Opening up the Gas Market

Project Progress Report 2

July – December 2014

Version 1.0

SGN

Your gas. Our network.

Project number	**SGNGN02**	
Report number	OGM_PPR_02	
Title	OPENING UP THE GAS MARKET PROJECT PROGRESS REPORT 2	
Author	Richard Mason	
Revision	1	
Date	19/12/2014	
Revision History:	**Reviewer/Approver:**	**Date:**
Draft 1	Regulation	11/12/2014
Draft 2	Project Manager	15/12/2014
Final Draft	Project Director	16/12/2014
Final	Project Director	18/12/2014
Final Distribution:		

Rhianne Ogilvie;
rhianne.ogilvie@ofgem.gov.uk

Networks Innovation;
networks.innovation@ofgem.gov.uk

Angus McIntosh;
angus.mcintosh@sgn.co.uk

Beverley Grubb;
beverley.grubb@sse.com

Jamie McAinsh;
jamie.mcainsh@sgn.co.uk

Jenny Rogers;
jenny.1.rogers@sse.com

Scotia Gas Networks Limited
Registered Office: St Lawrence House, Station Approach, Horley, Surrey RH6 9HJ Registered in England & Wales No. 04958135


SGN
OPENING UP
THE GAS MARKET

Contents

1. Glossary of Terms

Abbreviation	Term
BIS	Department for Business Innovation and Skills
DECC	Department of Energy and Climate Change
DNV GL	Technical advisor to the energy industry
EASEE	European Association for the Streamlining of Energy Exchange
GB	Great Britain
GS(M)R	Gas Safety (Management) Regulations
HHIC	Heating and Hot Water Industry Council
HSE	Health & Safety Executive
IGEM	Institution of Gas Engineers and Managers
LDZ	Local Distribution Zone
LNG	Liquefied Natural Gas
NIC	Network Innovation Competition
NBP	National Balancing Point (GB)
OGM	Opening up the Gas Market
PPR	Project Progress Report
SDRC	Successful Delivery Reward Criteria
SGN	Scotia Gas Networks
SIU	Scottish Independent Undertaking
WI	Wobbe Index
ZEE	Zeebrugge (Belgium)

2. Executive Summary

This document is the second project progress report, detailing the progress made in the second six months of the Opening up the Gas Market project, from July – December 2014.

Upon submission of the first Project Progress Report, SGN had completed the appliance survey stage and was making arrangements for the second stage of the project: in-situ appliance testing. The second six months of the project have seen:

- The start of the in-situ testing
- The submission of two Change Requests to Ofgem regarding a budget transfer between cost categories and an amendment to the wording of the Project Direction.

The testing is now underway, following a 10 week delay, due to Change Request negotiations. Test results so far have proved successful and the project team is confident that the anticipated exemption to GS(M)R will be achieved within the next six-month reporting cycle. A summary of the major events from the July – December 2014 period is given below:

- Commencement of the appliance testing stage, with **192** properties and **324** appliances tested to date, totalling **17%** of the overall property population.
- The testing stage has had an **81%** first attempt access rate, an improvement on the access rate experienced during the stage one survey.
- Completion of the appliance testing within laboratory conditions.
- Hosting of 2 engagement events prior to the testing stage, giving customers the opportunity to speak to the Project Team and find out more about the project and its objectives.
- Continued engagement with local media, including Oban Times and Oban FM.
- Sponsorship of 2 community events at the Oban Winter Festival, including a '*Cooking on Gas*' cookery demonstration event.
- Submission of the SDRC-3 report – '*Agreement of trials with HSE, DECC & Ofgem*'.
- Agreement of LNG shipping contract with gas shipper, ensuring provision of LNG for the duration of the trial in stage 3.
- External website now fully live and operational at www.sgn.co.uk/oban
- Social media campaign ongoing with numerous project tweets, using the #SGNOban hashtag, including a re-tweet from celebrity chef Jean-Christophe Novelli.
- Continued positive discussions with HSE and DECC regarding future GS(M)R and exemption for full trial.
- Dissemination event at the Low Carbon Network Innovation conference in Aberdeen.
- First meeting of project technical stakeholder group including DECC, HHIC, Dave Lander Consultancy, Kiwa Gastec, BIS and DNV GL.
- Presentation given at EU Gas Quality working group in Brussels, Belgium.
- Screening of the project film, which was shown during movie trailers at the Oban Phoenix Cinema ahead of all films during October.

Two Change Requests were also submitted during the six month period:

- Change Request submitted to Ofgem to amend the wording of a clause in the Project Direction that prevented SGN from starting the in-situ testing prior to

receiving an exemption from GS(M)R by HSE. Following discussions with HSE, SGN asked to amend this to reflect HSE's advice that the results of the in-situ testing would strengthen the evidence base for the exemption application. This Change Request has now been approved.

- Change Request submitted to Ofgem to transfer funds between categories within the project budget. This was required as the category that was allocated to fund the LNG shipping contract has insufficient funds, but could be offset by surplus funds in a different category without an increase to the overall cost of the budget. The outcome of this Change Request is currently still pending.

In summary, the project is on track to achieve its goals and deliver significant and valuable learning. This report contains information on each of the bullets above, providing a comprehensive update on the achievements made and obstacles overcome to date.

2.1 Dissemination Activities

The main dissemination event of the last six months was the Low Carbon Network Innovation conference in Aberdeen. As well as featuring at the SGN stand throughout the 3 day event, the project also hosted a break-out session to discuss the objectives, progress and projected outcomes, with a Q&A session afterwards.

FIG 1a – Innovation & New Technology Manager, Angus McIntosh, presents to delegates.
FIG 1b – Project Manager, Jamie McAinsh (far right) and Kiwa Gastec MD, Mark Crowther, (second right) discuss the project with delegates.

In July 2014, the Project Manager attended the *Gas Quality Harmonisation* workshop[1] in Brussels, Belgium where DECC presented to delegates on the GB involvement in ensuring diverse gas supplies, which included their involvement with this project.

A technical stakeholder group has also been set up, with the first meeting hosted by DECC in Whitehall, London in August. Attendees at this meeting included DECC, HHIC, Dave Lander Consulting, DNV GL, Kiwa Gastec, SGN and BIS. The purpose of this meeting was to share learning and begin to formulate a 'road map' for the wider GB roll-out should the project prove successful in Oban.

The next six month period will see dissemination activities increased as the project obtains more tangible results to share.

[1] http://ec.europa.eu/energy/gas_electricity/gas/gas_quality_harmonisation_en.htm

3. Project Manager's Report

Following the commencement of the project in January 2014, and the initial PPR in June, the project has successfully progressed as per the project plan. All required reports and approvals have been successfully collated, which has contributed to the project's development.

After successfully completing Stage 1, the project is now underway with Stage 2. Stage 2 predominantly consists of the in situ appliance testing stage and was planned to start in August, however as a result of a Change Request that required submission and subsequent approval, the testing did not begin until November.

