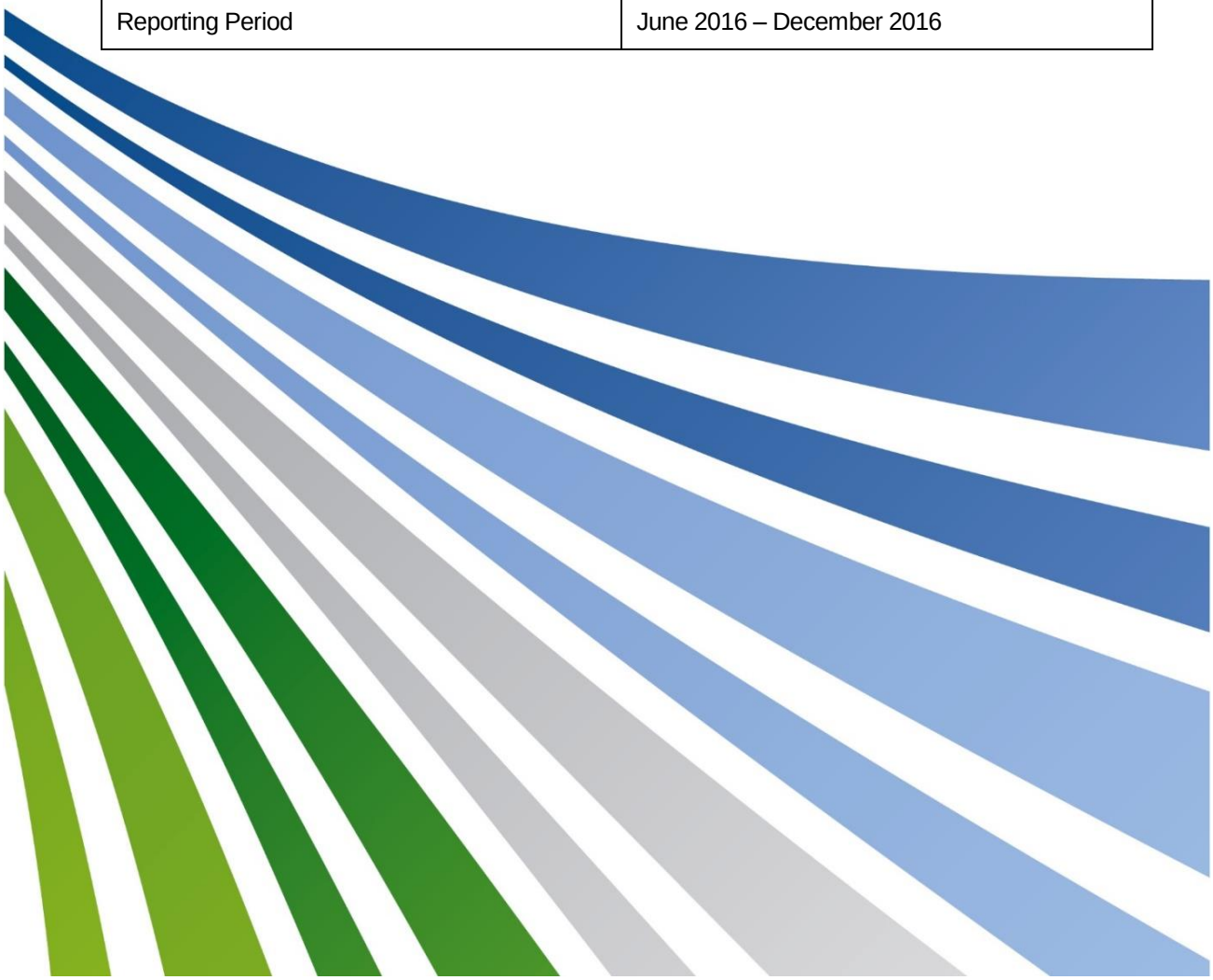
Scottish & Southern Electricity Networks

SAVE

Solent Achieving Value from Efficiency

SAVE (Solent Achieving Value from Efficiency) Project Progress Report

Project Number	SSET206
DNO	Southern Electric Power Distribution Ltd
Reporting Period	June 2016 – December 2016



University of Southampton

DNV·GL

Neighbourhood Economics

Future Solent

Scottish and Southern Electricity Networks (SSEN) is the new trading name of Scottish and Southern Energy Power Distribution (SSEPD), the parent company of Southern Electricity Power Distribution (SEPD), Scottish Hydro Electricity Power Distribution (SHEPD) and Scottish Hydro Electricity Transmission. SEPD remains the contracted delivery body for this LCNF Project.

Document Owner(s)	Project/Organisation Role
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Version Control

Version	Date	Authors	Change Description
0.1	13/12/16	Alex Howison	Initial draft for review
0.2	14/12/16	Alex Howison	Revised draft for review

1 Executive Summary

Ofgem guidance: Executive Summary (This section should be no more than 4 pages) this section should be able to stand alone and provide a clear overview of the project's progress and any significant issues over the last period. All stakeholders, including those not directly involved in the project, should be able to have a clear picture of the progress. The DNO should describe the general progress of the project and include any notable milestones or deliverables achieved in the period. The Executive Summary should also contain two subsections: one for the key risks and one for the learning outcomes.

The SAVE (Solent Achieving Value from Efficiency) project is a £10.3m project which is primarily funded by Ofgem's Low Carbon Networks (LCN) Fund, aiming to assess the use of energy efficiency measures as an alternative to traditional reinforcement. The Project will involve a cross-section of domestic customers which are representative of much of the UK. Organisations partnering with Southern Electric Power Distribution (SEPD) to manage and deliver the Project include the University of Southampton (UoS), Future Solent, Neighbourhood Economics Ltd (NEL) and DNV GL. The Project will involve approximately 8,000 customers across 4 trial interventions: using media campaigns linked to the electrical consumption of individual households; adding a financial incentive to these campaigns; deploying LED lighting; and using community energy coaches.

At the start of this reporting period Ofgem approved the Formal Change Request CR-02 which detailed the need for an extension of the project, change of equipment and a re-structure of the project budget. These actions were proposed following the loss to the Project of Project partner Maingate Enterprise Solutions in the previous reporting period and the required replacement of household monitoring across the project population of 3,983 participants. The approval instigated the reinstallation of household monitoring across the project population while the project continued trial design works for interventions 1-3, and live trials in intervention 4.

Re-installation activities have continued throughout the reporting period, with the process adapted in response to learning provided by the pilot and participant feedback. Changes include the addition of an initial telephone call to the participant, following the letter explaining the need to replace equipment, and an extension of the period between initial notification and equipment mailing. Analysis also identified a communications issue with the SIM enabled units installed for participants with no home broadband or available connection. While this only affects a small proportion of the sample, the project has applied updates and mitigation against this issue with positive results expected before January 2017.

At time of reporting, a total of 3,346 monitors have been installed, the randomised allocation ensuring all trial intervention groups are equally populated for the commencement of live trials in January 2017. Participant self-installation has also proven successful, with 31% of all installations occurring with no site support from the project. While strong progress has been made throughout, attrition levels have been higher than expected and the project now plans to continue recruitment and reinstallation activities into January to ensure the project population reaches a minimum of 4,250 participants.

