

A large green L-shaped graphic element on the left side of the page.

# Project Progress Report (PPR)

Customer Load Active System Services  
(CLASS)



This report was submitted to Ofgem in December 2013

Produced by: Herb Castillo  
Date: 19 December 2013

## CONTENTS

1	EXECUTIVE SUMMARY.....	5
2	PROJECT MANAGER'S REPORT .....	8
3	CONSISTENCY WITH FULL SUBMISSION .....	13
4	RISK MANAGEMENT .....	13
5	SUCCESSFUL DELIVERY REWARD CRITERIA (SDRC).....	14
6	LEARNING OUTCOMES .....	15
7	BUSINESS CASE UPDATE.....	17
8	PROGRESS AGAINST BUDGET .....	17
9	BANK ACCOUNT .....	18
10	INTELLECTUAL PROPERTY RIGHTS.....	18
11	ACCURACY ASSURANCE STATEMENT .....	18
	APPENDIX B: SUMMARY OF PROJECT SDRC.....	23
	APPENDIX C: PROJECT DIRECTION BUDGET .....	25
	APPENDIX D: DETAILED PROJECT EXPENDITURE .....	26
	APPENDIX E: PROJECT BANK ACCOUNT .....	27

## VERSION HISTORY

Version	Date	Author	Status	Comments
1.0	19 December 2013	Herb Castillo	1 <sup>st</sup> issue	

## APPROVAL

Name	Role	Signature & date
Mike Kay	Networks Strategy and Technical Support Director	
Steve Cox	Future Networks Manager	
Lynne Fulton	Distribution Finance Business Partner	

## GLOSSARY OF TERMS

Abbreviation	Term
ASC	Autonomous Substation Controller
CLASS	Customer Load Activity System Services
DNO	Distribution Network Operator
ICCP	Inter-Control Centre Communications Protocol
NETSO	National Electricity Transmission System Operator
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

## 1 EXECUTIVE SUMMARY

### 1.1 The CLASS Project

This is the second six-monthly Project Progress Report (PPR) for the Customer Load Active System Services (CLASS) Project. It covers the period June to November 2013.

Funded via Ofgem's Low Carbon Networks Second Tier funding mechanism, CLASS is being undertaken by Electricity North West in partnership with key Technology and Academic Partners. Formal notification of selection for funding was received from Ofgem on 21 December 2012. The Project is due for completion by 30 September 2015.

The project is seeking to demonstrate how the natural relationship between demand and voltage can be exploited to cost-effectively accommodate increasing energy demand, including Low Carbon Technologies (LCTs), on electricity networks. As this approach could maximise the use of existing assets and minimise the need for capital investment, CLASS has the potential to realise significant cost-savings to customers.

There are three key elements to CLASS:

- **Demand reduction at time of system peak:** The potential increase in electricity demand by 40% to 60% by 2050, will put strains on existing network capacity. The relationship between voltage and demand can be exploited to alleviate this strain.

*CLASS will investigate the application of voltage reduction to reduce demand at a Primary substation at times of system peak. The potential that this provides for deferral of network reinforcement, and any impacts on customers, will be assessed.*

- **Frequency Reserve and Response:** The increasing proportion of intermittent renewable energy sources in the UK generation mix will increase the need for system balancing. The costs of conventional balancing services, eg spinning reserves, are significant. A fast acting demand management facility to aid system balancing would therefore be beneficial.

*CLASS will investigate the benefits of switching out a transformer at a primary substation, to rapidly reduce demand when system frequency falls below a threshold. The aim is to demonstrate that a very fast demand response (ie <0.5 seconds) can be provided to meet National Electricity Transmission System Operator (NETSO) criteria.*

*CLASS will also investigate the provision of a fast frequency response to the NETSO by reducing voltage at a group of Primary substations.*

- **Voltage Control:** A key challenge for network operators is managing the unacceptably high voltages that can occur on distribution and transmission networks during periods when high renewable generation output coincides with low demand.

*CLASS will investigate the benefits that operating primary transformers in a staggered tap configuration provides by absorbing reactive power on the network.*

## 1.2 Progress to date

The key project highlights during the reporting period are outlined below.

**All Successful Delivery Reward Criteria (SDRCs) due in the reporting period have been achieved, and those due in the next period are on track.**

All nine SDRCs due in the reporting period were successfully delivered. These are fully described in section 5 of this report.

The SDRCs delivered in this period that are deemed to be the most significant, are shown in Table 1.1 below.

**Table 1-1: Most significant SDRCs delivered in this reporting period**

SDRC (Evidence)	Planned date	Completion date
Host first CLASS Webinar by June 2013	Jun-13	Jun-13
Send for approval the Customer Engagement Plan and Data Privacy Statement to Ofgem by July 2013	Jul-13	Jul-13
Publish the site selection report including the methodology by August 2013	Aug-13	Aug-13
CLASS website and CLASS website and social media forums are live by September 2013	Sep-13	Sep-13
Publish on CLASS website first Video Podcast by September 2013	Sep-13	Sep-13

During the next reporting period the CLASS Project will focus on preparations for Trial 'Go-Live'. Whilst we are optimistic about achieving the agreed milestones, there is a substantial amount of work to complete and the next period is one of the most critical for overall delivery. We are working closely with our Partners to minimise the risks associated with this key stage of the Project.

The Project actual costs to date are £1.8m, and the estimated at completion costs is now £7.8m, which is £0.3m favourable to Project Budget (including contingency).

### **All Condition Precedents in the Project Direction have been met**

The Project Direction received from Ofgem on 21 December 2012, outlined two related Condition Precedents for CLASS. These conditions were prerequisites for (a) withdrawal of funds from the Project Bank Account for any purpose; and (b) withdrawal of funds from the Project Bank Account for customer engagement activities or the trials.

To meet both Condition Precedents, Electricity North West was required to sign contracts with all Project Partners.

Both Condition Precedents have been met, as Electricity North West has now signed contracts with all CLASS Project Partners.

## **Good progress is being made with the Technology Build, and the design of the CLASS trials and customer surveys**

As per the plan, the most pressing activity that has been ongoing in the reporting period is the *Technology Build* phase of the project. Notably, the sites for the Voltage Controllers and monitoring equipment were identified in June 2013. Installation of network equipment, and associated ICT hardware, software and communications infrastructure subsequently commenced and is progressing to plan.

Concurrent with the Technology Build, good progress is also being made on the design and planning of the CLASS trials and the associated customer surveys. To ensure that both activities deliver their expected objectives, they are being designed through a consultative process. Specifically, the trials methodology is being developed in collaboration with project partners. Similarly, a series of workshops are being held with a cross-section of customers, to integrate their input into the design of the customer survey instruments.

### **1.3 Risks**

There are currently no uncontrolled risks that could impede the achievement of any of the SDRCs outlined in the Project Direction, or which could cause the Project to deviate from the Full Submission.