A detailed report of progress against the project plan is provided at section 6 of this report; however a brief summary is provided in the table below:

TABLE 1 – Full Submission list of objectives

Objective	Update
Prepare and submit Customer Engagement Plan	Submitted and approved by Ofgem. This is now being implemented.
Establish base at Oban	Project office set up, with portakabin base and container to keep equipment.
Develop house-to-house testing kit	Developed and installed by Kiwa Gastec. Testing kit now in operation as part of the testing procedure.
Appliance testing programme	Phase 1 completed on schedule. Phase 2 underway.
Procurement and replacement of appliances	Buffer stock of appliances kept in storage in Oban to ensure minimal delay for customers needing their appliance replaced.

There have been two scheduled submission to Ofgem in this period, SDRC-3 – *'Agreement of Trials with HSE, DECC & Ofgem'* and the resubmission of SDRC-1 – *'Establish supply chain and shipping arrangements for LNG'*. The necessary actions for completion of these documents were addressed and completed on time.

3.1 Stakeholder Engagement

The project has continued to receive support from key stakeholders. The local council have been particularly engaged and helpful, providing assistance when liaising with vulnerable customer to ensure the project does not adversely affect these customers. We have also been in regular contact with the Housing Associations operating within Oban, with the largest of these sending a letter to each of their tenants advising them of the project and how it impacts them. They have also provided feedback on how best to engage with customers, which we have incorporated into our plans and correspondence. Many of the stakeholders have expressed their excitement regarding the project and the positive effect that they believe our project will have in the Oban community.

Our external events have proved popular with local residents, with a positive turnout at both the drop-in sessions and the Winter Festival events.

The break-out session we held at the Low Carbon Network Innovation conference was well-attended and the pertinent questions asked have helped shape the dissemination events planned for 2015.

The project website is now fully operational, and has undergone a re-design since its initial inception, as discussed in PPR-1. Statistical analysis shows that we have received over 6,400 separate visits to the project webpages since the site went live. The website, www.sgn.co.uk/oban is now included on all correspondence.

The project film is embedded in the homepage of the website given above, and has also been published on SGN's YouTube site[2]. To date, the film has received over 750 views and is the most viewed SGN video published in the last year.

Below is a demonstration of the project's engagement with its stakeholders in the last six months:

TABLE 2 – Stakeholder Engagement Summary

Who	Method	When	Outcome
Argyll & Bute Council – Housing	Email & Telephone	August – November	Council are providing the project with details of vulnerable customers to allow us to plan a better engagement method with these customers. Where the customer has a nominated 'carer' these details have been provided.
Argyll & Bute Council - Roads	Meeting, Email & Telephone	August	Council have granted permission to 'cone off' areas where parking is required 24 hours in advance of the visit. They have also waived any parking charges the project may accrue.
Argyll Community Housing Association	Meeting, Email & Telephone	July & October	ACHA have sent letters to their residents with details of the project, and are assisting with access to vacant properties.
Oban Police	Letter	September	Police are aware of the project plans and are keen to co-operate where required.
Oban Times	Meeting & Email	August – December	Oban Times has ran advertisements and promotions when requested by the project team to publicise the project and any associated events (Winter Festival & Drop-in Sessions)
Oban FM	Meeting & Telephone	November	Local radio station is including a weekly bulleting informing listeners of which roads we will be working in that week.
HSE	Meeting, Email & Telephone	July – December	Regular updates and information provided to HSE in support of the upcoming exemption application. Comments from HSE at these meetings and teleconferences have been have been incorporated into ongoing activities and HSE are supportive of the project progress to date.
Local Suppliers & Fitters	Meeting, Email & Telephone	August – December	Relationships established with local gas fitters and appliance suppliers to inform them of the project and create a working relationship for testing procedure.
Oban Winter Festival	Meeting, Email & Telephone	August – November	Sponsorship of two events at the festival, including a full page advertisement in the festival brochure, and sponsored links on their website.

[2] https://www.youtube.com/user/SGNvideo

Argyll, Lomond & The Isles Energy Agency	Meeting	October	Discussion of how we could work together to support vulnerable customers in Oban during the testing. ALI Energy provides energy advice to local people who are in fuel poverty.
DECC	Meeting, Presentation & Report	June, July & December	Project overview and project progress information, plus a road map for potential roll-out to GB. DECC have been supportive of the project and have used the project as an example at the Gas Harmonisation conference in Brussels. DECC feedback continues to prove useful and is incorporated into ongoing project activities.
Appliance Manufacturers	Telephone	June – December	Discussions regarding the appliance testing plan and process.
HHIC	Meeting & Presentation	June - July	Project overview and discussion to help shape the appliance laboratory testing process. Comments provided at dissemination events incorporated into the project planning.

Throughout the six month period, we have maintained our positive engagement with the Oban customers by:

- Showing the project film during the trailers section of movie showings at the Oban Phoenix independent cinema;
- Hosting drop-in sessions where we invited Oban residents to pop in and chat to the project team about the testing;
- Sponsoring the Oban Winter Festival
- Putting on two events in the town – a cookery demonstration show ('Cooking with Gas') and a children's science show.

SGN sponsored the Oban Winter Festival, as part of our ongoing engagement with the Oban community. As part of this, two events were chosen to showcase the project and explain how it will affect Oban customers. The 'Cooking with Gas' event included a cookery demonstration with chef Nigel Brown, who cooked using local produce on the test gas, allowing residents the opportunity to see that the gas used during the trial will operate identically to the existing gas the customers are used to. The event was well attended and received excellent feedback from attendees. There are provisional plans to host a similar event in 2015.

FIG 2 – 'Cooking with Gas' event at the Oban Winter Festival

The project team held drop-in sessions for Oban customers to come along and discuss how the project would impact them and to explain its purpose and plan. These sessions were publicised via the local radio station, in the local newspaper and online – and were well attended, receiving positive feedback from those who came.

FIG 3 – Innovation and New Technology Manager, Angus McIntosh, presents about the project to drop-in attendees

The project film was shown in the Oban Phoenix Cinema for the month of October to publicise the upcoming appliance testing phase to the gas customers and other residents of Oban. During the period that the project film was shown on the big screen, it was seen by over 2,500 people.

FIG 4 – Oban Phoenix Cinema; where the project film was shown to over 2,500 people across October

During stage 1 of the project, we were given feedback from customers on how to improve our engagement for stage 2. Below explains what these were and how they were acted upon in Stage 2:

- *Offer customers the opportunity to select their own appointment time;*

Appointment times were offered across three separate time spans – with morning (9am – 11am), afternoon (1pm – 4pm) and evening (6pm – 8pm) appointments available. This was done to increase the likelihood of access to properties, based on the results of the appliance survey in Stage 1. If the timeslot and/or date allocated to the customer is not suitable then they are given the option to contact SGN to choose a more convenient time and/or date.