Concurrently, the team has progressed with materials and plans for the trial interventions which will be utilised within the first live trial period, January to March 2017. DNV GL with support from SSEN and Behaviour Change, the NFP Social organisation providing behavioural change expertise, have created the messaging and engagement materials for interventions 2 and 3 for the first live trial period (TP1). The materials, designed for postal mailing, email and system notifications through the household monitors user interface, encourage participants to review and adjust their consumption, using a 'Networks' perspective on peak demand periods as a behavioural change driver.

DNV GL and SSEN have progressed the procurement of an LED supplier and the trial parameters for Price Signalling. With support from SSEN procurement the Project produced a set of requirements for LED supply and ancillary service provision enabling live trials for this intervention group. It was a key aim of the process that the Project was able to contract with one supplier, able to respond to all of the requirements across live trial periods which was also deemed the process most transferable to a BAU rollout of this intervention. For the Price Signalling intervention group the project will utilise 'event' days, seeking demand response from participants within a specific period of time and will reward successful reduction with high street vouchers.

Over the reporting period NEL have continued to lead the Community Energy Coaches from Winchester Action against Climate Change (WINACC) in Kings Worthy and the Environment Centre (tEC) in Shirley Warren. Building on successful engagement within the first live trial period for intervention 4 (Jan-Mar 2016), each community now has a specific strategy for engagement which combines the localised, community driven agendas with the SAVE objective of increased energy efficiency and a reduction in localised demand.

Analysis on the baseline monitoring data, supplied by Substation (s/s) monitoring across the control and trial populations has provided insights into the demographic of the trial population and any link this may have with localised consumption. The Project has also installed additional monitoring at LV feeder level to provide more granular data for population groups targeted for focussed engagement and interventions. Surveys, event days and targeted engagements continue to deliver demand reduction messages across both trial area's, in the next reporting period the Project plans to analyse consumption data following these events to measure any related reduction.

To maintain a clear focus on the successful management of the various packages of work, the Project has held six Project Partner Review Board (PPRB) meetings, enabling all partners to meet at least once a month to discuss progress and plan activities. Representatives from Navetas, the new equipment supplier, have attended all PPRBs alongside the Project Partners and Bostock Marketing Group (BMG), the market research company responsible for recruitment and surveying within the reporting period to obtain insight into potential equipment issues and respond to questions on the installation process.

1.1 Risks

Ofgem guidance: The risks section reports on any major risks and/or issues that the DNO encountered, including any risks which had not been previously identified in the Project Direction. The DNO should include a short summary of the risk and how it affects (or might affect) delivering the

Project as described in the full submission. When relevant, the DNO should group these key risks under the following headings:

a. recruitment risks – describe any risks to recruiting the numbers of customers to take part in the Project as described in the full submission and how these will impact on the Project and be mitigated;

b. procurement risks – describe any risks to procuring the equipment and/or services needed for the Project, as described in the full submission, and how these will impact on the Project and be mitigated;

c. installation risks – describe any risks to the installation of the equipment (including in customers' homes, and/or large scale installations on the network) and how these will impact on the Project and be mitigated; and

d. other risks.

Project risk management is considered in detail in section 4 of this report; a high level summary is shown below:

Risk Description	Further details and impact	Controls
Recruitment		
Inability of recruiting the necessary number of customers for the trials across the Solent area.	May not reach the intended numbers deemed necessary. Would make it difficult to observe small changes in behaviour and have confidence that changes are result of interventions, not other factors.	80% of total sample recruited in initial phase, 75% of sample currently participating following reinstallation activities and this continues to grow. Progress checked during weekly calls and process improvements applied when identified.
Break up of Partnership.	Through dispute or disagreement partnership dissolves with one or more partners electing to leave the Project Board.	Contracts in place and regular PPRBs allow for continued proactive contact to highlight any potential issues. Following equipment issue Maingate Enterprise Ltd have left the Project, however other partners remain committed.
Procurement		
None		
Installation		
Monitoring equipment cannot be installed.	May be unable to install equipment, or the equipment may fail to operate correctly and not transmit data back to secure server, impacting on ability to observe and analyse behaviour and impact of interventions.	Current progress and self installation rate of 30% indicate equipment is far simpler to install than initial equipment utilised by the project. .
Failure of equipment and lack of data.		Corrective actions following acceptance of CR-2 mitigated previous equipment issues. TG4 providing learning through live trials, TG's 1, 2 and 3 commencing live trials in January. New equipment functioning correctly across sample and small scale comms issues being corrected.
Equipment faulty and data not available.		
Other		
None		

1.2 Learning Outcomes

Ofgem guidance: The learning section reports on the learning outcomes outlined in the Full Submission. This section should include, but is not limited to:

a. a summary of the key learning outcomes delivered in the period;

b. a short overview of the DNO's overall approach to capturing the learning;

c. the main activities towards third parties which have been undertaken in order to disseminate the learning mentioned in a.; and

d. the DNO's internal dissemination activities.

Please note that these two subsections should only give an overview of the key risks and the main learning. They should not replace the more detailed information contained in the "Learning outcomes" and "Risk management" sections of the progress report.

Learning outcomes are considered in detail in Section 6 of this report, however during this period the main focus has been on setting up the project to ensure successful trials in the future.

Key learning outcomes

There have been no SDRCs completed within this reporting period, and due to the ongoing corrective actions and equipment reinstallation across interventions 1-3 lessons learned have primarily been ad-hoc and process related. These are:

- Adaptation of the recruitment and installation processes to maximise participant uptake and reduce attrition associated with customer response to reinstallation visits.
- The need for field teams to utilise site-specific area based Risk Assessments and lone working practices as suggested by SSEN.
- The value of Smart-meter data to innovations projects when compared to the cost and potential risk of independently sourced alternatives.
- How to encourage corporate commitment to community coaching and business cultural challenges when implementing deferred impact projects.

Approach to learning capture

The approach to learning capture is focussed on capturing both structured learning in the forms of SDRC reports, and unstructured learning via lessons learned reviews and ad-hoc recording of insights. This aims to capture results drawn out from data analysis and reviews of activities, and also tacit knowledge that may not typically be captured in formal documents.

Summary of Third Party targeted dissemination

- Presentation of SAVE design & preliminary data analysis at University of Otago (New Zealand) 'GreenGrid' project workshop July 2016.
- On the 2nd November the Project summarised the SAVE project to representatives of Oxford Universities 'Living Laboratories'.
- On the 4th November the Project presented at the Future South conference in Winchester. The presentation and following panel session reviewed SAVE objectives within the region.
- On the 29th November at the REGENSW Renewable Futures and Green Energy event in Bath, the project presented SAVE as part of the wider SSEN portfolio of Innovations projects.
- On the 30th November the SAVE Project was summarised at the New Thames Valley Vision (NTVV) Projects DNO Roadshow for UKPN in Crawley.
- On the 5th December the SAVE Project presented at the NTVV Customer closedown event held at National Grid's control center in Wokingham.