We monitor risks on a continuous basis, including the potential risks that were documented in the Full Submission. The status of these is described at Appendix A.

### **1.4 Learning and dissemination**

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

- *Lesson 1* – Where Microtapp tap changer relays have not been installed, Argus 8 relays can be used to enable the Autonomous Substation Controllers (ASCs) to function.
- *Lesson 2* - Webinars are very useful tools for disseminating information.
- *Lesson 3* – Using a panel of customers to assist with the design of engagement and survey material is proving very beneficial to the project.

The CLASS project team has been utilising a range of tools to disseminate and share knowledge about the project. In addition to hosting a successful webinar in June 2013, a dedicated project website has also been established and can be found at: [www.enwl.co.uk/class](http://www.enwl.co.uk/class).

Furthermore, during the reporting period, the first CLASS newsletter was circulated, a podcast was uploaded to the website, and information about CLASS was shared through various social media outlets.

Members of the CLASS team also participated in a number of knowledge sharing events, as shown in Table 1.2 below.

**Table 1-2: Participation in knowledge sharing events during the reporting period**

Event	Contribution	Date
SP Energy Networks Flexible Network Dissemination Event	Participated	October 2013
SMI's Distribution Automation Europe Conference	Presented	October 2013
Energy Business Opportunities Conference	Presented	April 2013
WPD FlexDGrid workshop	Participated	September 2013
Low carbon Networks conference 2013	Presented	November 2013

## 2 PROJECT MANAGER'S REPORT

### 2.1 General

The key project management activities undertaken during the reporting period are summarised below:

- **Contracts signed with all Project Partners:** Contracts have now been agreed and signed with the CLASS Project Partners in Table 2 of the Project Direction; namely Impact Research, Tyndall Centre, and University of Manchester.

As reported in last period's Project Progress Report, Contracts were previously signed with the Project Partners in Table 1 of the Project Direction, namely National Grid, Siemens, GE and Parsons Brinckerhoff.

As contracts have now been signed with the Project Partners named in both tables, all Condition Precedents in the CLASS Project Direction have now been met.

- **Project monitoring and control:** Project monitoring and control has been ongoing to ensure that the Project continues to progress smoothly, within budget, to time and that the outputs are of the highest quality.

Amongst other things, all SDRCs due in the reporting period were delivered in the agreed timeframe, and all project activities are currently progressing to plan.

- **Liaison with Ofgem:** During the reporting period, there has been regular contact and liaison with Ofgem. In particular, Ofgem's comments and feedback were incorporated into the Customer Engagement plan and Data Privacy Statement, which are mandatory requirements set out in the Low Carbon Networks Fund Governance Document v.6.

Both of these documents have been formally approved by Ofgem, and have been published on the CLASS website.

- **Regular engagement with Project Partners:** The Electricity North West CLASS project team engages and holds regular meetings with the Project Partners. These include weekly and monthly meetings with individual partners, *ad hoc* meetings as necessary and quarterly Project Steering Group meetings that are attended by all Partners.

## 2.2 Technology, Trials and Research Workstreams

The key activities undertaken by the Technology, Trials and Research Workstreams during the reporting period are summarised below:

- **Site selection for voltage controllers and monitoring equipment:** Using a robust methodology and defined criteria, the 60 primary substations where Voltage Controllers and primary monitoring equipment will be installed have been selected. Furthermore, 55 additional sites have been identified for locations of monitoring equipment on the secondary network. A report describing the methodology and showing the full list of selected primary substations and the sites for monitoring equipment, has been published and is available on the CLASS website.
- **CLASS Trial area finalised:** Having identified the CLASS Primary substations and monitoring sites, the CLASS trial area is now defined.

A map showing the CLASS Trial area has been produced, and has been published on the CLASS Project website.

- **Voltage regulation scheme & Autonomous Substation Controllers developed:** The logic and algorithms underpinning the voltage regulation scheme have been finalised. The Voltage Controller, also referred to as the “Autonomous Substation Controller (ASC)”<sup>1</sup>, has been developed by CLASS Project Partner Siemens, and passed its Factory Acceptance Test (FAT) in November 2013.
- **Installation of network technologies has commenced:** In line with the CLASS Project Plan, installation of network technologies, including the ASCs, monitoring equipment and telemetry equipment, has commenced and is ongoing. As such, CLASS is on track to meet the technology Go-Live date of 30 April 2014.
- **ICT systems, hardware and software implementation is ongoing:** In addition to the network technologies above, good progress is also being made with the implementation of ICT systems, hardware and software that are required for CLASS.

In particular, the development and testing of the Electricity North West’s CLASS dashboard is now complete. It is notable that this is significantly in advance of the technology Go-Live date.

---

<sup>1</sup> Autonomous Substation Controller (ASC) is the brand name used by the developer, Siemens, for the Voltage Controller. The two terms are therefore used interchangeably in this report.

Similarly, development of the Inter-Control Centre Communications Protocol (ICCP) link between Electricity North West and National Grid is ongoing, with both organisations working collaboratively to ensure that the effectiveness of the link is maximised.

- **Regular meetings and ‘requirements gathering workshops’ with Project Partners:** During the reporting period, a number of meetings and workshops were held with the key technical project partners, including National Grid, GE, Siemens, Parsons Brinckerhoff and University of Manchester. These meetings sought to define and agree requirements, and progress CLASS deliverables.
- **First draft of Design of the Trial and Test regime produced:** Work has been ongoing to develop the Trials & Test regime, which will define and provide the methodology for the series of CLASS trials that will commence in the summer of 2014. The methodology is being developed collaboratively with Project Partners, who are being engaged through workshops and a consultative review process. A first draft of the Trials and Test regime has been produced, with a view to finalisation by January 2014.

In the next reporting period, the Technology, Trials and Research Workstreams will undertake the following activities:

- Publish the design of the regulation scheme for substation Voltage Controllers;
- Complete the installation and commissioning of all CLASS network technologies, ie, the Autonomous Substation Controllers (ASCs), Monitoring and telemetry equipment;
- Complete the implementation and testing of all CLASS ICT, hardware and software, including the dashboard and the ICCP link;
- Complete and publish the CLASS Trials and Test regime;
- Publish a report outlining the key learning from installation and commissioning of the various CLASS technologies; and
- Go-Live with the CLASS technologies in April 2014.

### **2.3 Customer Engagement Workstream**

The key activities undertaken by the Customer Engagement Workstream during the reporting period are summarised below:

- **Finalisation of the Customer Engagement Plan and Data Privacy Statement:** The CLASS Customer Engagement Plan and Data Privacy Statement were produced and approved by Ofgem. Both documents are mandatory requirements of the Low Carbon Networks Fund Governance Document v.6. The Customer Engagement Plan sets out how Electricity North West and the CLASS Project Partners will engage Relevant

Customers during the Project. The Data Privacy Statement sets out what personal data will be collected, how it will be used, and how it will be kept safe.