- *Offer more evening appointments;*

Appointments from 6pm until 8pm are available from Monday - Thursday.

- *Make the appointment time prominent in the letter;*

The appointment time was written twice in the letter, both times in bold lettering. We ensured that the date and time was visible in the envelope window (where the customer address is shown) to prompt the customer to open the letter.

- *Address letters to customers by name;*

We made considerable efforts to obtain as many customer details as possible, in accordance with Data Protection strategy, to ensure that where possible letters were addressed to the customer by name, rather than just addressed to 'The Occupier'. This included using Experian and engaging with Argyll & Bute Council and local housing associations who in some instances have sent the letter on our behalf.

3.2 Outlook for next six months

The next Project Progress Report is due on 18 June 2015. The high level objectives for the next six months are:

- GS(M)R exemption granted by HSE.
- Installation of gas chromatograph in Thurso.
- Completion of testing within all phases of Stage 2.
- Injection of trial gas from Zeebrugge.
- Report completed of the Quantified Risk Assessment.

There is one report due for Ofgem submission in the next six months:

- Submission of SDRC-6 – 'Construction and Installation of Required Site Infrastructure.'

4. Business Case Update

Dependent upon the result of the pending Change Request to amend the budget within cost categories, there may be change to the Cost/Benefit Analysis for the micro roll-out of the project in Oban. Approval of the Change Request would marginally reduce the overall benefit to be achieved to £900,000 per annum[3] upon full roll-out in Oban.

The Change Request does not impact the Cost/Benefit Analysis for the proposed macro roll-out of the project across GB, which is retained at c.£60m per annum should the road map that this project demonstrates be put in place.

5. Progress against Plan

The following summary outlines the progress to date for each objective within the Project Plan that has taken place during the previous six months of the project. The updated version of the Project Plan is contained at Appendix 2.

5.1 Prepare and Submit Customer Engagement Plan

The second iteration of the Customer Engagement Plan was submitted to Ofgem on 27th June 2014 and approved on 15th September 2014. This version documented the project's plans to engage with customers throughout the in-situ testing stage, whereby every gas consumer in Oban will be contacted.

A key part of the Customer Engagement Plan 2 was the procedure for engaging with vulnerable and priority service customers. This has been a process of working closely with the local Housing Associations and the council, who have assisted in helping contact customers and explain the project.

The customer engagement that has taken place in the last six months has included the appointment letters sent to customers to advise them of their testing appointment date/time, leaflets to accompany this letter, flyers advertising the Winter Festival events,

[3] Appendix 3 - The revised micro Cost/Benefit Analysis for Oban.

invitations to these events, the project film shown online and in the Oban Phoenix cinema[4] and the drop-in session posters. A selection of the aforementioned correspondence is shown below:

FIG 5 – Leaflets for engagement events and to inform customers

5.2 Establish base at Oban

The project team now have a permanent base in Oban, within the gates of the Oban depot. The base is made up of a portakabin office, complete with internet and phone access, and a

[4] Film can be viewed on the project website (www.sgn.co.uk/oban) or on YouTube (www.youtube.com/watch?v=psgnzwgfjSc)

separate storage container to hold the buffer stock of appliances, parts and other associated project equipment.

The base is occupied during working hours Monday to Friday, by a member of the project team.

5.3 Commencement of the Appliance Testing Stage (Stage 2)

The start date of Stage 2 of the project was delayed by approximately 10 weeks, as a result of a Change Request submitted by SGN, as detailed in section 3 of this document.

The appliance testing began on 3rd November, with the Oban gas population split across six phases[5].

To date:

- **192** properties have been accessed;
- **324** individual appliances have been tested;
- **14** appliance services, **8** vent installations and **7** appliance replacements.
- **9%** remedial work required on services

All the replacements have been due to pre-existing problems that our engineers have uncovered during the tests. The information above is summarised in the table and graph below:

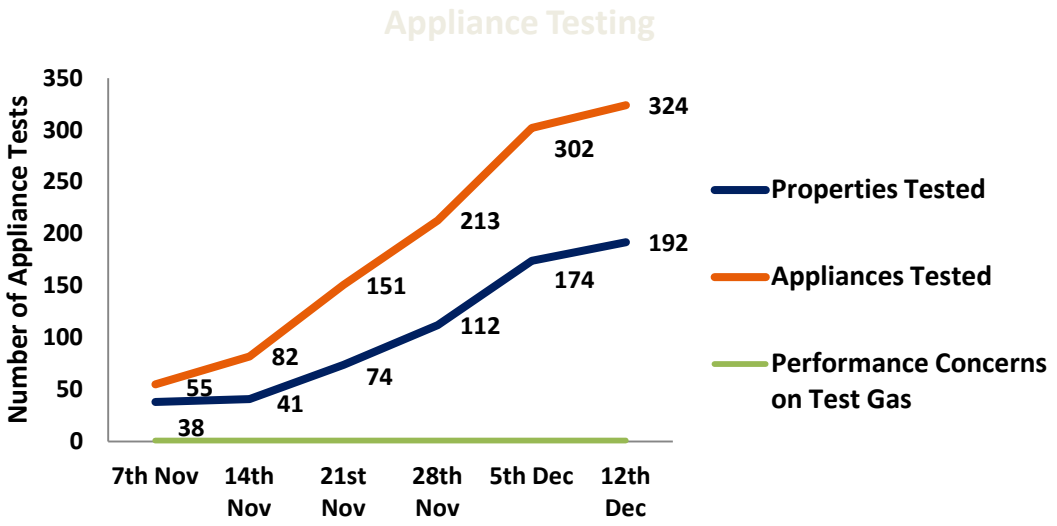
TABLE 3 – Appliance Testing issue report

Service Required	Ventilation Issues	Replaced Appliance *	Gas or Appliance Cut Off	New Parts Required	Flue Issues	Tightness Test Issues	Faulty ECV/Regulator
14	8	7	4	4	3	1	1

* All replacement appliances are due to pre-existing uncovered faults with the appliance, NOT because of non-compliance with the test gases.