Summary of internal targeted dissemination

The Project uses organised events such as Steering Boards and Team Briefs as a means of internally disseminating progress and information in a structured manner, with informal communications between colleagues and departments also acting as a means of raising awareness of the Project and progress towards delivering learning.

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2 Project manager's report

Ofgem guidance: The Project manager's report should be a more detailed version of the Executive Summary. This section should describe the progress made in the reporting period against the Project plan. Any key issues should be drawn out and described in detail, including how these issues were managed. The DNO should also include details of deliverables and/or events, referring where necessary to other sections of the PPR. This section should also provide an outlook into the next reporting period, including key planned activities. It should describe any key issues or concerns which the Project manager considers will be a major challenge in the next reporting period.

The initial stage of this reporting period saw the approval of Formal Change Request CR-02 which detailed the need for an extension of the project, change of equipment and a re-structure of the project budget. These actions were proposed following the loss to the Project of Project partner Maingate Enterprise Solutions in the previous reporting period and the required replacement of household monitoring across the project population of 3983. The approval instigated the reinstallation of household monitoring across the project population while the project continued trial design works for interventions 1-3, and live trials in intervention 4.

2.1 Pilot learning and full reinstallation process

The reinstallation of household monitoring across the project population has been a core package of work within this reporting period. The pilot installation of the Navetas Loop Energy Saving monitors was successfully completed in July. The pilot targeted 395 installations and the project successfully installed 302 devices, of which 32% were self installed by participants. A total of 66 participants withdrew from the project during the process, a further 27 did not respond to any communications attempts. Although this did mean that the project suffered a 24% loss of participation through the pilot, it did provide valuable learning points for the full reinstallation process which followed.

The pilot process identified that participants needed additional time to install the equipment post receipt, many having planned to complete the self-installation at a quieter time of the week, i.e. over the weekend. In response to this the project extended the period after mailing equipment from 7 to 10 days before BMG field teams would make contact to arrange installation appointments.

Additional feedback from the pilot identified that although the majority of participants remembered joining the project, a proportion did not link the subsequent equipment mailing to be part of the SAVE project and had not read the initial letter. A small number also linked the project primarily with UoS, as the equipment was mailed by Navetas referencing the SAVE Project this created confusion for some participants. This confusion, combined with the perceived inconvenience of self-installation were the core reasons given by the 17% of the pilot population which chose to opt out following the initial letter, and is likely the cause for the 7% which did not respond to any communication. This was a core concern due to the potential to lose project equipment, in total 44 sets of equipment have not been returned by those participants. To minimise this risk within the full reinstallation plan the project introduced an additional phone call, post initial letter but before equipment mailing, to ensure participants were aware of the reinstallation approach and offering the ability to 'opt-out' before equipment was mailed to them.

The University of Southampton, BMG, DNV GL and SSEN worked collaboratively on the engagement material for the reinstallation process, opting for a balance of information of the reinstallation process, encouragement to remain part of the project and detail on communication links back should any questions arise.

Figure 1. Initial equipment replacement letter

SAVE ENERGY USE RESEARCH STUDY – WE NEED YOUR HELP

<Address 1>
<Address 2>
<Address 3>
<Town>
<County>
<Postcode>

Study ID: <9566XXXXX>

May 2016

Dear householder,

Thank you again for your ongoing participation in this groundbreaking energy study which is enabling us to gather an important picture of how energy is used in homes in the Solent region.

The project team has been analysing the data collected so far and we have identified that a newer, more efficient and more reliable household energy monitor would give us far greater information on energy use. The new device will fit in exactly the same location as the current equipment installed in your property and is very simple to install, taking around 15 minutes.

We will be mailing out this new equipment in 7 days and we need your help.

If you are able to install this equipment please follow the installation steps which will be included in the new equipment pack we send to you. There will also be support details should you need help or advice to install the equipment.

Alternatively please contact us on *(BMG number)* or log in to our webpage at www.bmgresearch.co.uk/projects/energyuse where you can ask any questions or to advise us that you will be unable to install the equipment, we will then contact you once the equipment has been delivered to arrange visit by a member of our team who can install the equipment for you.

Also included in the equipment pack will be a pre-paid envelope to return the original equipment so that we can ensure it is recycled.

We would also like to extend the project by a further year so we can take full advantage of the improved information we will be collecting, this won't need any additional effort from yourselves but we will give you another £5 voucher in the final year.

As a thank you for your ongoing involvement and as a token of our appreciation please find enclosed a £5 high street voucher which is in addition to the vouchers already allocated to you by the project. The next installment of the allocated vouchers will be distributed in early 2017 following the new equipment roll-out and the winter energy survey.

Yours,

p.p. Professor AbuBakr Bahaj
Head of Division, Energy & Climate Change, University of Southampton

This study is being conducted in accordance with the Data Protection Act. This means your personal details will be kept strictly confidential and you and your household will not be identifiable from the data.

If you require a large print copy or other accessible format please contact BMG Research on 0800 358 0337

Arabic:	إذا كنت بحاجة إلى نسخة من هذا الاستبيان بهذه اللغة، يرجاء الاتصال برقم فري فون الوارد في نهاية هذه الصفحة.
Bengali:	যদি আপনি এই ভাষায় এই প্রশ্নাবলীর একটি কপি চান, তাহলে অনুগ্রহ করে পৃষ্ঠার শিচে দেওয়া বিনা মাশুলের টেলিফোন নম্বরে যোগ করুন।
Chinese (traditional):	如果你需要這份調查問卷的中文譯版，請打本頁下方的免費號碼。
Chinese (simplified):	如果你需要这份调查问卷的中文译版，请打本页下方的免费号码。
French:	Si vous souhaitez recevoir une copie de ce questionnaire en français, veuillez contacter le numéro vers situé au bas de cette page.
German:	Wenn Sie möchten, erhalten Sie eine Kopie des Fragebogens in Deutsch, bitte rufen Sie die Nummer unten auf der Seite.
Italian:	Se lei ha bisogno di una copia del questionario in questa lingua, per favore chiami il numero al fondo della pagina.
Nepalese:	इफ यौ विष तो रेचेइवे अ कापी ओफ द कुएस्तिओन्नैरे इन नेपाली प्लेअसे चल द नुम्बेर अत द बोत्तोम ओफ थिस पगे.
Polish:	Jeżeli potrzebuje Pan/Pani egzemplarz niniejszego kwestionariusza w języku polskim, prosimy zadzwonić pod bezpłatny numer telefonu podany na dole tej strony.
Portugese:	Se você requerer uma cópia deste questionário nesta língua, chame por favor o número do freephone no fundo desta página.
Punjabi:	ਜੇ ਤੁਹਾਨੂੰ ਇਸ ਭਾਸ਼ਾ ਵਿਚ ਇਸ ਪ੍ਰਸ਼ਨਮਾਲਾ ਦੀ ਕਾਪੀ ਦੀ ਲੋੜ ਹੈ ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਇਸ ਸਫ਼ੇ ਦੇ ਅੰਤ ਵਿਚ ਦਿੱਤੇ ਹੋਏ ਫ੍ਰੀਫੋਨ ਨੰਬਰ ਤੇ ਫੋਨ ਕਰੋ।
Russian:	если Вы требуете этого письма на этом языке, пожалуйста назовите бесплатный телефонный номер ниже.
Spanish:	Si usted requiere una copia de este questionario en este idioma, por favor llame al número al final de esta página.
Tamil:	இந்தக் கருத்தை இது மொழியில் நீங்கள் கேள்விபடால், தயவுசெய்து கீழுள்ள இலவச தொலைபேசி இலக்கத்தில் தொடர்புகொள்ளவும்.
Filipino:	Kung gusto ninyo ng isang salin ng tagalog sa listahan ng mga tanong, tawagan mo ang numero sa ibaba ng papel.
Urdu:	اگر وہ زبان میں اس سوالنامے کی کاپی چاہیں تو براہ کرم اس صفحے کے نیچے دیئے گئے فری فون نمبر پر رابطہ کریں