Following initial submission to Ofgem, feedback was received and incorporated in the documents. Both documents were formally approved by Ofgem in October 2013.

- **Developed and published draft Customer marketing campaign materials:** In advance of the customer workshops (see below), the Electricity North West team produced draft versions of potential customer marketing campaign material. When finalised, the campaign material will be used to raise awareness of CLASS in the Trial area, and to encourage participation in the series of surveys. The draft campaign materials have been published on the CLASS website, and will be finalised with the feedback and suggestions from the cross-section of customers that are being engaged via a series of workshops (see below).
- **Hosted a series of Customer workshops:** To assist with the development of customer materials, including the campaign materials above and the survey instruments, the project team is engaging a representative cross-section of customers through a series of workshops. These Engaged Customer Panels (ECPs) will advise on how best to engage customers during the trials, and will provide feedback on the design, wording and form of the survey instruments and customer campaign material.

To date, six ECP workshops have been held, from which useful and positive feedback has been obtained.

- **Development of the customer survey methodology is ongoing:** Concurrent with the design of the Trials and Test regime (see section 2.2 above), development of the methodology for the associated customer surveys is also ongoing. When completed, this methodology will define how the series of CLASS customer surveys will be undertaken. The customer survey methodology will be peer-reviewed by an external party before it is finalised and implemented.

In the next reporting period, the Customer Engagement Workstream will undertake the following activities:

- Complete the series of customer workshops;
- Identify Control Group and Trial area customers;
- Finalise the Customer survey methodology after an external peer-review;
- Commence recruitment of survey participants and the associated baseline surveys; and
- Produce and distribute first CLASS customer communication pamphlets.

## 2.4 Learning and Dissemination Workstream

The key activities undertaken by the Learning and Dissemination Workstream during the period are summarised below:

- **Hosted the first CLASS webinar:** The first of a series of three CLASS webinars was held in June 2013. 37 participants attended, representing DNOs, consumer groups, technology providers and academia. During the webinar, the aims and objectives of the CLASS project were introduced, and questions fielded about the project.

Feedback from participants about the webinar was positive, with 94% of respondents to the post-evaluation survey indicating that it had successfully increased their understanding of CLASS. Furthermore, 90% expressed confidence that the CLASS approach would be successful and would provide a useful tool for coping with future electricity demand.

Moreover, 100% of respondents indicated that webinars provided a useful tool for disseminating information about CLASS.

- **Uploaded the first CLASS video podcast to the CLASS website:** A video introducing the CLASS project was produced and uploaded to the CLASS website. This can be viewed by any interested stakeholder or member of the public, and provides a simple and easily understood description of the project and its objectives.
- **CLASS Website established:** At the start of the project, a temporary CLASS project website was established at: [www.enwl.co.uk/class](http://www.enwl.co.uk/class) where the podcast and other early deliverables were uploaded. In September 2013, the permanent version of the website went 'live' at the same URL (above). As part of that process, all documents from the temporary website were transferred to the permanent website.
- **Social media forums exploited:** To ensure that the key messages from CLASS are disseminated as widely as possible, the project team is using a range of social media outlets to communicate CLASS-related information.

To maximise the effectiveness of dissemination and engagement activities, CLASS is utilising existing corporate social media channels rather than 're-inventing the wheel'. Specifically, the project team is using the social media outlets below:



<http://www.facebook.com/ElectricityNorthWest>



<https://twitter.com/ElectricityNW>



<http://www.linkedin.com/company/Electricity-North-West>



<http://www.youtube.com/ElectricityNorthWest>

- **CLASS newsletter published and distributed:** The first CLASS newsletter was published in October 2013. It provided background about CLASS, the activities to date, and the next steps. It was distributed widely to DNOs, consumer groups, academics and other stakeholders. It has also been uploaded to the CLASS website, and is therefore accessible to any interested party.
- **Attendance at the 2013 Low Carbon Networks (LCN) Fund Conference:** In November 2013, Members of the CLASS team attended and presented at the annual LCN Fund Conference, which was held in Brighton.

In the next reporting period, the following learning & dissemination activities will be undertaken:

- Organise and host the first CLASS Learning Event;
- Continue to develop and update the project website to ensure all deliverables and learning outputs are shared with stakeholders and customers; and
- Continue to use social media outlets to promote CLASS.

### **3 CONSISTENCY WITH FULL SUBMISSION**

At the end of this reporting period, we can confirm that the CLASS Project is being undertaken in accordance with the Full Submission.

### **4 RISK MANAGEMENT**

There are currently no uncontrolled risks that could impede the achievement of any of the SDRCs outlined in the Project Direction, or which could cause the Project to deviate from the Full Submission.

We monitor risks on a continuous basis, including the potential risks that were documented in the Full Submission.

The status of these risks is shown at Appendix A.

## 5 SUCCESSFUL DELIVERY REWARD CRITERIA (SDRC)

Nine SDRCs were delivered in this reporting period. These are shown in Table 5-1 below.

**Table 5-1: CLASS Project SDRCs delivered in the reporting period**

SDRC (Evidence)	Planned date	Completion date
Host first CLASS Webinar by June 2013	Jun-13	Jun-13
Send for approval the Customer Engagement Plan and Data Privacy Statement to Ofgem by July 2013	Jul-13	Jul-13
Publish the site selection report including the methodology by August 2013	Aug-13	Aug-13
CLASS Website and CLASS website and Social Media Forums is live by September 2013	Sep-13	Sep-13
Publish on CLASS website map of Trial area by September 2013	Sep-13	Sep-13
Publish on CLASS website customer marketing/campaign materials by September 2013	Sep-13	Sep-13
Publish on CLASS website first Video Podcast by September 2013	Sep-13	Sep-13
First Engaged Customer Panel workshops held by October 2013	Oct-13	Oct-13
Actively Participate in 2013 Annual LCN Fund Conference	Nov-13	Nov-13

The SDRCs due in the next reporting period are shown below.

**Table 5-2: CLASS SDRCs due in the next reporting period**

SDRC (Evidence)	Planned date	Status
Final Engaged Customer Panel workshops held by December 2013	Dec-13	On Track
Publish on CLASS website Trials and test regime report in January 2014	Jan-14	On Track
Publish on CLASS website Control Group and Trial area customer communication by January 2014	Jan-14	On Track
Distribute first communication by February 2014	Feb-14	On Track
Publish the design of the regulation scheme for substation Voltage Controllers by February 2014	Feb-14	On Track
Network monitoring equipment installed and commissioned by March 2014	Mar-14	On Track
Publish the commissioning report by April 2014	Apr-14	On Track
Technology Go-Live by April 2014	Apr-14	On Track

SDRC (Evidence)	Planned date	Status
First CLASS Learning Event - April 2014	Apr-14	On Track

The current status of all SDRCs is shown at Appendix B. It will be noted from the commentary for each, that we currently have no reason to believe that any of the SDRCs will be delayed. Progress against the SDRCs and the project plan will continue to be monitored, and if the current forecast for SDRC delivery changes, future Project Progress Reports will be updated accordingly.