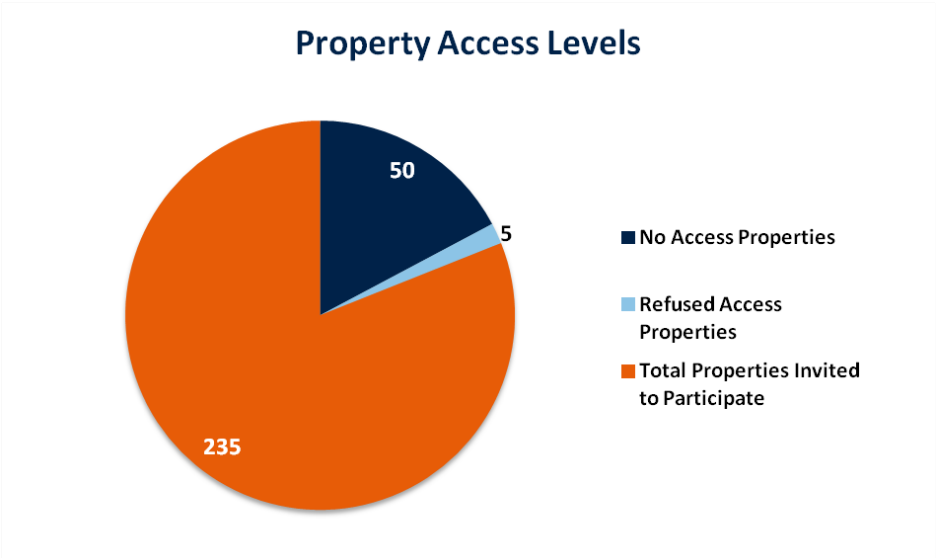
[5] Appendix 4 – Phase map of Oban showing phase locations and testing dates.

GRAPH 1 – Appliance Testing summary



To date no appliances have required replacement due solely to performance on the test gas. Test results have indicated that although CO does increase with WI, there is likely to be no material increase in risk below 52.9/53Mj/m³.

GRAPH 2 – Appliance Testing access summary



The above chart displays 17% no access at first attempt. This is considered to be very good, with the reason for such a low no access rate due to the process in place for managing such properties:

- Those properties that don't answer at their scheduled appointment time are left a 'sorry we missed you' card with details of how to re-schedule.
- The engineers will attempt to re-visit these properties during down time to arrange a new appointment.
- Any remaining properties are moved to the bottom of the list to visit later in the appointment calendar.

The five refused access properties that we have had to date were all customers who claimed not to have received their appointment letter, and the time we called was inconvenient.

These customers confirmed that they would be happy to be contacted again later in the year.

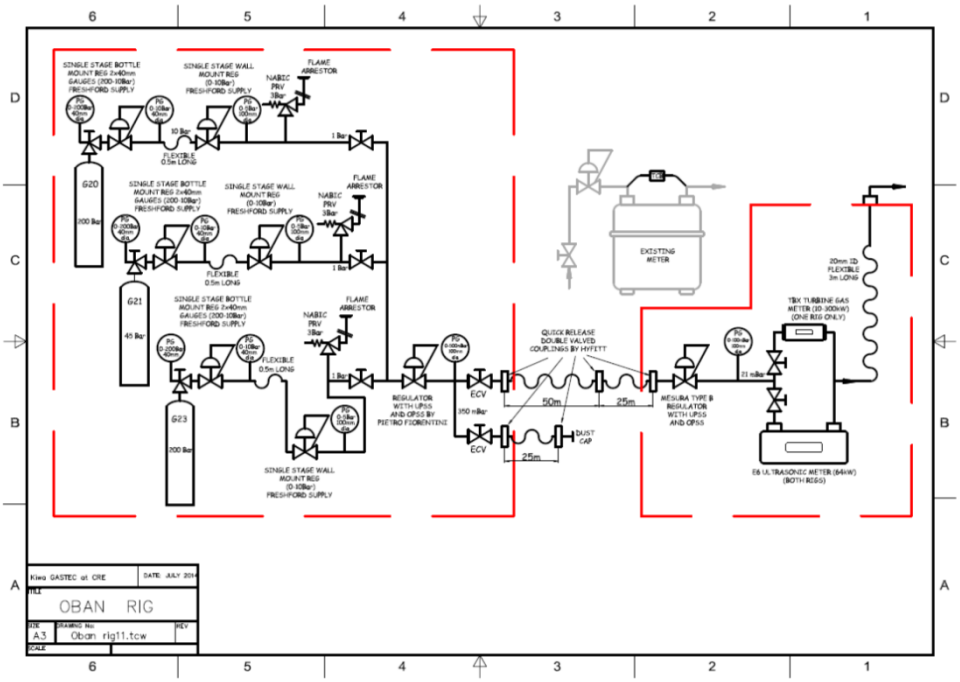
5.4 Develop house-to-house testing kit

Project partners Kiwa Gastec have created two testing rigs for use during the house-to-house testing (fig 1 below).

FIG 6 – Testing Kit on trailer attached to SGN van

The rigs include the 3 gas types; G20, G21 and G23, with a hose connecting to each that can be wound out of the trailer and connected to the meter rig, which is temporarily installed to replace the property meter. Fig 8 below shows the blueprint of the rig and the set-up involved. Fig 9 below shows the meter rig, while Fig 10 shows the hoses and Fig 11 shows the testing set-up. Graph 3 shows the Wobbe Index range and where on this range the three test gases lie.

FIG 7 – Blueprint of the Test Rig



The test rig operates by having one engineer inside the rig operating the gas canisters while his partner engineer is inside the property operating the appliances. The two communicate using walkie-talkies.

FIG 8 – Meter rig, for connection between testing kit and customer property

The meter rig replaces the customer's existing gas meter during the testing. The meter rig is used during the testing of all appliances and then, following the purging of the gas, the customer's meter is safely re-fitted.

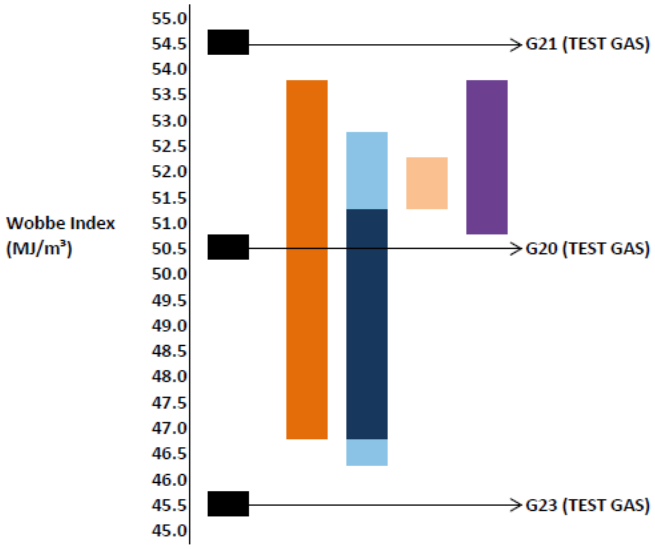
FIG 9 – Hose rigging inside testing kit

The hose connects the gas canisters to the meter rig.

FIG 10 – Testing set-up

This still image from the project film shows the rig connected to the property. It explains that three test gases will be used and that there will be one engineer operating the rig and one inside the customer's property.

GRAPH 3 – Gas Wobbe Index chart



	LOW	HIGH
EASEE-GAS	47	54
GS(M)R	47.2	51.4
EMERGENCY LIMITS	46.5	52.85
ZEEBRUGEE (TYPICAL)	51.41	52.5
LNGS (TYPICAL)	51	54

The chart above shows the location of the three test gases on the Wobbe Index, also showing where they lie in relation to EASEE gas and GS(M)R limits.

