completion costs £138k favourable to plan (IT licences efficiencies)**
Data Capture and Cleanse	54	55	1	
Database Licenses	10	100	91	Efficiency, one licence required at £10k. Estimated at completion cost £91k favourable to plan.
Develop CRMS Reporting Capability	10	11	1	Activity completed. In line with plan.
Develop CRMS/PowerOn (SOAP) Interface	81	87	6	Activity completed. £6k favourable to plan.
Develop New Interface to PowerOn Fusion	92	87	(4)	Activity completed. £4k adverse to plan.
Develop Real-time Data Update Functionality	53	55	2	
Develop Visual Display Functionality for CRMS	78	73	(5)	Activity completed. £5k adverse to plan.
Initial Data Load Functionality	88	55	(33)	Activity completed. £33k adverse to plan.
System Integration & Testing	73	66	(7)	Activity completed. £7k adverse to plan.
Testing and Development Workstation	4	10	6	Activity completed. £6k adverse to plan.
Upload and Store Estimates (into historian)	45	85	40	Activity completed. £40k favourable to plan.
Upload CRMS Diagram and Managed Loads	15	55	40	Activity completed. £40k favourable to plan.
IPR Costs	**0**	**0**	**0**	
Travel & Expenses	**0**	**0**	**0**	
Payments to users	**289**	**300**	**11**	**Estimated at completion costs in line with plan**
Demand Side Response	289	300	11	
Contingency	**420**	**947**	**526**	**Estimated at completion costs £526k favourable to plan (RC & connections efficiencies)**
Development and Preparation	14	44	29	Activity completed. £14k of contingency required.
Remote Control Installation	0	284	284	Activity completed. No contingency required.
Publicity, Training and Dissemination	125	125	(0)	Estimate full use of contingency required.
DSR and Interruptions	4	101	97	
Project Management	27	28	0	Estimate full use of contingency required.
Connections	0	102	102	Current estimate contingency will not be required.
Monitoring Equipment	81	77	(4)	
Installation and configuration of IT and Implementation of PowerOn Fusion	111	109	(1)	
Circuit selection and data upload	0	24	24	Activity completed. No contingency required.
Analysis, Modelling and Development of Standards	42	41	(1)	
System Integration & Testing	16	13	(4)	Activity completed. £4k adverse to plan.
Decommissioning	0	0	0	
Other	**354**	**445**	**91**	**Estimated at completion costs £91k favourable to plan (Accommodation efficiencies)**
Publicity and Dissemination	267	257	(10)	
Accommodation	61	160	100	Estimated at completion £100k favourable to plan.
Unplanned interruptions during trial	27	27	0	
	8,808	**10,275**	**1,468**	

Source: Ofgem Schedule to Project Direct 19-12-11

APPENDIX D – PROJECT BANK ACCOUNT

The bank statement below details all transactions relevant to the Project up to 06 December 2013. This includes all receipts and payments associated with the Project up to the November 2013 month end reporting period.

Lloyds TSB
Statements and Balances

Yesterday's Statement **C082421**

[redacted]
ELECTRICITY NWL NO.11 LCNF (GBP)