## 6 LEARNING OUTCOMES

The key learning gained from the current reporting period are summarised below:

- *Lesson 1 – Where Microtapp tap changer relays have not been installed, Argus 8 relays can be used to enable the ASCs to function*

The ASC, being developed by CLASS Project Partner Siemens, ordinarily requires a Microtapp tap changer relay to enable it to carry out the required function for CLASS. This presented a scenario where tap changer relays in the trial area that were not of this type, would potentially have to be replaced with Microtapps, regardless of age or condition. In the context of the CLASS project, and any future roll-out, this would have implications for costs and time.

To alleviate these potential issues, Electricity North West and Siemens investigated potential solutions that would enable the use of older type tap changers in CLASS thus preventing the need to change all non-Microtapp tap changer relays. This investigation identified “Argus 8” relays, which is also a Siemens product, as being suitable for this purpose.

Accordingly, Argus 8 relays will be used at 12 non-Microtapp CLASS Primary substations to enable the ASCs to function with other types of tap changer relays. By mitigating the need to replace existing tap changers at these sites, the use of the Argus 8 relays will save costs and time in the context of CLASS, and better utilise existing network assets.

This has the added benefit that it will also generate learning and lessons on how to make the ASCs function at sites where Microtapps have not been installed.

- *Lesson 2 - Webinars are very useful tools for disseminating information*

As indicated in section 2.4, the feedback from attendees at the CLASS webinar was overwhelmingly positive. There was general consensus that webinars provide a useful tool for disseminating information. Subsequent offline discussions suggested that a key reason for this is that webinars enable participants to join the discussion without travelling, and without having to take more than the allotted time from work. Webinars are therefore cost-effective, both for the organiser and participants, and can facilitate greater engagement.

*Lesson 3 – Using a panel of customers to assist with the design of engagement and survey material is proving very beneficial to the project*

To assist with the development of customer materials, including the campaign materials and the survey instruments, the project team is engaging a representative cross-section of customers through a series of workshops. These customer panels are advising on how best to engage customers during the trials, the optimal design of customer materials and survey instruments, and their wording and form.

The outputs of the workshops have validated the project view that involving customers at the design stage, would ensure that campaign materials are more effective, engaging and understandable by members of the public.

In particular, the following learning points have been gained from the workshops.

1. **Customers are insufficiently aware of DNOs and their roles:** Customers are generally supplier-focussed, and relate the full electricity chain with the name of the retailer appearing on their bill. Additionally, they are often confused about the role of DNOs and the relationship between DNO and supplier. As such, customers could benefit from more information about DNOs.

In designing the customer engagement material, CLASS will ensure that the role of DNOs in delivering electricity to homes is clearly articulated, to help customers better understand the important role that DNOs play in the electricity chain.

2. **Information should be simple and informative, but still communicate the key issue:** CLASS is a complex project. To ensure that customers understand the challenge and the proposed CLASS solution, the project should be communicated in a simple, clear and easily understood manner. Whilst keeping things however, it is important that the key messages of the project are articulated, so that customers can fully appreciate the benefits.

During the workshops, the customer panels have been making useful suggestions and recommendations to enable easier understanding of CLASS customer engagement materials. These suggestions have accordingly been incorporated.

Future customer panels will provide input into the design of customer survey recruitment materials and the survey instruments.

3. **There is increasing customer interest in how CLASS is being funded:** Given that the issue of 'energy prices' is currently prevalent in the news, there is a noticeable interest amongst the panel of customers about how CLASS is funded.

As customers in the CLASS Trial area may also be interested in this, information about the LCN Fund, and the long-term benefits in keeping energy

prices lower than they would otherwise be, will be included in CLASS customer materials.

4. **A cash-incentive increases the likelihood of participation in the surveys:** The panel validated the CLASS approach of providing a small cash incentive to participants in the surveys. There was a view however, that a reduction in bills would provide a stronger incentive. Again, this probably reflects the fact that energy prices are currently a 'hot topic' in the news.
5. **A leaflet is a good tool for raising awareness of the project:** The panel also validated the CLASS approach of distributing leaflets in the trial area. There was a view that a TV campaign could potentially be more effective. However, the budgetary implications of this approach were recognised.
6. **The name of projects should provide some indication to the customer of what the project is about:** A notable feedback from customers is that the name of projects should give an idea of what the project is seeking to achieve.

This has been noted, and is something that Electricity North West will seek to address when naming future projects.

7. **Customers are supportive of innovative approaches that could deliver potential cost savings:** Once the customer panels had been advised of the problems facing the industry going forward and of the potential CLASS solution and benefits, they were keen to find out more and to engage with the process.

This suggests that customers are welcoming of innovative ideas and projects that have the potential to keep energy bills lower than they would otherwise be.

## 7 BUSINESS CASE UPDATE

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

## 8 PROGRESS AGAINST BUDGET

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

Actual spend to date compared to Project Budget is summarised in Table 8.1 below. The report includes expenditure up to and including 30 November 2013.

It will be noted that the Project is currently performing favourably relative to budget. Project expenditure as at the end of November 2013 was £1.8m compared to a Cost Baseline of £4.3m.

**Table 8-1: Summary of project expenditure**

£'000s Excluding Partner Funding Ofgem Cost Category	Spend to Date			Total Project		
	Actual	Budget	Variance	Forecast	Budget	Variance
<b>Summary</b>						
Labour	357	1,017	660	1,948	1,948	0
Equipment	279	1,047	768	1,141	1,141	0
Contractors	956	1,646	689	3,644	3,644	0
IT	98	219	121	287	287	0
Payments to users	5	0	(5)	141	141	0
Contingency	44	244	199	280	595	315
Other	46	114	68	341	341	0
<b>Total Costs</b>	<b>1,786</b>	<b>4,286</b>	<b>2,500</b>	<b>7,782</b>	<b>8,098</b>	<b>315</b>

The deferment of orders and subsequent implementation of high value plant and services has caused a deferment of expenditure to latter parts of the financial year. This has resulted in a £2.5m variance to the original project budget as at 30 November 2013. This is not expected to jeopardise the delivery of the SDRC as this expenditure is associated with relatively long duration activities whose SDRC are not due until March 2014. The Estimated at Completion cost for the project is forecast to remain in line with the original budget. We currently anticipate using just under 50% of the Projects contingency, primarily on installation of substation controllers and monitoring equipment.

Detailed expenditure is shown at Appendix D at project activity level.