5.6 Laboratory Testing of Appliances

In addition to the design and build of the testing rig, project partners Kiwa Gastec have also been carrying out the laboratory testing of appliances from Stage 1 of the project. The results of these tests are contained at Appendix 7 of this document.

FIG 11 – Examples of appliances tested at Kiwa Gastec laboratory

Laboratory tests carried out on test limit gas G21 (of Wobbe 54.7MJ/m^3) identified only extremely modest upward effects on the risks posed by cookers and gas fires and readily manageable upward risks from boilers. It is the considered opinion of Kiwa Gastec that if the upper Wobbe Index of the distributed gas was increased to approximately 53.0 MJ/m^3 (a value close to the GS(M)R emergency limit) these risks are further mitigated (and also gives a Wobbe head room of 1.7MJ/m^3 between the distributed gas and G21). Any appliance tested

at this Wobbe index is likely to operate acceptably and comply with performance requirements in BS/EN standards or GASSAFE action limits.

During the initial house to house investigations 100 properties were visited and 8 installations were found that to be infringing UK installation regulations. These were all subsequently rectified. Of the 8 infringing installations, two properties were identified where engineering judgement would lead us to be believe there was an immediate, significant risk of CO causing ill health; these have both been completely addressed. One was a pre C grill dating from the 1950s (high levels of CO in operation) and in the other, the side glass of a glass fronted live fuel effect appliance was broken (spillage of combustion products into living space).

In light of the work package planned for Oban, Kiwa Gastec were happy for the project to proceed.

5.7 Procurement and Replacement of Appliances

SGN has built relationships with appliance suppliers in order to ensure there is a set process to procure appliances as and when required for customers.

Where possible we have opted to use local external gas safe engineers in Oban to carry out ad hoc appliance work arising throughout the project, contributing to our community engagement.

To date, we have installed **7** replacement appliances, out of **302** appliances tested, a replacement rate of **2.3%**.

A small buffer stock of replacement appliances has been purchased in advance, to minimise customer waiting time and reduce the risk of leaving a customer without cooking or heating facilities. The buffer stock consists of popular, standard sized appliances kept in storage in Oban. This allows us to offer the customer the option of replacing their appliance with a new one on the same day. It also means where the customer chooses an appliances with a lengthy delivery time, we can install an appliance temporarily to cover the time between removal of the faulty appliance and installation of the customer's preferred replacement.

6. Progress against Budget

Project expenditure is within the budget defined in the Project Direction. The table below details expenditure against the project budget and compares this with planned expenditure to date. Projected variance is also listed, though at present this is **-33%** due to the pending outcome of the Change Request which will transfer funds between categories if approved.

TABLE 5 – Budget progress report

					Projected variance (at project conclusion)	
	Task	Budget (£000s)	Expenditure ITD (£000s)	Comparison with expected expenditure (%)	(£000s)	%
See note				*1 (see below)*	*2 (see below)*	
LABOUR		266	31.9	-20.3%	0	0.0%
Agree Trial protocols	1.5	10	11.6	16.0%	0	0.0%
Other tasks	Other	256	20.3	0.0%	0	0.0%
EQUIPMENT	All	1123	17.15	0.715	0	0.0%
CONTRACTORS		471	71.395	-8.5%	-5	-33.3%
Review Previous studies	1.1	15	10.1	1.0%	0	0.0%
Appliance Population survey	1.2	155	61.295	-5.7%	0	0.0%
Other tasks	Other	301	0	0.0%	-5	-33.3%
TRAVEL AND EXPENSES		12	1.5	-10.0%	0	0.0%
Agree Trial protocols	1.5	8	1.5	-10.0%	0	0.0%
Other tasks	Other	4	0	0.0%	0	0.0%
PAYMENTS TO USERS	All	15	0	0	0	0.0%
OTHER	All	235	0	0.0%	0	0.0%
TOTAL		**2122**	**121.945**	**42.8%**	**-5**	**-33.3%**

1 – Actual expenditure to date is compared with phased projected spend over the same period.
2 – Projected expenditure is currently forecast to the existing budget. This is subject to change pending the outcome of the Change Request mentioned in section 3.

7. Bank Account

Appendix 6 provides details of the latest statement from the Project Bank Account.

8. Successful Delivery Reward Criteria (SDRC)

SDRC-3 – *'Agreement of Trials with HSE, DECC & Ofgem*' has been completed and submitted to Ofgem in full and on schedule on 18th July. SDRC-1 – *'Establish supply chain and shipping arrangements for LNG'* has been completed and submitted to Ofgem on 29th September.

SGN is on track to complete SDRC-6 and SDRC-4 (the next two due for submission) by their agreed delivery dates. A summary of SDRCs is provided below:

TABLE 6 – SDRC completion summary

SDRC No	SDRC	Delivery Date	Status
1	Establish supply chain and shipping arrangements for LNG	29 September 2014	Completed
2	Carry out Quantified Risk Assessment	26 June 2015	On Target
3	Agreement of Trials with HSE, DECC & Ofgem	18 July 2014	Completed
4	Testing of all affected appliances	12 June 2015	On Target
5	Procurement and installation of replacement appliances	24 July 2015	On Target
6	Construction and installation of required site infrastructure	30 April 2015	On Target
7	Successful completion of field trial	14 June 2016	On Target
8	Successful completion of Knowledge Dissemination task	5 August 2016	On Target

9. Learning Outcomes

The learning outcomes for this project were contained in section 2.1 of the full submission. These are all overall learning outcomes that are to be achieved across the length of the project. The table overleaf provides details of these and the progress against them to date.

Learning Objective	Comments	Status
To demonstrate that gas which meets EASEE Gas specification but sits outside GS(M)R can be conveyed safely and efficiently in the GB gas network	• Review of previous work report by Dave Lander • Laboratory tests by Kiwa Gastec on selected appliances • In-situ appliance testing • Year-long trial	• Completed • In process • Starts 2015
To demonstrate that all GAD compliant gas appliances are capable of safely and efficiently burning gas which meets EASEE gas specifications but sits outside GS(M)R	• Review of previous work report by Dave Lander • Laboratory tests by Kiwa Gastec on selected appliances • In-situ appliance testing	• Completed • Completed • In process
To establish the proportion of older gas appliances that constrict gas quality specification in GB through assessment of a representative appliance sample from the Oban network	• Quantified risk assessment to be completed • In-situ appliance testing	• Starts 2015 • In process
To demonstrate through the sample population what is required to ensure GB's appliance population is capable of operating safely and efficiently over a wider range of gas quality	• Quantified risk assessment to be completed • In-situ appliance testing	• Starts 2015 • In process
To identify and record all types/makes of gas appliances, identified through the representative appliance sample from the Oban network that are not fit for operation using gas which meets EASEE gas specifications but outside GS(M)R	• Laboratory tests by Kiwa Gastec on selected appliances • In-situ appliance testing	• Completed • In process
To capture and record all project learning to assist in a full GB roll out in the future	• All reports and results from Stage 1 of the project have been recorded. Updates will be provided in written form through reporting, via the project website and through presentations at dissemination events.	Ongoing
To compile a project completion report assessing the technical and commercial viability of accepting EASEE compliant gas in GB	• Full results of this will follow the completion of the year long trial.	Ongoing
To compile a list of appliances found to be incompatible which will be shared among all relevant stakeholders	• Laboratory tests by Kiwa Gastec on selected appliances • In-situ appliance testing	• Completed • In process

10. IPR

There has been no IPR registered during the six month reporting period. All published documents are copyright of SGN.