Date	Type	Narrative	Value Date	Payments	Receipts	Balance
04JAN12		Opening Ledger Balance				0.00 Cr
24APR12	F/FLOW	SCOTTISH HYDRO-ELE F/FLOW			19,166.67	19,166.67 Cr
25APR12	F/FLOW	WESTPOWSWEST F/FLOW			117,500.00	136,666.67 Cr
27APR12	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00268			1,319,416.63	1,456,083.30 Cr
27APR12	BGC	LONDON POWER NETWO BGC LOW CARB NETWORKS			59,166.63	1,515,249.93 Cr
27APR12	BGC	SOUTH EASTERN POWE BGC LOW CARB NETWORKS			58,333.37	1,573,583.30 Cr
27APR12	BGC	EASTERN POWER NETW BGC LOW CARB NETWORKS			45,833.37	1,619,416.67 Cr
27APR12	BGC	NORTHERN ELECTRIC BGC LCNF			59,166.63	1,678,583.30 Cr
27APR12	BGC	NORTHERN ELECTRIC BGC LCNF			40,833.37	1,719,416.67 Cr
27APR12	BGC	R B S-SP DISTRIBUT BGC LOW CARBON NETWORK			27,500.00	1,746,916.67 Cr
27APR12	BGC	R B S-SP MANWEB BGC LOW CARBON NETWORK			39,166.63	1,786,083.30 Cr
08MAY12	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00277		372,174.17		1,413,909.13 Cr
24MAY12	F/FLOW	SCOTTISH HYDRO-ELE F/FLOW			19,166.67	1,433,075.80 Cr
25MAY12	F/FLOW	WESTPOWSWEST F/FLOW			117,500.00	1,550,575.80 Cr
28MAY12	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00285			292,416.67	1,842,992.47 Cr
28MAY12	BGC	LONDON POWER NETWO BGC LOW CARB NETWORKS			59,166.67	1,902,159.14 Cr
28MAY12	BGC	SOUTH EASTERN POWE BGC LOW CARB NETWORKS			58,333.33	1,960,492.47 Cr
28MAY12	BGC	EASTERN POWER NETW BGC LOW CARB NETWORKS			45,833.33	2,006,325.80 Cr
28MAY12	BGC	NORTHERN ELECTRIC BGC LCNF			59,166.67	2,065,492.47 Cr
28MAY12	BGC	NORTHERN ELECTRIC BGC LCNF			40,833.33	2,106,325.80 Cr
30MAY12	F/FLOW	SP MANWEB PLC F/FLOW			39,166.67	2,145,492.47 Cr
30MAY12	F/FLOW	SP DISTRIBUTION LT F/FLOW			27,500.00	2,172,992.47 Cr
11JUN12	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00287		68,669.60		2,104,322.87 Cr
22JUN12	F/FLOW	SCOTTISH HYDRO-ELE F/FLOW			19,166.67	2,123,489.54 Cr
25JUN12	F/FLOW	WESTPOWSWEST F/FLOW			117,500.00	2,240,989.54 Cr
28JUN12	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00291			292,416.67	2,533,406.21 Cr
28JUN12	F/FLOW	SP DISTRIBUTION LT F/FLOW			27,500.00	2,560,906.21 Cr
28JUN12	F/FLOW	SP MANWEB PLC F/FLOW			39,166.67	2,600,072.88 Cr
28JUN12	BGC	LONDON POWER NETWO BGC LOW CARB NETWORKS			59,166.67	2,659,239.55 Cr
28JUN12	BGC	SOUTH EASTERN POWE BGC LOW CARB NETWORKS			58,333.33	2,717,572.88 Cr
28JUN12	BGC	EASTERN POWER NETW BGC LOW CARB NETWORKS			45,833.33	2,763,406.21 Cr
28JUN12	BGC	NORTHERN ELECTRIC BGC LCNF			59,166.67	2,822,572.88 Cr
28JUN12	BGC	NORTHERN ELECTRIC BGC LCNF			40,833.33	2,863,406.21 Cr
28JUN12	CHGS	ACCOUNT CHARGE		4.20		2,863,402.01 Cr
09JUL12	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00294		455,501.23		2,407,900.78 Cr
09JUL12		Value of Credits (30)			3,304,249.98	
09JUL12		Value of Debits (4)		896,349.20		
09JUL12		Closing Ledger Balance				2,407,900.78 Cr
09JUL12		Closing Cleared Balance				2,407,900.78 Cr

*** End of Report ***

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ELECTRICITY NWL NO.11 LCNF (C2C) (GBP)