## 9 BANK ACCOUNT

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

## 10 INTELLECTUAL PROPERTY RIGHTS

Electricity North West is following the default IPR arrangements. No IPR have been generated or registered during the reporting period.

We are currently considering the IPR implications of forthcoming project deliverables, and will report on them in the next project progress report.

## 11 ACCURACY ASSURANCE STATEMENT

This document has been reviewed by a number of key business stakeholders. The Project team and select members of the CLASS 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 CLASS 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: STATUS OF RISKS FROM THE FULL SUBMISSION

Risk description	Category	Owner	Likelihood	Impact	Status	Comments
Resources are not mobilised in time, resulting in project delay	Other	Electricity North West	Very Low	Moderate	Closed	All Electricity North West resources are in place. Furthermore, all Project partners are fully mobilised.
Delay to installation of Voltage Controllers due to resourcing constraints	Installation	Electricity North West	Low	Moderate	Open	Installation of the Autonomous Substation Controllers (ASCs) has commenced and is currently progressing to plan.
Older Primary substation sites may have incomplete layout drawings	Installation	Electricity North West	Fairly Likely	Very Low	Open	A Pilot Survey was undertaken by Siemens, and an approach agreed for dealing with these and similar issues.
Delay to connecting the ICCP link to Electricity North West's and National Grid's control system	Installation	Electricity North West/ National Grid	Low	Moderate	Open	Development of the ICCP link has commenced, and is progressing to plan.
Establishment of the ICCP link could impair Electricity North West's and National Grid's systems and processes	Installation	Electricity North West/ National Grid	Very Low	Moderate	Open	The design and plan for delivering the ICCP link has been developed in collaboration with stakeholders in National Grid and Electricity North West. Therefore all (known) issues have been identified, and eliminated in the design stage.
National Grid may be unable to undertake their responsibilities in executing some of the Trials, due to other commitments	Installation	Electricity North West/ National Grid	Very Low	Moderate	Open	The CLASS Trials and Test methodology, currently in development, is being produced in consultation with National Grid. Therefore all (known) constraints on National Grid will be identified, and eliminated in the design stage.
Trials could compromise Electricity North West's and National Grid's security of supply commitments	Other	Electricity North West/ National Grid	Very Low	Significant	Open	The CLASS Trials and Test methodology is being produced in consultation with National Grid. Notably, system security – for both organisations, has been at the heart of the trial design. Furthermore, a

Risk description	Category	Owner	Likelihood	Impact	Status	Comments
						number of tests will be undertaken before Go-Live, to assess and minimise system risk.
Conflicts may occur between Trials and unknown planning/ maintenance works at specific Primary substation sites	Installation	Electricity North West/ National Grid	Very Low	Moderate	Open	The CLASS Trials and Test methodology is being produced through a consultative process. Engineering teams at Electricity North West and National Grid are being engaged to ensure that trials do not conflict with maintenance works.
Customers in the Trial area have voltage optimisers fitted, thus concealing the impact of the Trials	Other	Electricity North West	Low	Moderate	Open	The robust customer recruitment process will ensure that such customers are identified, and an approach identified for addressing them.
Customers in the Trial area notice a change in their voltage levels because of the Trials being undertaken	Other	Electricity North West	Very Low	Low	Open	The objective of the CLASS trials is to assess whether customers observe any impacts on their electricity supply. Therefore, if they do, that would form part of CLASS' learning. To ensure that customers know that the trial is ongoing, the project team will proactively inform all customers and stakeholders in the Trial area of the Project, and provide them with contact details for the team, etc.
Potential for poor customer participation due to complexity of CLASS	Recruitment	Electricity North West	Low	Significant	Open	Workshops are ongoing with a cross-section of customers, ie, the Engaged Customer Panel (ECP). The ECP will advise on the form of the survey instruments. This will ensure that all materials are easily understandable.
Placebo effect amongst survey participants	Other	Electricity North West	Low	Moderate	Open	Survey responses will be normalised against a Control Group to identify any placebo effects. Furthermore, the

Risk description	Category	Owner	Likelihood	Impact	Status	Comments
						subsequent analyses will highlight any 'outliers' in the data, which will then be further investigated as necessary.
Potential for attrition amongst survey participants between surveys	Recruitment	Electricity North West	Low	Moderate	Open	Surplus participants will be recruited to negate the impacts of any drop outs.
University of Manchester undergoes personnel changes during the Project	Other	Electricity North West/ University of Manchester	Low	Low	Open	The contract with University of Manchester ensures that all deliverables involve multiple individuals to minimise this risk. Furthermore, clearly defined timeframes have been included in the contract.
Learning is not disseminated effectively to all stakeholders	Other	Electricity North West	Very Low	Moderate	Open	CLASS dissemination activities have already commenced, and a diverse range of tools are being used to engage stakeholders. These include webinars, podcasts, social media, a dedicated CLASS website, newsletters, etc.
Electricity North West may not be able to respond to OC6 within the Project area because of an ongoing initiated Trial	Other	Electricity North West	Very Low	Significant	Open	As National Grid is a CLASS project partner, any issue around compliance with OC6 will be addressed with National Grid as a matter of urgency.
Customers may be confused by the various 'green energy' government initiatives currently ongoing	Recruitment	Electricity North West	Moderate	Moderate	Open	The input from the cross-section of customers, ie, the ECP, who are advising on the design of customer materials, will ensure that CLASS is easily understood and not confused with other initiatives.

As the Project progresses, we will gain a better view of the likelihood of these risks and will also identify more evidence-based ones.

## APPENDIX B: SUMMARY OF PROJECT SDRC

SDRC (Evidence)	Due date	Status
Webinar 1	Jun-13	Delivered
Send for approval the Customer Engagement Plan and Data Privacy Statement to Ofgem by July 2013	Jul-13	Delivered
Publish the site selection report including the methodology by August 2013	Aug-13	Delivered
CLASS Website and CLASS website and Social Media Forums is live by September 2013	Sep-13	Delivered
Publish on CLASS website map of Trial area by September 2013	Sep-13	Delivered
Publish on CLASS website customer marketing/campaign materials by September 2013	Sep-13	Delivered
Publish on CLASS website first Video Podcast by September 2013	Sep-13	Delivered
First customer workshops held by October 2013	Oct-13	Delivered
Active participation at Annual LCN Fund Conference 2013	Nov-13	Delivered
Final customer workshops held by December 2013	Dec-13	On Track
Publish on CLASS website Trials and test regime report in January 2014	Jan-14	On Track
Publish on CLASS website Control Group and Trial area customer communication by January 2014	Jan-14	On Track
Publish the design of the regulation scheme for substation Voltage Controllers by February 2014	Feb-14	On Track
Network monitoring equipment installed and commissioned by March 2014	Mar-14	On Track
ICCP installed and commissioned by March 2014	Mar-14	On Track
Publish the commissioning reports by April 2014	Apr-14	On Track
Technology go-live by April 2014	Apr-14	On Track
Publish the ICCP commissioning reports by April 2014	Apr-14	On Track
Baseline customer survey initiated in April 2014	Apr-14	On Track
Learning Event 1	Apr-14	On Track
Webinar 2	Jun-14	On Track
Evidence of test Trial data transferred by July 2014	Jul-14	On Track
Learning Event 2	Jul-14	On Track