11. Risk Management

The table contained in the appendices[6] provides an update of the project Risk Register report on the risks highlighted in the full submission, with each risk rated in terms of its impact and likelihood.

12. Other

SGN has undertaken a company-wide rebrand during the latest six month period. This rebrand included a new company logo, website and colour palette. As part of this, the SGN vans were rebranded with the new logo and colours to align with the new brand guidelines. The OGM logo was also changed to align with this, and is now visible on all OGM documents, including this one. To harmonise the brand change in Oban, the OGM project ensured that the vans there were among the first to display the new branding, to avoid changes part way through the major stages of the project and cause customer confusion. All customer correspondence now incorporates the new branding. The new Opening up the Gas Market logo, which incorporates the new SGN logo, is below:

13. Accuracy Assurance Statement

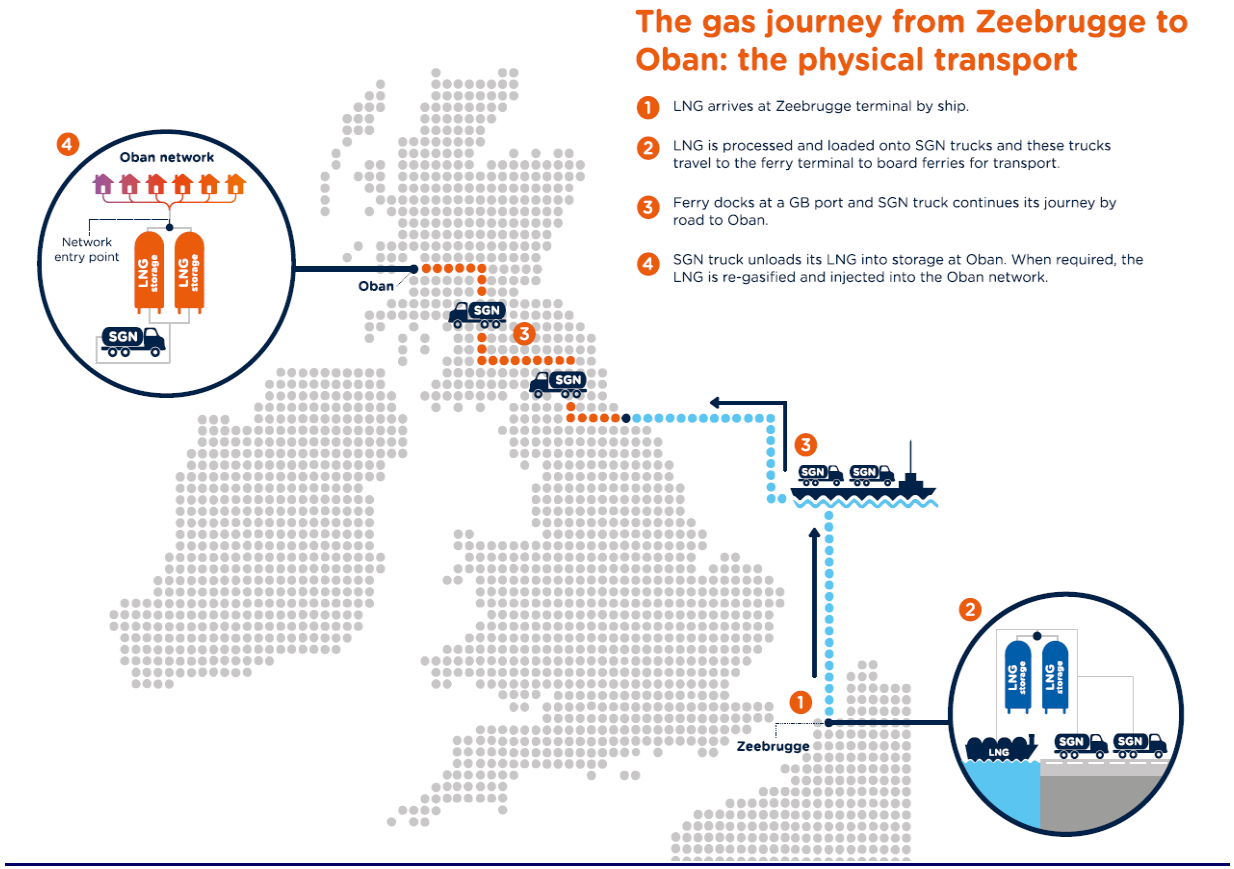
This report, as with all reports created by the project team for submission to Ofgem, has been through a rigorous authenticity and accuracy process to comply with the project governance document.