0800 358 0337

This study is being conducted in accordance with the Data Protection Act. This means your personal details will be kept strictly confidential and you and your household will not be identifiable from the data.

The equipment delivery plan from Navetas defined the phases of the full reinstallation process, with around 900 units available each month from August through to November and any residual units being covered in December. The project broke the July-December period into three phases of installation works with the aim of reaching 4,600 before the start of January 2017, thus allowing live trials of interventions 1-3 to commence.

A BMG field team, utilising the previous installation experience and learning generated from the pilot process were prepared to follow up the equipment mailings. Field team agents would contact participants who had received the equipment but not installed it, to offer encouragement and if required, a field visit to install it on the participant's behalf. This process had worked successfully within the pilot and the BMG staff confirmed the equipment was simple and easy to use, transferring into a better success and installation rate per day.

The field team of BMG staff have been able to achieve up to 60 installations per day, maintaining an average 30 installs per day across the population. They have also revisited properties where communications have dropped away, provided anomalous readings or participants have had residual

concerns following self-installation. Feedback on their presence on site has been positive throughout which is also reflected in their secondary responsibility, the successful recruitment of new participants.

The Maingate equipment utilised in the first project recruitment, including any smart plugs not already returned has also been collected throughout the reinstallation process. The equipment mailings include a pre-paid envelope, large enough to return both the original and the Navetas equipment (should participants wish to opt-out) to the Project. Further kits have been collected by BMG field teams and passed back to SSEN for recycling.

The returns process has also allowed the successful collection of 220 Navetas kits so far, another 28 have been received from Royal Mail classed as 'undeliverable', likely to be where change of ownership/tenancy has occurred and the project has not been updated. While not initially identified within the original planning process, Navetas have been able to receive and re-programme returned equipment, allowing units returned by participants who have opted out to be reused for newly recruited participants.

At time of reporting, including reused equipment which has been returned, 4,541 Navetas Loop's have been issued by the project. Key numbers from the reinstallation phases to date, are;

- 3,346 Active participants with new monitoring installed
- 1348 kits have been issued direct to BMG for recruitment purposes
- 1026 new participants have been recruited to the project (meeting the shortfall of 593 remaining participants required from the first recruitment period, and any subsequent loss of participants)
- 281 kits returned and reused
- 75% rolling installation rate across the mailings
- 31% self installation success across the sample
- 6.8% participant withdrawal pre-mailing
- 6.1% participant withdrawal post mailing
- 24% of equipment yet to be installed (Participants are awaiting appointment or have not responded to any communications. Inclusive of mailings sent while reporting)

UoS have continued to provide objective data analysis points on a monthly basis to confirm installation rates/reports provided by BMG and Navetas. This analysis has also outlined the much improved data collection ability of the new equipment and allowed for initial observations on the populations behaviour, for example, the reduction in daily update records from the 5th December is suspected to be linked to the increase in plug use for festive lighting, meaning the 'gateway' element has been unplugged from it's standard location. These units are 'catching up' on a less frequent basis, although Navetas make contact should communications not reconnect after 3 days, this hypothesis will be confirmed as the issue resolution process is completed for these participants.

The UoS analysis also identified a key equipment issue with the functionality of the SIM enabled ASUS units procured by Navetas to allow non-internet connected households to continue to participate in the Project. These units suffered a far higher rate of communication issues post installation, with almost 66% failing to provide consistent communications and 3.5% providing no communication. Navetas have worked extensively with the manufacturer ASUS to update the firmware of these units and increase the data provision. At time of reporting 2 firmware updates have been applied, the first correcting network loss response and reconnections, the second correcting the Loop device/ASUS unit communication link allowing new IDN allocation post communication loss. The latest firmware update has only been applied during collation of this report, however BMG staff have minimised ASUS enabled installations until the Project can confirm this issue is resolved.

While the clamp element of the Navetas solution allows the storage of 30 days data, mitigating most interruptions, the project continues to monitor all installations for any evidence of widespread issue or potential failures. Analysis has identified that of the 3346 installations, 15% are providing less than 95% of all data points, however, only 4% are providing less than 90% useful data. These installations are being monitored and are within the support and resolution process.

Throughout the installation process 1007 individual support tickets have been raised with Navetas, instigating an email, call and visitation process which has seen the resolution of 602 of these tickets so far. Once Navetas support staff have exhausted all options to resolve problems remotely, including emails and telephone calls, BMG field teams pick up on site inspections to provide on-site installation support. This approach is indicative of the collaborative partnership applied to all current WP's within the Project.

As the project has progressed through the reinstallation process we have engaged with Ofgem during monthly updates and advised on the increasing potential that residual installation/recruitment activities would continue into early January. UoS have confirmed their analysis of trial intervention impacts can be adjusted to take this into account and design out the negative impact to trial result analysis. It is expected that the project population will reach 3800 by the end of December, with a maximum population forecast at 4,250 against the target of 4,600 reached by mid January. The project is considering extending recruitment to reach the target population of 4,600 however equipment and field team costs will be limiting factors in this. In mitigation of this, the project is reviewing potential engagement options including more frequent contact and the impact of trials to ensure a statistically significant population is maintained throughout the project and minimise further attrition. A further mitigation against a reduced population is the ability to drop back to the factorial analytical method outlined by UoS within the Full Submission and reviewed in the previous report, although this method is seen as a 'last resort' given the reduction in statistical significance of results.

A key learning point of the recent equipment issues and required resolutions within the project is that access to Smart-meter data for innovation projects would avoid considerable cost, time and an increased risk potential when engaging with domestic customers in this manner. As innovations projects which look to prove new processes and technology, actual demand data of suitable granularity is essential. It is apparent that while independently sourced monitoring solutions may be more expensive and higher risk, legislative constraints would need to be overcome and

encouragement given to suppliers to work collaboratively with DNO's before Smart Meter data becomes a valid alternative.