SDRC (Evidence)	Due date	Status
Publish on CLASS website Video podcast 2 by 15 August 2014	Aug-14	On Track
Publish on CLASS website an initial capability report for all the Trial scenarios by September 2014	Sep-14	On Track
Raw monitoring data downloadable from CLASS website by September 2014	Sep-14	On Track
Active participation at Annual LCN Fund Conference 2014	Nov-14	On Track
Publish on CLASS website Video podcast 3 by 8 December 2014	Dec-14	On Track
Monitoring data is updated on CLASS website by December 2014	Dec-14	On Track
Publish on CLASS website Interim Network Modelling and Analysis Reports by January 2015	Jan-15	On Track
Publish on CLASS website Interim Profile Modelling Study by January 2015	Jan-15	On Track
Publish on CLASS website Interim Asset Health Study Report by January 2015	Jan-15	On Track
Webinar 3	Mar-15	On Track
Monitoring data is updated on CLASS website by April 2015	Apr-15	On Track
Customer surveys completed, with an initial summary report published by June 2015	Jun-15	On Track
Publish on CLASS website NETS SQSS Change Proposal Report by June 2015.	Jun-15	On Track
Publish on CLASS website Final Network Modelling and Analysis Reports by September 2015	Sep-15	On Track
Publish on CLASS website Final Profile Modelling Study by September 2015	Sep-15	On Track
Publish on CLASS website Final Asset Health Study Report by September 2015	Sep-15	On Track
Publish on CLASS website Customer Survey Report by September 2015	Sep-15	On Track
Active participation at Annual LCN Fund Conference 2015	Nov-15	On Track
Provide confirmation from National Grid that the long term monitoring study has been initiated	Dec-15	On Track

## APPENDIX C: PROJECT DIRECTION BUDGET

£000's	
Excluding Partner Funding	
Ofgem Cost Category	
<b>Labour</b>	<b>1,948.16</b>
Data Management	32.00
Data routing configuration	99.03
Installation & configuration of Dashboard hardware & software	83.39
Monitoring Equipment	235.98
Project Management	1,035.07
Purchase & Installation of substation controllers	99.03
Publicity and Dissemination	19.67
SOAP Interface to PoF	156.36
Voltage Controllers interface	187.63
<b>Equipment</b>	<b>1,141.43</b>
Purchase & Installation of substation controllers	656.71
RTU installation	172.00
Monitoring Equipment	312.72
<b>Contractors</b>	<b>3,644.65</b>
Purchase & Installation of substation controllers	1,125.16
Installation & configuration of ICCP	27.36
Customer Survey	218.80
Development of Change Proposals	60.10
Carbon Impact assessment	40.69
Research - Technical	885.52
Project Management	911.56
Design of voltage regulation scheme	375.47
<b>IT</b>	<b>286.85</b>
Installation & configuration of Dashboard hardware & software	121.78
Installation & configuration of ICCP	165.06
<b>Payments to users</b>	<b>141.15</b>
Incentive to attract customers to complete surveys	141.15
<b>Contingency</b>	<b>594.69</b>
Installation & configuration of ICCP	147.33
Purchase & installation of monitoring equipment	123.72
Incentive to attract customers to complete surveys	33.41
Purchase & Installation of substation controllers	156.36
Installation & configuration of Dashboard hardware & software	78.18
Research - Technical	55.69
<b>Other</b>	<b>340.91</b>
Publicity and Dissemination	194.47
Accommodation	146.45
	<b><u>8,097.84</u></b>

## APPENDIX D: DETAILED PROJECT EXPENDITURE

£'000s Excluding Partner Funding Ofgem Cost Category	Spend to date			Total Project			Comments
	Actual	Plan	Variance	Forecast	Plan	Variance	
<b>Labour</b>	<b>357</b>	<b>1,017</b>	<b>660</b>	<b>1,948</b>	<b>1,948</b>	<b>0</b>	
Data Management	22	6	(17)	32	32	0	Profile variances to plan. Resources in place and related SDRC on track.
Data routing configuration	0	83	83	99	99	0	Profile variances to plan. Resources in place and related SDRC on track.
Installation & configuration of Dashboard hardware & software	3	63	60	83	83	0	Profile variances to plan. Resources in place and related SDRC on track.
Monitoring Equipment	8	197	189	236	236	0	Profile variances to plan. Resources in place and related SDRC on track.
Project Management	274	382	107	1,035	1,035	0	Profile variances to plan. Resources in place and related SDRC on track.
Purchase & Installation of substation controllers	0	42	42	99	99	0	Profile variances to plan. Resources in place and related SDRC on track.
Publicity and Dissemination	0	2	2	20	20	0	Profile variances to plan. Resources in place and related SDRC on track.
SOAP Interface to PoF	49	87	38	156	156	0	Profile variances to plan. Resources in place and related SDRC on track.
Voltage Controllers interface	1	156	156	188	188	0	Profile variances to plan. Resources in place and related SDRC on track.
<b>Equipment</b>	<b>279</b>	<b>1,047</b>	<b>768</b>	<b>1,141</b>	<b>1,141</b>	<b>0</b>	
Purchase & Installation of substation controllers	215	643	428	657	657	0	Profile variance to plan, related SDRC on track.
RTU installation	0	143	143	172	172	0	Profile variance to plan, related SDRC on track.
Monitoring Equipment	64	261	197	313	313	0	Profile variance to plan, related SDRC on track.
<b>Contractors</b>	<b>956</b>	<b>1,646</b>	<b>689</b>	<b>3,644</b>	<b>3,644</b>	<b>0</b>	
Purchase & Installation of substation controllers	382	677	295	1,125	1,125	0	Profile variance to plan. Resources being mobilised. This activity represents the most challenging aspect of the project.
Installation & configuration of ICCP	9	11	2	27	27	0	Profile variances to plan. Resources in place and related SDRC on track.
Customer Survey	28	0	(28)	219	219	0	Profile variances to plan. Resources in place and related SDRC on track.
Development of Change Proposals	0	0	0	60	60	0	Profile variances to plan. Resources in place and related SDRC on track.
Carbon Impact assessment	0	13	13	41	41	0	Profile variances to plan. Resources in place and related SDRC on track.
Research - Technical	0	119	119	886	886	0	Profile variances to plan. Resources in place and related SDRC on track.
Project Management	414	569	155	912	912	0	Profile variances to plan. Resources in place and related SDRC on track.
Design of voltage regulation scheme	123	257	133	375	375	0	Profile variances to plan. Resources in place and related SDRC on track.
<b>IT</b>	<b>98</b>	<b>219</b>	<b>121</b>	<b>287</b>	<b>287</b>	<b>0</b>	
Installation & configuration of Dashboard hardware & software	13	72	60	122	122	0	Profile variances to plan. Resources in place and related SDRC on track.
Installation & configuration of ICCP	85	147	62	165	165	0	Profile variances to plan. Resources in place and related SDRC on track.
<b>Payments to users</b>	<b>5</b>	<b>0</b>	<b>(5)</b>	<b>141</b>	<b>141</b>	<b>0</b>	
Incentive to attract customers to complete surveys	5	0	(5)	141	141	0	Profile variances to plan. Resources in place and related SDRC on track.
<b>Contingency</b>	<b>44</b>	<b>244</b>	<b>199</b>	<b>280</b>	<b>595</b>	<b>315</b>	
Installation & configuration of ICCP	22	49	27	22	147	125	Marginal use of contingency required for unplanned hardware.
Purchase & installation of monitoring equipment	22	56	33	106	124	18	Full use of contingency expected. Actual unit costs exceeded budget.
Incentive to attract customers to complete surveys	0	0	0	0	33	33	Full use of contingency expected. Higher cost solution at some Primary Substations.
Purchase & Installation of substation controllers	0	100	100	152	156	5	
Installation & configuration of Dashboard hardware & software	0	39	39	0	78	78	
Research - Technical	0	0	0	0	56	56	
<b>Other</b>	<b>46</b>	<b>114</b>	<b>68</b>	<b>341</b>	<b>341</b>	<b>0</b>	
Publicity and Dissemination	13	67	54	194	194	0	Profile variances to plan. Resources in place and related SDRC on track.
Accommodation	33	47	14	146	146	0	Profile variances to plan. Resources in place and related SDRC on track.
	<b>1,786</b>	<b>4,286</b>	<b>2,500</b>	<b>7,782</b>	<b>8,098</b>	<b>315</b>	