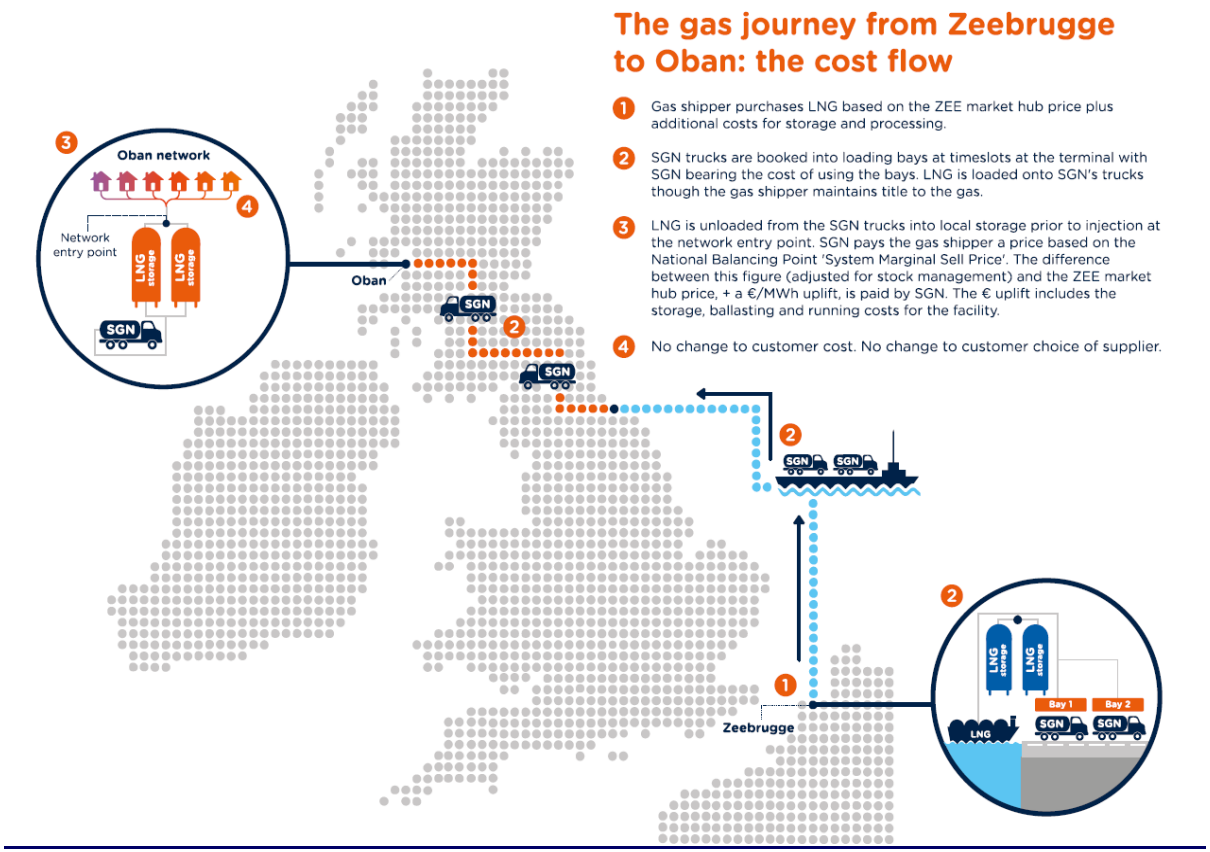
The document has been approved by the Project Manager, Project Director and SGN's internal regulation department.

[6] Appendix 5 – 'Risk Register'

14. Appendices

Appendix 1 – Diagrams to represent Physical Transport of LNG and Cost Flow in Stage 3




The gas journey from Zeebrugge to Oban: the cost flow
1 Gas shipper purchases LNG based on the ZEE market hub price plus additional costs for storage and processing.
2 SGN trucks are booked into loading bays at timeslots at the terminal with SGN bearing the cost of using the bays. LNG is loaded onto SGN's trucks though the gas shipper maintains title to the gas.
3 LNG is unloaded from the SGN trucks into local storage prior to injection at the network entry point. SGN pays the gas shipper a price based on the National Balancing Point 'System Marginal Sell Price'. The difference between this figure (adjusted for stock management) and the ZEE market hub price, + a €/MWh uplift, is paid by SGN. The € uplift includes the storage, ballasting and running costs for the facility.
4 No change to customer cost. No change to customer choice of supplier.
Oban network
Network entry point
LNG storage
LNG storage
SGN
Oban
Zeebrugge
Bay 1
Bay 2
LNG

Appendix 2 – Project Plan

Attached separately

Appendix 3 - Cost Benefit Analysis for Project Micro Rollout

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
No of households in Oban (inc. predicted growth)	1104	1104	1104	1104	1106	1108	1110	1112	1114	1116	1118	1120	1122	1124	1126	1128	1130	1130	1130	1136	1144
LNG Demand (Tonnes)	2134.4	2134.4	2134.4	2134.4	2138.3	2142.1	2146.0	2149.9	2153.7	2157.6	2161.5	2165.3	2169.2	2173.1	2176.9	2180.8	2184.7	2184.7	2184.7	2196.3	2211.7
Cost of Capital	4.85%																				

Business As Usual

Cost Component

LNG Storage & Loading (C3 Prices) at Avonmouth	£0	£1,494,090	£1,494,090	£1,494,090	£1,496,797	£1,499,503	£1,502,210	£1,504,917	£1,507,623	£1,510,330	£1,513,037	£1,515,743	£1,518,450	£1,521,157	£1,523,864	£1,526,570	£1,529,277	£1,529,277	£1,529,277	£1,537,397	£1,548,224
LNG Haulage from Avonmouth	£0	£256,130	£256,130	£256,130	£256,594	£257,058	£257,522	£257,986	£258,450	£258,914	£259,378	£259,842	£260,306	£260,770	£261,234	£261,698	£262,162	£262,162	£262,162	£263,554	£265,410
Total Cost	£0	£1,750,220	£1,750,220	£1,750,220	£1,753,390	£1,756,561	£1,759,732	£1,762,902	£1,766,073	£1,769,244	£1,772,415	£1,775,585	£1,778,756	£1,781,927	£1,785,097	£1,788,268	£1,791,439	£1,791,439	£1,791,439	£1,800,951	£1,813,633
£/Household	**£0.00**	**£1,585.34**	**£1,585.34**	**£1,585.34**	**£1,585.34**	**£1,585.34**	**£1,585.34**	**£1,585.34**	**£1,585.34**	**£1,585.34**	**£1,585.34**	**£1,585.34**	**£1,585.34**	**£1,585.34**	**£1,585.34**	**£1,585.34**	**£1,585.34**	**£1,585.34**	**£1,585.34**	**£1,585.34**	**£1,585.34**