2.2 Model & Trial Design Process

In the last six months, the team has progressed with materials and plans for trial interventions 1 (LED group), 2 (Media Led Engagement) and 3 (Media Led Engagement + Price Signalling). DNV GL and Behaviour Change have created the messaging and engagement materials for interventions 2 and 3 for the first live trial period (TP1). These include booklets and postcards with information on peak energy consumption and the associated constraints, as well as tips on how to shift consumption to outside of the peak period. The messaging materials include pictures of SSEN employees at work and information on how shifting consumption to non-peak periods can help keep the "power flowing".

These messages will be delivered via post as well as email and notifications in the Navetas portal, which has been developed to include SAVE project branding in addition to the ability to convey project branded demand reduction/demand shift messages from the engagement media. A timeline of mailings, messages and notifications has been produced which has been used to plan the 'event' days within the Price Signalling intervention group, and the Time Use (TU) surveys being constructed by BMG in collaboration with UoS. The Time Use diaries map 24 hours of energy 'activity' within a participant's household across blocks of time, for example; an Iron was used from 12:30-12:45, Washing Machine from 13:10-15:00. We will then compare the TU diaries with the consumption data provided by the household monitor to produce detailed demand profiles for these properties.

Figure 2. Trial interventions timeline

	Jan					Feb		Half term	Mar				Apr	
	2	9	16	23	30	6	13	20	27	6	13	20	27	3	Total
Booklet															1
Leaflet									1 to 4						2
Postcard		1 to 6	4E	4A	4B	4C	4D								6
Email/Loop notification		1 to 6	4E	4A	4B	4C	4D			5					9
Text										5					2
Loop portal															1

Understanding/Action

Understanding

1 Electricity gets to your house via a local network of cables and wires
2 The costs of maintaining this network make up ¼ of your bill
3 The network is busiest from 4 to 8pm, when it's at maximum capacity (factoids)
4 By shifting any non-essential use to outside this period we can all do our bit to reduce pressure on the network
5 This means less disruptive and costly upgrade work, so less digging up the roads
6 Plus a reduction in the amount of essential maintenance will help avoid long term price rises
7 SSEN is the company that maintains your local network
8 SSEN are already investing millions of pounds in the future of the network to ensure a reliable supply for years to come

Action

1 Can you do your bit to reduce pressure on the network?
2 Why not help by shifting your use to after 8pm where you can
3 Ask yourself "Can it wait till after 8?"
4 Most people find it easy to wait till after 8 to do things like:
  A The washing (wait until you have a full load)
  B Run the dishwasher (make sure it's full before you use it)
  C Use the tumble dryer
  D Watch TV, rather than having it on in the background or in rooms you're not in
  E Charge mobiles, tablets and laptops
5 Can you help us today when we know the network is going to be stretched? (event day)

Time diary							
Group 1 : Control	100	100	100	100	100	300	800
Group 2: Messaging	100	100	100	100	100	300	800
Group 3: Messaging & £	100	100	100	100	100	300	800
	300	300	300	300	300	900	2400

For Trial intervention Group 1 the provision of LED's and LED services has been a core deliverable for this reporting period. The project team and DNV GL, with support from SSEN procurement produced a set of requirements for the procurement process across August and September. It was a key aim of the process that the Project was able to contract with one supplier, able to respond to all of the requirements across live trial periods 1, 2 and 3 (TP1, TP2 and TP3), ending in December 2018. Utilising suppliers with existing framework agreements was deemed the most efficient and also the most transferable to BAU for SSEN and across the wider UK DNO's.

The requirements scope covered two area's, the supply of LED's themselves and the supply of ancillary services essential to the project trials, such as web presence, existing LED media/information and mailing ability. At time of reporting, the project has engaged with two suppliers and is moving towards securing a contract with RS Components for the provision of LED's and services. Final points being reviewed are the functionality of the landing page where participants can purchase discounted bulbs and the ability to track participant uptake.

The Project aims to offer discounted purchase of bulbs within TP1, allowing analysis of participant's willingness to self-fund Energy Efficient (EE) appliances in addition to the potential demand reduction related to their installation. The project plans to have a shopping portal up and tested before the first trial period starts, decisions on the level of discount applied and the amount of bulbs to offer each household will be finalised as part of this process. DNV GL, Behaviour Change and the LED provider are working to develop some messaging materials around the benefits of LEDs that will be sent out with the notice of the discount; ensuring participants can make an educated decision on their purchases.

The installation of the LED's, currently part of the projects planned approach within TP2 has been more difficult to secure, as most suppliers rely on the use of separate contractors to fulfil this requirement. The Project continues to work with partners and SSEN procurement teams to identify the most effect, replicable solution to this issue.

Additionally, DNV GL and SSEN are finalising incentive amounts for the "event day" research in method 3. We will use high street vouchers as the incentive, similar to the incentives offered to participants joining the project during the recruitment phase. Vouchers, while potentially not as encouraging an incentive as cash payments or bill reductions, are readily available and utilised across the energy industry. In this trial period, we aim to test response to simple messages (for example, a 6% reduction during peak times) for a small incentive (£5-10) for successful reduction. Within TP2 and TP3, the Project will assess participant response to larger target reductions for larger incentives and different incentive methods, examples being considered at time of reporting include;

- 'Collective' incentives, aggregating incentive amounts calculated per individual participant to provide a single large incentive which participants compete for within an 'event' period. The project is reviewing the potential to present this incentive as an item (e.g. tablet) or experience (e.g. entertainment event) to test the effect this has on participation.
- Gift cards, which can be pre-paid and only activated upon completion of the demand response target.

- Pre-paid ‘disposable’ debit cards, again can be loaded with a monetary value upon reaching a targeted reduction in demand, used in the same way as standard debit cards.

Separately DNV GL have continued to work with NEL on method 4 live trials, identifying elements of the messaging design piece and engagement media that could be utilised by the community energy coaches. This has allowed both DNV GL and Behaviour Change to remain actively involved in finessing the portfolio of ideas which will be utilised in live trials across interventions 1-3 in January 2017 while also reviewing the original trial designs produced during the last reporting period.

In collaboration with UoS, Navetas have completed development of 10 second data collection from the project participants. These data sets, while of considerable size, will increase the analytical success of monitoring consumption fluctuations across the sample. When combined with the TU diaries planned for trial intervention groups 2 & 3 and the control group, this increased granularity of data should allow for more accurate measurement of any demand reduction resulting from the Projects interventions. Additionally, the Project hopes this data will also allow the ability to track the interventions impact on specific appliance groups, such as heating, cooking and washing.

2.3 Trial Intervention 4 – Community Energy Coaching

Over the period July to December 2016, Neighbourhood Economics (NEL), has continued to lead the Community Energy Coaches from Winchester Action against Climate Change (WINACC) in Kings Worthy and the Environment Centre (tEC) in Shirley Warren in delivering SAVE Method 4, the Community Energy Coaching (CEC) trial. A review of the key learnings from the initial live trial, completed in the last reporting period, has influenced and supported the works undertaken by the Community Energy Coaching team within this reporting period.