Date	Type	Narrative	Value Date	Payments	Receipts	Balance
10JUL12		Opening Ledger Balance				2,407,900.78 Cr
24JUL12	F/FLOW	SCOTTISH HYDRO-ELE F/FLOW			19,166.67	2,427,067.45 Cr
25JUL12	F/FLOW	WESTPOWSWEST F/FLOW			117,500.00	2,544,567.45 Cr
27JUL12	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00297			292,416.67	2,836,984.12 Cr
27JUL12	BGC	LONDON POWER NETWO BGC LOW CARB NETWORKS			59,166.67	2,896,150.79 Cr
27JUL12	BGC	SOUTH EASTERN POWE BGC LOW CARB NETWORKS			58,333.33	2,954,484.12 Cr
27JUL12	BGC	EASTERN POWER NETW BGC LOW CARB NETWORKS			45,833.33	3,000,317.45 Cr
27JUL12	BGC	NORTHERN ELECTRIC BGC LCNF			59,166.67	3,059,484.12 Cr
27JUL12	BGC	NORTHERN ELECTRIC BGC LCNF			40,833.33	3,100,317.45 Cr
27JUL12	BGC	R B S-SP DISTRIBUT BGC LOW CARBON NETWORK			27,500.00	3,127,817.45 Cr
27JUL12	BGC	R B S-SP MANWEB BGC LOW CARBON NETWORK			39,166.67	3,166,984.12 Cr
08AUG12	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00301		518,517.25		2,648,466.87 Cr
24AUG12	CR	INTEREST ADJUSTMENT GROSS CREDIT INTEREST			1,051.61	2,649,518.48 Cr
24AUG12	F/FLOW	SCOTTISH HYDRO-ELE F/FLOW			19,166.67	2,668,685.15 Cr
28AUG12	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00309			292,416.67	2,961,101.82 Cr
28AUG12	F/FLOW	WESTPOWSWEST F/FLOW			117,500.00	3,078,601.82 Cr
28AUG12	F/FLOW	SP DISTRIBUTION LT F/FLOW			27,500.00	3,106,101.82 Cr
28AUG12	F/FLOW	SP MANWEB PLC F/FLOW			39,166.67	3,145,268.49 Cr
28AUG12	BGC	LONDON POWER NETWO BGC LOW CARB NETWORKS			59,166.67	3,204,435.16 Cr
28AUG12	BGC	SOUTH EASTERN POWE BGC LOW CARB NETWORKS			58,333.33	3,262,768.49 Cr
28AUG12	BGC	EASTERN POWER NETW BGC LOW CARB NETWORKS			45,833.33	3,308,601.82 Cr
28AUG12	BGC	NORTHERN ELECTRIC BGC LCNF			59,166.67	3,367,768.49 Cr
28AUG12	BGC	NORTHERN ELECTRIC BGC LCNF			40,833.33	3,408,601.82 Cr
11SEP12	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00317		278,744.88		3,129,856.94 Cr
19SEP12	INT	GROSS CREDIT INTEREST			3,409.65	3,133,266.59 Cr
24SEP12	F/FLOW	SCOTTISH HYDRO-ELE F/FLOW			19,166.67	3,152,433.26 Cr
25SEP12	F/FLOW	WESTPOWSWEST F/FLOW			117,500.00	3,269,933.26 Cr
26SEP12	CHGS	ACCOUNT CHARGE		3.11		3,269,930.15 Cr
28SEP12	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00327			292,416.67	3,562,346.82 Cr
28SEP12	BGC	LONDON POWER NETWO BGC LOW CARB NETWORKS			59,166.67	3,621,513.49 Cr
28SEP12	BGC	SOUTH EASTERN POWE BGC LOW CARB NETWORKS			58,333.33	3,679,846.82 Cr
28SEP12	BGC	EASTERN POWER NETW BGC LOW CARB NETWORKS			45,833.33	3,725,680.15 Cr
28SEP12	BGC	NORTHERN ELECTRIC BGC LCNF			59,166.67	3,784,846.82 Cr
28SEP12	BGC	NORTHERN ELECTRIC BGC LCNF			40,833.33	3,825,680.15 Cr
28SEP12	BGC	R B S-SP DISTRIBUT BGC LOW CARBON NETWORK			27,500.00	3,853,180.15 Cr
28SEP12	BGC	R B S-SP MANWEB BGC LOW CARBON NETWORK			39,166.67	3,892,346.82 Cr
10OCT12	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00331		600,425.90		3,291,920.92 Cr
24OCT12	F/FLOW	SCOTTISH HYDRO-ELE F/FLOW			19,166.67	3,311,087.59 Cr
25OCT12	F/FLOW	WESTPOWSWEST F/FLOW			117,500.00	3,428,587.59 Cr
25OCT12	BGC	R B S-SP DISTRIBUT BGC LOW CARBON NETWORK			27,500.00	3,456,087.59 Cr
25OCT12	BGC	R B S-SP MANWEB BGC LOW CARBON NETWORK			39,166.67	3,495,254.26 Cr
26OCT12	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00337			292,416.67	3,787,670.93 Cr
26OCT12	BGC	LONDON POWER NETWO BGC LOW CARB NETWORKS			59,166.67	3,846,837.60 Cr
26OCT12	BGC	SOUTH EASTERN POWE BGC LOW CARB NETWORKS			58,333.33	3,905,170.93 Cr
26OCT12	BGC	EASTERN POWER NETW BGC LOW CARB NETWORKS			45,833.33	3,951,004.26 Cr
26OCT12	BGC	NORTHERN ELECTRIC BGC LCNF			59,166.67	4,010,170.93 Cr