Proposed Method

Cost Component

Initial cost																					
Infrastructure	£538,000																				
Appliances	£966,000																				
Procurement and installation	£576,840																				
Testing and survey	£389,160																				
Other (inc stakeholder engagement)	£124,216																				
LNG Storage & Loading (C3 Prices) at Avonmouth	£0	£1,494,090	£1,494,090	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0
LNG Shipping Contract	£0	£260,000	£260,000	£260,000	£260,000	£260,000	£260,000	£260,000	£260,000	£260,000	£260,000	£260,000	£260,000	£260,000	£260,000	£260,000	£260,000	£260,000	£260,000	£260,000	£260,000
LNG Loading at Zebrugge	£0	£106,721	£106,721	£106,721	£106,914	£107,107	£107,301	£107,494	£107,687	£107,881	£108,074	£108,267	£108,461	£108,654	£108,847	£109,041	£109,234	£109,234	£109,234	£109,814	£110,587
LNG Haulage from Zebrugge	£0	£426,883	£426,883	£426,883	£427,656	£428,430	£429,203	£429,976	£430,750	£431,523	£432,296	£433,070	£433,843	£434,616	£435,390	£436,163	£436,936	£436,936	£436,936	£439,256	£442,350
Total Cost - replacement of 40% of appliances	£1,628,216	£2,287,694	£2,287,694	£793,604	£794,570	£795,537	£796,504	£797,470	£798,437	£799,404	£800,370	£801,337	£802,304	£803,270	£804,237	£805,204	£806,170	£806,170	£806,170	£809,070	£812,937
£/Household @ 40% replacement	**£1,475**	**£2,072**	**£2,072**	**£719**	**£718**	**£718**	**£718**	**£717**	**£717**	**£716**	**£716**	**£715**	**£715**	**£715**	**£714**	**£714**	**£713**	**£713**	**£713**	**£712**	**£711**
Total Cost - replacement of 20% of appliances	£1,339,796	£2,287,694	£2,287,694	£793,604	£794,570	£795,537	£796,504	£797,470	£798,437	£799,404	£800,370	£801,337	£802,304	£803,270	£804,237	£805,204	£806,170	£806,170	£806,170	£809,070	£812,937
£/Household @ 20% replacement	**£1,214**	**£2,072**	**£2,072**	**£719**	**£718**	**£718**	**£718**	**£717**	**£717**	**£716**	**£716**	**£715**	**£715**	**£715**	**£714**	**£714**	**£713**	**£713**	**£713**	**£712**	**£711**
Total Cost - replacement of 5% of appliances	£1,123,481	£2,287,694	£2,287,694	£793,604	£794,570	£795,537	£796,504	£797,470	£798,437	£799,404	£800,370	£801,337	£802,304	£803,270	£804,237	£805,204	£806,170	£806,170	£806,170	£809,070	£812,937
£/Household @ 5% replacement	**£1,018**	**£2,072**	**£2,072**	**£719**	**£718**	**£718**	**£718**	**£717**	**£717**	**£716**	**£716**	**£715**	**£715**	**£715**	**£714**	**£714**	**£713**	**£713**	**£713**	**£712**	**£711**
Cost savings per household @ 40% replacement vs BAU		**-£486.84**	**-£486.84**	**£866.50**	**£866.93**	**£867.35**	**£867.77**	**£868.19**	**£868.61**	**£869.03**	**£869.45**	**£869.86**	**£870.28**	**£870.69**	**£871.10**	**£871.51**	**£871.92**	**£871.92**	**£871.92**	**£873.13**	**£874.73**
NPV		**£386.54**	**£571.68**	**£543.96**	**£517.67**	**£492.65**	**£468.85**	**£446.19**	**£424.63**	**£404.10**	**£384.57**	**£365.99**	**£348.30**	**£331.47**	**£315.45**	**£300.20**	**£285.69**	**£271.83**	**£258.65**	**£246.24**	**£234.45**

Overall confidence range

Net Finacial Benefit PA =	Base Case	-	Method Cost (after proved successful)
=	£1,750,220	-	£793,604
=	**£956,616**		

Appendix 4 – Phase Map of Oban

Attached separately

Appendix 5 – Risk Register

Attached separately

Appendix 6 – Project Bank Account Statements

BARCLAYS

Account Statement

Printed On:05/12/2014 09:14

Search Criteria:
Account Number: [redacted] Statement Date: Absolute From: 16/06/2014 To: 29/08/2014
Search Result

Account Number	Account Name	Currency	Account Type / Status
[redacted]	[redacted]	GBP	Deposit / OPEN
IBAN	**Bank Identifier**	**Bank Name**	
[redacted]	[redacted]	BARCLAYS BANK PL	

Address
Leicester,Leicestershire,UNITED KIN , LE87,2BB

Opening Ledger	Total Payment Amount/Payment Count	Total Receipt Amount/Receipt Count	Transaction Count	Latest / Closing Ledger
393,875.46 As At: 16/06/2014	N/A/0	466,452.00/3	3	860,327.46 As At: 29/08/2014

	Entry Date	Transaction Details	Transaction Type	Payment Amount	Receipt Amount	Ledger Balance
		Balance Brought Forward				393,875.46
	01/07/2014	SCOTLAND GAS NET * 004745* * TFR	Transfer		155,484.00	549,359.46
	01/08/2014	SCOTLAND GAS NET * 004358* * TFR	Transfer		155,484.00	704,843.46
	15/08/2014	SCOTLAND GAS NET * 844902*/RFB/CLMSW* TFR	Transfer		155,484.00	860,327.46
		Balance Carried Forward				860,327.46

BARCLAYS

Account Statement

Printed On:05/12/2014 09:17

Search Criteria:
Account Number: [redacted] Statement Date: Absolute From: 01/09/2014 To: 02/12/2014
Search Result

Account Number	Account Name	Currency	Account Type / Status
[redacted]	[redacted]	GBP	Deposit / OPEN
IBAN	**Bank Identifier**	**Bank Name**	
[redacted]	[redacted]	BARCLAYS BANK PL	

Address
Leicester,Leicestershire,UNITED KIN , LE87,2BB

Opening Ledger	Total Payment Amount/Payment Count	Total Receipt Amount/Receipt Count	Transaction Count	Latest / Closing Ledger
860,327.46 As At: 01/09/2014	67,064.05/3	466,634.67/5	8	1,259,898.08 As At: 02/12/2014

	Entry Date	Transaction Details	Transaction Type	Payment Amount	Receipt Amount	Ledger Balance
		Balance Brought Forward				860,327.46
	08/09/2014	INTEREST PAID GROSS FOR PERIOD 2JUN/ 7SEP	Credit		79.84	860,407.30
	15/09/2014	SCOTLAND GAS NET * 865826"/RFB/CLMSW" TFR	Transfer		155,484.00	1,015,891.30
	30/09/2014	947589"CLM"2000008 3192563 TFR	Transfer	1,051.87		1,014,839.43
	15/10/2014	SCOTLAND GAS NET * 851924"/RFB/CLMSW" TFR	Transfer		155,484.00	1,170,323.43
	17/11/2014	SCOTLAND GAS NET * 866309"/RFB/CLMSW" TFR	Transfer		155,484.00	1,325,807.43
	25/11/2014	INTEREST REFUND LSC10 XT	Advice		102.83	1,325,910.26
	28/11/2014	CLMSWP1700340115 * 983353"OGS ACCOUN" TFR	Transfer	43,901.87		1,282,008.39
	02/12/2014	CLMSWP1700064856 * 865881"OGS ACCOUN" TFR	Transfer	22,110.31		1,259,898.08
		Balance Carried Forward				1,259,898.08

Appendix 7 – Kiwa Gastec laboratory testing reports

Attached separately:

30254/1 - The Effect of Wobbe Index on the Combustion Performance of Combination Boilers with Adjustable Gas-Air Ratio Controls (DRAFT FORM)

30254/2 - Assessment of the Combustion Performance of a Domestic Grill with Gases of Varying Wobbe Index in a Room with and Without Purpose Provided Ventilation

30254/3 - Effect of Gas Wobbe Index on the Atmospheric Device Performance of the Flavel Diamond HE Local Space Heating Appliance

30254/4 - Effect of Gas Wobbe Index on the Performance of a Main Richmond 2 Local Space Heater and Identification of the Risks Posed by the Spillage of Combustion Products from It