Engaging with the communities in each of the trial areas through TP1 (January-March 2016) was successful in building trust relationships between the SAVE project team and local organisations / leaders. Thanks to the team’s initial efforts to articulate and support the community’s own change aspirations through the distinctive, dedicated strategies (DDS), the team was able to ‘earn the right’ to talk meaningfully about the SAVE demand reduction objectives.

Reflecting this ‘bottom up’ engagement process, there are a number of key learning points which have directly influenced the design of interventions for TP2 (October 2016-March 2017).

There is a need through TP2and beyond to define a single clear message in relation to energy saving. In exploring the impact of different demand reduction messages, it is important to distinguish between key ‘shift’ messaging (namely, support the network / support your community) and the more conventional ‘cut’ messaging (namely, save money / save the planet). This understanding has come through strongly from formal co-design sessions and ongoing informal engagement with local residents;

The DDS brands for each community (namely ‘Connecting Kings Worthy’ and Shirley Warren Working Together’) will create a platform for the demand reduction messaging. There was an implicit assumption prior to Trial Period 1 that the community-based trials and the household-based trials would naturally adopt the same energy-driven design imagery particularly around the ‘can it wait till after 8’ messaging. This messaging focusses on the potential to ‘shift’ energy use away from the peak demand period that networks experience in the evening. However, based on learning through formal and informal community engagement as part of TP1, the better option moving forward (for TP2 2 at least) is to continue to build and reinforce the local DDS brands.

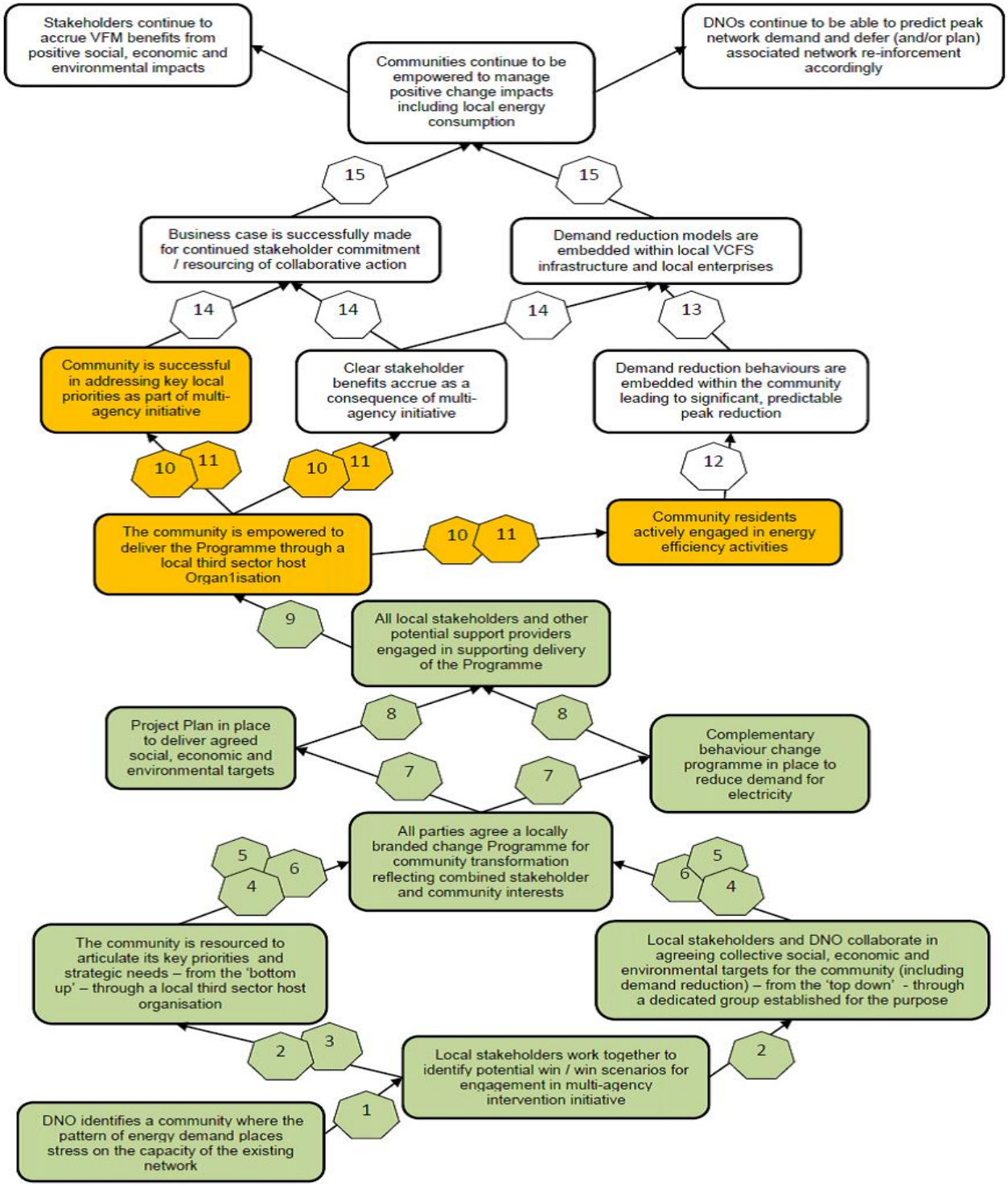
There has been a readiness and enthusiasm amongst local residents / organisations / leaders to engage with legacy issues looking beyond the current project, notably long-term culture change in terms of energy reduction and environmentalism. In Kings Worthy for example, visioning activity around the idea of developing an ‘eco village’ or similar place-based branding is already a key strand of the Coordinating Group’s work. This local activity can potentially add impetus to ‘shift’ messaging (namely, support the network / support your community) during Trial Period 2 and beyond.

Background market research commissioned through the SAVE project team in 2015, indicated that families would resist messages which involve ‘shifting’ of cooking activity, especially on weekday evenings. The conclusion was that shift interventions should concentrate instead upon delaying washing activities as the most likely focus for behaviour change. However, local engagement work through and since TP1 has served to question the presumption against ‘cooking shift’ messages given (i) the relatively high cumulative contribution to peak demand which cooking activity represents and (ii) the greater opportunity as part of the interactive community-based Trial to explore the determinants of attitude change as well as the propensity to behaviour change.

As part of the DDS options appraisal process, both trial communities have naturally identified the idea of becoming more ‘caring’ as communities as an aspiration - ‘connecting’ with vulnerable residents and ‘working together’ to support those in need. As these strategic strands develop, there is a key opportunity to relate to the Priority Service Register (PSR) process and associated social obligations.