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ELECTRICITY NWL NO.11 LCNF (C2C) (GBP)

Date	Type	Narrative	Value Date	Payments	Receipts	Balance
26OCT12	BGC	NORTHERN ELECTRIC BGC LCNF			40,833.33	4,051,004.26 Cr
13NOV12	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00343		274,863.81		3,776,140.45 Cr
23NOV12	F/FLOW	SCOTTISH HYDRO-ELE F/FLOW			19,166.67	3,795,307.12 Cr
26NOV12	F/FLOW	WESTPOWSWEST F/FLOW			117,500.00	3,912,807.12 Cr
28NOV12	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00356			292,416.67	4,205,223.79 Cr
28NOV12	BGC	LONDON POWER NETWO BGC LOW CARB NETWORKS			59,166.67	4,264,390.46 Cr
28NOV12	BGC	SOUTH EASTERN POWE BGC LOW CARB NETWORKS			58,333.33	4,322,723.79 Cr
28NOV12	BGC	EASTERN POWER NETW BGC LOW CARB NETWORKS			45,833.33	4,368,557.12 Cr
28NOV12	BGC	NORTHERN ELECTRIC BGC LCNF			59,166.67	4,427,723.79 Cr
28NOV12	BGC	NORTHERN ELECTRIC BGC LCNF			40,833.33	4,468,557.12 Cr
28NOV12	BGC	R B S-SP DISTRIBUT BGC LOW CARBON NETWORK			27,500.00	4,496,057.12 Cr
28NOV12	BGC	R B S-SP MANWEB BGC LOW CARBON NETWORK			39,166.67	4,535,223.79 Cr
07DEC12	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00361		869,182.89		3,666,040.90 Cr
19DEC12	INT	GROSS CREDIT INTEREST			4,635.39	3,670,676.29 Cr
21DEC12	F/FLOW	SCOTTISH HYDRO-ELE F/FLOW			19,166.67	3,689,842.96 Cr
27DEC12	F/FLOW	WESTPOWSWEST F/FLOW			117,500.00	3,807,342.96 Cr
27DEC12	CHGS	ACCOUNT CHARGE		3.20		3,807,339.76 Cr
28DEC12	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00371			292,416.67	4,099,756.43 Cr
28DEC12	F/FLOW	SP MANWEB PLC F/FLOW			39,166.67	4,138,923.10 Cr
28DEC12	F/FLOW	SP DISTRIBUTION LT F/FLOW			27,500.00	4,166,423.10 Cr
28DEC12	BGC	LONDON POWER NETWO BGC LOW CARB NETWORKS			59,166.67	4,225,589.77 Cr
28DEC12	BGC	SOUTH EASTERN POWE BGC LOW CARB NETWORKS			58,333.33	4,283,923.10 Cr
28DEC12	BGC	EASTERN POWER NETW BGC LOW CARB NETWORKS			45,833.33	4,329,756.43 Cr
28DEC12	BGC	NORTHERN ELECTRIC BGC LCNF			59,166.67	4,388,923.10 Cr
28DEC12	BGC	NORTHERN ELECTRIC BGC LCNF			40,833.33	4,429,756.43 Cr
16JAN13	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00382		829,445.57		3,600,310.86 Cr
24JAN13	F/FLOW	SCOTTISH HYDRO-ELE F/FLOW			19,166.67	3,619,477.53 Cr
25JAN13	F/FLOW	WESTPOWSWEST F/FLOW			117,500.00	3,736,977.53 Cr
28JAN13	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00387			292,416.67	4,029,394.20 Cr
28JAN13	F/FLOW	SP DISTRIBUTION LT F/FLOW			27,500.00	4,056,894.20 Cr
28JAN13	F/FLOW	SP MANWEB PLC F/FLOW			39,166.67	4,096,060.87 Cr
28JAN13	BGC	LONDON POWER NETWO BGC LOW CARB NETWORKS			59,166.67	4,155,227.54 Cr
28JAN13	BGC	SOUTH EASTERN POWE BGC LOW CARB NETWORKS			58,333.33	4,213,560.87 Cr
28JAN13	BGC	EASTERN POWER NETW BGC LOW CARB NETWORKS			45,833.33	4,259,394.20 Cr
28JAN13	BGC	NORTHERN ELECTRIC BGC LCNF			59,166.67	4,318,560.87 Cr
28JAN13	BGC	NORTHERN ELECTRIC BGC LCNF			40,833.33	4,359,394.20 Cr
07FEB13	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00397		593,252.91		3,766,141.29 Cr
22FEB13	F/FLOW	SCOTTISH HYDRO-ELE F/FLOW			19,166.67	3,785,307.96 Cr
25FEB13	F/FLOW	WESTPOWSWEST F/FLOW			117,500.00	3,902,807.96 Cr
28FEB13	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00406			292,416.67	4,195,224.63 Cr
28FEB13	BGC	LONDON POWER NETWO BGC LOW CARB NETWORKS			59,166.67	4,254,391.30 Cr
28FEB13	BGC	SOUTH EASTERN POWE BGC LOW CARB NETWORKS			58,333.33	4,312,724.63 Cr
28FEB13	BGC	EASTERN POWER NETW BGC LOW CARB NETWORKS			45,833.33	4,358,557.96 Cr
28FEB13	BGC	NORTHERN ELECTRIC BGC LCNF			59,166.67	4,417,724.63 Cr
28FEB13	BGC	NORTHERN ELECTRIC BGC LCNF			40,833.33	4,458,557.96 Cr
28FEB13	BGC	R B S-SP DISTRIBUT BGC LOW CARBON NETWORK			27,500.00	4,486,057.96 Cr
28FEB13	BGC	R B S-SP MANWEB BGC			39,166.67	4,525,224.63 Cr