## APPENDIX E: PROJECT BANK ACCOUNT

The bank statement below details all transactions relevant to the Project up to 6 December 2013. This includes all receipts and payments associated with the Project up to the November 2013 month end reporting period.



Yesterday's Statement

C082421

### ELECTRICITY NWL NO.12 LCNF (CLASS) (GBP)

Date	Type	Narrative	Value Date	Payments	Receipts	Balance
07MAR13		Opening Ledger Balance				0.00 Cr
26APR13	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00430			1,025,863.37	1,025,863.37 Cr
26APR13	F/FLOW	SOUTHERN ELECTRIC F/FLOW			32,333.37	1,058,196.74 Cr
26APR13	F/FLOW	SCOTTISH HYDRO-ELE F/FLOW			15,250.00	1,073,446.74 Cr
26APR13	BGC	LONDON POWER NETWO BGC			70,666.63	1,144,113.37 Cr
26APR13	BGC	LOW CARB NETWORKS				
26APR13	BGC	SOUTH EASTERN POWE BGC			46,083.37	1,190,196.74 Cr
26APR13	BGC	LOW CARB NETWORKS				
26APR13	BGC	NORTHERN ELECTRIC BGC			46,416.63	1,236,613.37 Cr
26APR13	BGC	LCNF				
26APR13	BGC	NORTHERN ELECTRIC BGC			32,416.63	1,269,030.00 Cr
26APR13	BGC	LCNF				
26APR13	BGC	R B S-SP MANWEB BGC			30,500.00	1,299,530.00 Cr
26APR13	BGC	ENWL NO 12 LCNF				
29APR13	F/FLOW	WESTERN POWER DIST F/FLOW			108,083.37	1,407,613.37 Cr
28MAY13	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00446			216,083.33	1,623,696.70 Cr
28MAY13	F/FLOW	WESTPOWSWEST F/FLOW			108,083.33	1,731,780.03 Cr
28MAY13	F/FLOW	EDF ENERGY PLOGA F/FLOW			70,666.67	1,802,446.70 Cr
28MAY13	F/FLOW	SOUTH EASTERN POWE F/FLOW			46,083.33	1,848,530.03 Cr
28MAY13	F/FLOW	SCOTTISH HYDRO-ELE F/FLOW			15,250.00	1,863,780.03 Cr
28MAY13	F/FLOW	SOUTHERN ELECTRIC F/FLOW			32,333.33	1,896,113.36 Cr
28MAY13	BGC	NORTHERN ELECTRIC BGC			46,416.67	1,942,530.03 Cr
28MAY13	BGC	LCNF				
28MAY13	BGC	NORTHERN ELECTRIC BGC			32,416.67	1,974,946.70 Cr
28MAY13	BGC	LCNF				
28MAY13	BGC	R B S-SP MANWEB BGC			30,500.00	2,005,446.70 Cr
28MAY13	BGC	ENWL NO 12 LCNF				
12JUN13	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00463		19,104.49		1,986,342.21 Cr
12JUN13	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00462		179,094.75		1,807,247.46 Cr
27JUN13	F/FLOW	WESTPOWSWEST F/FLOW			108,083.33	1,915,330.79 Cr
27JUN13	BGC	R B S-SP MANWEB BGC			30,500.00	1,945,830.79 Cr
27JUN13	BGC	ENWL NO 12 LCNF				
27JUN13	CHGS	ACCOUNT CHARGE		2.44		1,945,828.35 Cr
28JUN13	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00465			216,083.33	2,161,911.68 Cr
28JUN13	F/FLOW	SCOTTISH HYDRO-ELE F/FLOW			15,250.00	2,177,161.68 Cr
28JUN13	F/FLOW	SOUTHERN ELECTRIC F/FLOW			32,333.33	2,209,495.01 Cr
28JUN13	BGC	LONDON POWER NETWO BGC			70,666.67	2,280,161.68 Cr
28JUN13	BGC	LOW CARB NETWORKS				
28JUN13	BGC	SOUTH EASTERN POWE BGC			46,083.33	2,326,245.01 Cr
28JUN13	BGC	LOW CARB NETWORKS				
28JUN13	BGC	NORTHERN ELECTRIC BGC			46,416.67	2,372,661.68 Cr
28JUN13	BGC	LCNF				
28JUN13	BGC	NORTHERN ELECTRIC BGC			32,416.67	2,405,078.35 Cr
28JUN13	BGC	LCNF				
04JUL13	CR	INTEREST ADJUSTMENT GROSS CREDIT INTEREST			969.63	2,406,047.98 Cr
08JUL13	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00475		75,274.50		2,330,773.48 Cr
17JUL13	BGC	R B S-SP MANWEB BGC			30,500.00	2,361,273.48 Cr
26JUL13	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00484			216,083.33	2,577,356.81 Cr
26JUL13	F/FLOW	SCOTTISH HYDRO-ELE F/FLOW			15,250.00	2,592,606.81 Cr
26JUL13	F/FLOW	SOUTHERN ELECTRIC F/FLOW			32,333.33	2,624,940.14 Cr
26JUL13	BGC	NORTHERN ELECTRIC BGC			46,416.67	2,671,356.81 Cr
26JUL13	BGC	LCNF				
26JUL13	BGC	NORTHERN ELECTRIC BGC			32,416.67	2,703,773.48 Cr
26JUL13	BGC	LCNF				
26JUL13	BGC	UK PN OPERATIONS BGC			70,666.67	2,774,440.15 Cr
26JUL13	BGC	1000 2000066000 K				
26JUL13	BGC	UK PN OPERATIONS BGC			46,083.33	2,820,523.48 Cr
26JUL13	BGC	1000 2000066007 K				
29JUL13	F/FLOW	WESTPOWSWEST F/FLOW			108,083.33	2,928,606.81 Cr
12AUG13	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00493		289,370.25		2,639,236.56 Cr
21AUG13	BGC	UK PN OPERATIONS BGC			70,666.67	2,709,903.23 Cr
21AUG13	BGC	1000 2000073436 K				
21AUG13	BGC	UK PN OPERATIONS BGC			46,083.33	2,755,986.56 Cr
21AUG13	BGC	1000 2000073443 E				
27AUG13	F/FLOW	WESTPOWSWEST F/FLOW			108,083.33	2,863,869.89 Cr
28AUG13	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00485			216,083.33	3,079,953.22 Cr
28AUG13	F/FLOW	SP MANWEB PLC F/FLOW			30,500.00	3,110,453.22 Cr
28AUG13	F/FLOW	SOUTHERN ELECTRIC F/FLOW			32,333.33	3,142,786.55 Cr