Significant progress has been made in accordance with the set Outcomes Chain for the Trial method as indicated in figure 3 below;

Figure 3. Community Energy Coaching trial Outcomes Chain



	STRATEGIC INTERVENTIONS	
1.	Generate change programme budget	✓
2.	Local Stakeholder mapping / Partnership building	✓
3.	Appoint / Resource local host organisation	✓
4.	Establish Governance framework	✓
5.	Consolidate Stakeholder objectives	✓
6.	Establish / Co-produce Strategic change programme	✓
7.	Establish data baselines / monitoring systems	✓
8.	Manage / Resource Governance delivery framework	✓
9.	Training / Development Programme	✓
10.	Focussed behaviour change / outreach intervention programme	
11.	Monitor and adapt outreach programme	
12.	Review transformation levels / compliance against energy targets	
13.	Embed structural change	
14.	Business case development	
15.	Multi-agency support programme	

Broadly, key progress has been made on 3 fronts:

- ***Embedding*** a community based strategy from the 'bottom up', creating local trust relationships which effectively earn the project team the right to engage the community on the energy agenda;
- ***Building*** the process of change working with the community to co-design and deliver a range of energy saving interventions aimed at changing local consumption behaviour;
- ***Monitoring and analysis*** of research data – both quantitative and qualitative – to demonstrate and underpin sustained behaviour change.

Community-based strategy

Each community has a DDS which looks to combine the Projects objective of demand reduction with localised drivers, creating a sustainable, embedded campaign. This strategy has been created with input from the Project team, stakeholder group, steering group and more importantly the community groups engaged with the project and coordinated by the Community Energy Coach's. While the Project, stakeholder and steering groups retain awareness and input into these strategies, the day to day operation and implementation is carried out by the CEC's and local coordinating groups.

- Local websites and associated social media channels are now live, supporting the coaches engagements and Project objectives in both areas:
    - www.connectingkingsworthy.org.uk
    - www.shirleywarren.org.uk

- Local strategies in both communities are now well-established with local coordinating groups active and prospering. Recent activity highlights include:
    - Shirley Warren Working Together: Greenway clean-up weekend in October; ongoing commitment to running a local drop-in café; elected member surgeries initiated; commitment to formal constitution of SWWT group;
    - Connecting Kings Worthy: Walking route map produced for Autumn term as part of integrated school activity programme; 'big gathering' event planned to connect local organisations and promote volunteering; walking competition (match picture to map) held in November.

Energy saving interventions:

Formal co-design sessions informing TP2 (October 2016-March 2017) have been conducted in both communities. This process has effectively confirmed the hypothesis that the perceived value of 'collective action / being part of community effort' will act as a valid driver for behavior change alongside 'saving money' and 'saving the planet' as the more conventional motivations.

As informed by the local co-design process, the project team has identified 3 types of action for future trial interventions through trial periods 2 (October 2016–March 2017) and 3 (October-December

2017), namely Awareness Raising, Impact Measurement and Focus Groups. These are detailed in Figure 4 below;

Figure 4. Community Energy Coaching trial – Planned Interventions

Planned Intervention Actions			Data Capture
	Awareness raising		
1	Website	Using the website set up to support the 'Connecting Kings Worthy' strategy, building on opportunities for general awareness raising regarding energy efficiency (Top 10 tips, energy literacy testing, etc) and for specific events and activities linked to the project	
2	Awards Programme	A locally organised programme creating a context for set-piece interventions and an incentive for broader behaviour change	
	Impact Measurement		
3	Baseline Response	Checking the relative participation response levels before and after widespread interactivity	
4	Direct Asks	Selecting smaller clusters of residents (30-50 households) and asking them to take certain actions to cut measured demand at certain times	Selected feeders
5	Event days	Dedicated 'demand reduction challenges' urging a collective, community-wide demand reduction response, the impact of which can be monitored at substations	All substations
6	Competitions	Working with a number of 'cluster teams' taking part in competitive trials to cut and/or shift measured demand – potentially as part of the Sustainability Awards Programme	Selected feeders
7	Ambient Effect	For a number of selected household clusters, comparing actual v expected demand to assess indirect impact of awareness raising and other project activity	Selected substations / feeders
	Focus Groups		
8	Energy Literacy	Testing key components of understanding about energy issues, to review and agree most potent components of Energy Literacy in terms of propensity to change behaviour	
9	Qualitative Feedback	Adding value to other household based trials to explain why particular outcomes are observed, exploring how residents may have reacted to set interventions and why certain courses of action may have been chosen	
10	New ways of working	Looking generally at how to organise better for energy efficiency at the community level	

Building on the learning generated and engagement links initiated within TP1, the 2nd trial period interventions are now under way. Additional, more granular feeder monitoring has been installed in s/s's located in both trial areas. This data, combined with data collected through the CEC's engagements within the community will allow more accurate statistical analysis of the interventions success. Localised data collection and energy focused interactions undertaken so far in TP2 are:

- Baseline Response – targeting 100 households in Shirley Warren and 92 households in Kings Worthy to create a benchmark response level for DNO-fronted communications. The request was to complete and return an energy usage questionnaire either online or on paper. The response rate was 1 online and 5 paper returns for Shirley Warren (6% response) and 12 paper returns for Kings Worthy (13% response);

- Direct Ask – 3 'cut' request messages were sent to c180 households at intervals over the October-December period utilising the local strategic branding ('Connecting Kings Worthy' / 'Shirley Warren Working Together') as distinct from the DNO branding. The hypothesis is that response rates will be relatively higher reflecting the more 'trusted' status of the messenger. This hypothesis will be tested in follow-up interaction and focus group work with the test households.

A joint Stakeholder Group (SG) session with resident representatives from the 'Connecting Kings Worthy' Coordinating Group was held as part of the November SG meeting, serving to facilitate

understanding of respective interests and reinforcing the perceived value of the 'bottom up' coaching approach. An equivalent session in Shirley Warren is planned as part of the January 2017 SG meeting.

While engagement has improved through the CEC's efforts, both the survey response and wider engagement portfolio continue to support the key learning outcome from TP1, engagement and community response continues to be more difficult in the urban, less affluent area when compared to the rural, more affluent area.

Monitoring and analysis:

NEL have engaged with UoS to gauge what detail provided by the CEC trial may support the ongoing creation of the Customer Model. Sessions have also been held with EA Technology, who are creating the Network Model, to again ensure that data and analysis undertaken within the CEC trial can be easily utilised during the Model design and integration phases of the Project. Specific parameters have been identified for Trial 4 contribution to the Network Model and the appropriate balance between quantitative and qualitative impact information;

- The Environment Centre (tEC) has completed the analysis of 2015 baseline sub-station monitoring data as a pre-requisite for (i) profiling of current consumption behaviors across trial and control areas and (ii) subsequent correlation with Output Area, Index of Multiple Deprivation and House Type data as inputs to the Neighbourhood Level Demand Response Model for Trial 4;

- Feeder monitoring has been installed across trial and control areas in readiness for subsequent trial period interventions. Work is continuing to confirm addresses served by particular feeders as a priority for ongoing risk mitigation;

- A revised Learning Log format has been agreed for Trial 4 designed to embrace both SAVE and Ofgem Stakeholder Engagement and Consumer Vulnerability (SECV) criteria information requirements.