[redacted]

ELECTRICITY NWL NO.11 LCNF (C2C) (GBP)

Date	Type	Narrative	Value Date	Payments	Receipts	Balance
08MAR13		Opening Ledger Balance				4,525,224.63 Cr
08MAR13	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00408		512,079.14		4,013,145.49 Cr
20MAR13	INT	GROSS CREDIT INTEREST			4,951.49	4,018,096.98 Cr
22MAR13	F/FLOW	SCOTTISH HYDRO-ELE F/FLOW			19,166.67	4,037,263.65 Cr
25MAR13	F/FLOW	WESTPOWSWEST F/FLOW			117,500.00	4,154,763.65 Cr
26MAR13	CHGS	ACCOUNT CHARGE		3.21		4,154,760.44 Cr
28MAR13	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00416			292,416.67	4,447,177.11 Cr
28MAR13	BGC	LONDON POWER NETWO BGC LOW CARB NETWORKS			59,166.67	4,506,343.78 Cr
28MAR13	BGC	SOUTH EASTERN POWE BGC LOW CARB NETWORKS			58,333.33	4,564,677.11 Cr
28MAR13	BGC	EASTERN POWER NETW BGC LOW CARB NETWORKS			45,833.33	4,610,510.44 Cr
28MAR13	BGC	NORTHERN ELECTRIC BGC LCNF			59,166.67	4,669,677.11 Cr
28MAR13	BGC	NORTHERN ELECTRIC BGC LCNF			40,833.33	4,710,510.44 Cr
28MAR13	BGC	R B S-SP DISTRIBUT BGC LOW CARBON NETWORK			27,500.00	4,738,010.44 Cr
28MAR13	BGC	R B S-SP MANWEB BGC LOW CARBON NETWORK			39,166.67	4,777,177.11 Cr
10APR13	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00425		513,672.02		4,263,505.09 Cr
16MAY13	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00445		249,902.11		4,013,602.98 Cr
11JUN13	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00461		202,350.07		3,811,252.91 Cr
19JUN13	INT	GROSS CREDIT INTEREST			5,324.29	3,816,577.20 Cr
27JUN13	CHGS	ACCOUNT CHARGE		1.87		3,816,575.33 Cr
08JUL13	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00476		134,066.60		3,682,508.73 Cr
12AUG13	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00494		263,450.99		3,419,057.74 Cr
19SEP13	INT	GROSS CREDIT INTEREST			4,589.85	3,423,647.59 Cr
26SEP13	CHGS	ACCOUNT CHARGE		1.07		3,423,646.52 Cr
30SEP13	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00505			49,583.62	3,473,230.14 Cr
10OCT13	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00514		60,716.41		3,412,513.73 Cr
13NOV13	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00531		110,355.61		3,302,158.12 Cr
06DEC13	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00547		105,095.25		3,197,062.87 Cr
06DEC13		Value of Credits (14)			823,532.59	
06DEC13		Value of Debits (12)		2,151,694.35		
06DEC13		Closing Ledger Balance				3,197,062.87 Cr
06DEC13		Closing Cleared Balance				3,197,062.87 Cr

*** End of Report ***

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