Version : 3,16,1,512

This report is confidential and for the intended recipient only.  
If you are not the intended recipient please destroy this page immediately.

09/12/13 12:06:51  
Page 1

**ELECTRICITY NWL NO.12 LCNF (CLASS) (GBP)**

Date	Type	Narrative	Value Date	Payments	Receipts	Balance
28AUG13	F/FLOW	SCOTTISH HYDRO-ELE F/FLOW			15,250.00	3,158,036.55 Cr
28AUG13	BGC	NORTHERN ELECTRIC BGC LCNF			46,416.67	3,204,453.22 Cr
28AUG13	BGC	NORTHERN ELECTRIC BGC LCNF			32,416.67	3,236,869.89 Cr
10SEP13	INT	GROSS CREDIT INTEREST			3,206.02	3,240,075.91 Cr
20SEP13	BGC	UK PN OPERATIONS BGC 1000 2000082895 K			70,666.67	3,310,742.58 Cr
20SEP13	BGC	UK PN OPERATIONS BGC 1000 2000082902 K			46,083.33	3,356,825.91 Cr
26SEP13	BGC	R B S-SP MANWEB BGC ENWL NO 12 LCNF			30,500.00	3,387,325.91 Cr
26SEP13	CHGS	ACCOUNT CHARGE		3.20		3,387,322.71 Cr
27SEP13	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00504			216,083.33	3,603,406.04 Cr
27SEP13	F/FLOW	WESTPOWSWEST F/FLOW			108,083.33	3,711,489.37 Cr
27SEP13	F/FLOW	SCOTTISH HYDRO-ELE F/FLOW			15,250.00	3,726,739.37 Cr
27SEP13	F/FLOW	SOUTHERN ELECTRIC F/FLOW			32,333.33	3,759,072.70 Cr
27SEP13	BGC	NORTHERN ELECTRIC BGC LCNF			46,416.67	3,805,489.37 Cr
27SEP13	BGC	NORTHERN ELECTRIC BGC LCNF			32,416.67	3,837,906.04 Cr
30SEP13	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00506			404,271.45	4,242,177.49 Cr
10OCT13	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00513		63,310.16		4,178,867.33 Cr
10OCT13	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00512		193,561.88		3,985,305.45 Cr
10OCT13	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00511		404,271.45		3,581,034.00 Cr
25OCT13	BGC	UK PN OPERATIONS BGC 1000 2000094983 K			70,666.67	3,651,700.67 Cr
25OCT13	BGC	UK PN OPERATIONS BGC 1000 2000094990 K			46,083.33	3,697,784.00 Cr
28OCT13	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00522			216,083.33	3,913,867.33 Cr
28OCT13	F/FLOW	WESTPOWSWEST F/FLOW			108,083.33	4,021,950.66 Cr
28OCT13	F/FLOW	SOUTHERN ELECTRIC F/FLOW			32,333.33	4,054,283.99 Cr
28OCT13	F/FLOW	SCOTTISH HYDRO-ELE F/FLOW			15,250.00	4,069,533.99 Cr
28OCT13	BGC	NORTHERN ELECTRIC BGC LCNF			46,416.67	4,115,950.66 Cr
28OCT13	BGC	NORTHERN ELECTRIC BGC LCNF			32,416.67	4,148,367.33 Cr
28OCT13	BGC	R B S-SP MANWEB BGC ENWL NO 12 LCNF			30,500.00	4,178,867.33 Cr
13NOV13	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00530		707,073.54		3,471,793.79 Cr
20NOV13	BGC	UK PN OPERATIONS BGC 1000 2000110268 K			70,666.67	3,542,460.46 Cr
20NOV13	BGC	UK PN OPERATIONS BGC 1000 2000110275 K			46,083.33	3,588,543.79 Cr
27NOV13	F/FLOW	WESTPOWSWEST F/FLOW			108,083.33	3,696,627.12 Cr
28NOV13	CR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00541			216,083.33	3,912,710.45 Cr
28NOV13	F/FLOW	SCOTTISH HYDRO-ELE F/FLOW			15,250.00	3,927,960.45 Cr
28NOV13	F/FLOW	SOUTHERN ELECTRIC F/FLOW			32,333.33	3,960,293.78 Cr
28NOV13	BGC	NORTHERN ELECTRIC BGC LCNF			46,416.67	4,006,710.45 Cr
28NOV13	BGC	NORTHERN ELECTRIC BGC LCNF			32,416.67	4,039,127.12 Cr
28NOV13	BGC	R B S-SP MANWEB BGC ENWL NO 12 LCNF			30,500.00	4,069,627.12 Cr
06DEC13	DR	ELECTRICITY NWL NO.4 PYMT TRANSFER 00546		258,765.24		3,810,861.88 Cr
06DEC13		Value of Credits (75)			6,000,893.78	
06DEC13		Value of Debits (11)		2,190,031.90		
06DEC13		Closing Ledger Balance				3,810,861.88 Cr
06DEC13		Closing Cleared Balance				3,810,861.88 Cr

\*\*\* End of Report \*\*\*