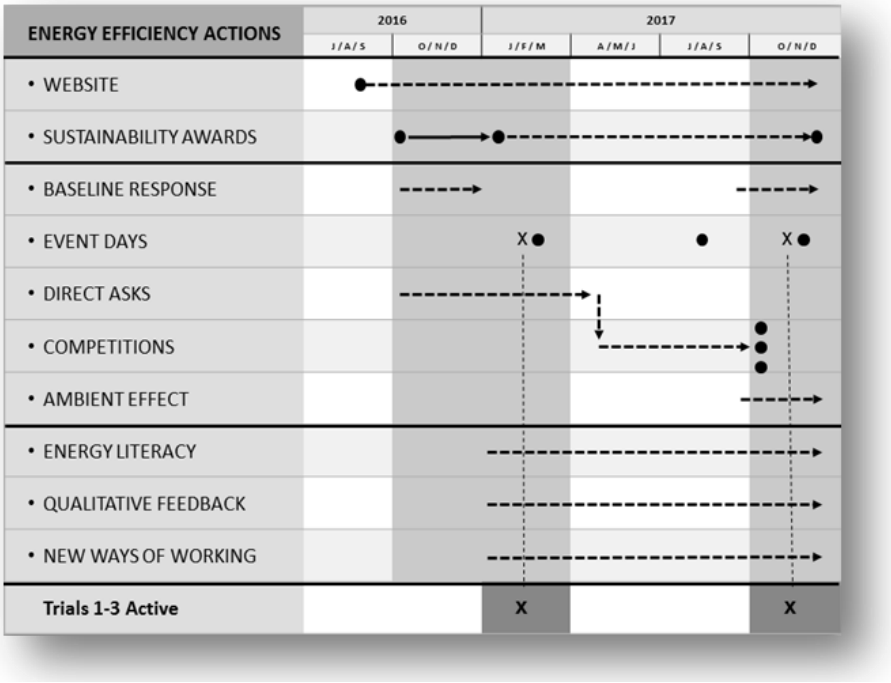
Within the next reporting period other interventions are due to kick off imminently in Q4 2016/17 notably (i) 3 'shift' requests under the 'Direct Ask' intervention to follow in January-March with interactive / focus group work thereafter (ii) Focus Groups (iii) the Lightbulb Challenge (Sustainability Awards) programme and (iv) the initial Event Day.

During the period from January 2017 NEL will continue to coordinate with DNV GL to ensure any potential collaboration with the 'shift request' messaging and Event Day interventions under the household-based trial interventions is undertaken. This approach has been identified as the best way to mitigate the impact of intervention 4 live trials running a year ahead of the household-based trials in interventions 1-3, which have been delayed by the 12-month period of reinstalling the household monitoring equipment.

Through this collaboration and the combination of activities across the trial groups, opportunities for comparative learning from the different trial interventions should be maximised.

The overall programme of Trial 4 interventions and the interaction between them is summarised in the following diagram for the balance of the project.

Figure 5. Community Energy Coaching – Trial Intervention Programme



In accordance with the agreed key milestones for Trial 4, by the end of June 2017:

- TP2 will be complete with a hypothetical, measurable demand reduction of the order of 5% through focused interventions and follow up learning outcomes;

- one or more commercial / partnership based opportunities should be identified to sustain demand reduction activity within the trial communities.

To maintain a clear focus on the successful management of the various packages of work the Project has held six Project Partner Review Board (PPRB) meetings, enabling all partners to meet at least once a month to discuss progress and plan activities. Representatives of BMG have attended all PPRBs within the reporting period to provide specific updates on recruitment progress, and Navetas have joined the PPRB's across the reporting period to offer information, support and to gain feedback on elements of equipment development and delivery. The purpose of the PPRB is to:

- Develop and implement a project plan that meets Project Direction, Full Bid Submission and SDRC requirements
- Record Project progress
- Review progress against the planned program (time and cost)

- Revise, where appropriate the Project plan to ensure progress continues to requirements
- Review risks and mitigations
- Capture and review project learning
- Ensure that the relevant information is provided for Innovation Steering Board meetings

Project assurance established as part of the Project Management approach ensures that:

- Thorough liaison between Suppliers, Project Partners, SSEN and Ofgem is maintained throughout the Project
- The Project remains viable
- Risks are controlled
- The Project is delivered in accordance with the Full Bid Submission and subsequent Project Direction
- Project participant needs are being met or managed
- Internal and external communications are working
- Any legislative constraints are observed
- The relevant resources are in place

These items are regularly checked to ensure delivery is consistent with, and continue to meet the scope of works in, the Full Bid Submission and subsequent Project Direction and that the SDRC are met. This has ensured that good progress has been made against all current deliverables and planning started for future work packages.

Through the monthly Project Partner Review Board meetings and additional smaller-scale meetings multiple areas of consideration have been addressed, ranging from equipment issues to engagement methods. Following a mixture of in-depth discussions and research, the following decisions on the approach to be taken have been agreed:

- Adaptation of the recruitment and installation processes to maximise participant uptake and reduce attrition.
- The re-application of returned equipment for new project participants thanks to Navetas's ability to re-programme and assign new serial numbers to ensure all participants have individual reference numbers.
- Development within Navetas's own 'Loop Energy Saver' portal to deliver Intervention groups 2 & 3 messages encouraging demand reduction/shift, instead of building a separate email and web based platform.
- The provision of additional feeder monitoring for the CEC trial enabling more significant statistical analysis of trial intervention outcomes.
- Scheduling of specific 'event' days within TG 2 & 3 to coincide with TU surveys undertaken by BMG, giving exceptionally granular detail on equipment usage and associated demand response by the population.

The next reporting period will be filled with key activities:

- Complete reinstallation and recruitment work package.
- Commence live trials across Trial Interventions 1, 2 and 3, LED installation, Media led Engagement Campaign and Media led Engagement Campaign + Price Signalling.
- Completion of 2nd live trial period for Intervention 4, the Community Energy Coaching intervention led by NEL.
- Submission of SDRC 4 – Create Commercial Energy Efficiency Measures, in June 2017.
- Learning analysis from Method 4 intervention trial 2, base data collection from Project population and supporting analysis by UoS.

With the Partner work packages, review sessions and good communications maintained between most parties there are no additional issues expected in the next reporting period. The ongoing impacts of the previously experienced equipment issues have been mitigated and are the subject of constant and detailed monitoring by all Partners and suppliers.

3 Consistency with full submission

Ofgem guidance: The DNO should confirm that the Project is being undertaken in accordance with the full submission. Any areas where the Project is diverging or where the DNO anticipates that the Project might not be in line with the full submission should be clearly identified. The DNO should also include, where appropriate, references to key risks identified under "Risk Management".

The SAVE project is being conducted in accordance with the full submission. To ensure all commitments from this submission are completed in a timely and efficient manner, the Project has developed a comprehensive structure with clear linkages to the text of the full submission.

The project has requested and has received approval for one change request to the project during this reporting period.

Change Request No.	**Description**
CR-2	Project Extension and Equipment Replacement. This change request presented the need for an extension to the project to allow replacement equipment to be re-installed across the Project population following the loss of Project Partner Maingate Enterprise Solutions, detailing the effects to deliverables and the management process for corrective actions.

4 Risk management

Ofgem guidance: The DNO should report on the risks highlighted in box 26 of the full submission pro forma, plus any other risks that have arisen in the reporting period. DNOs should describe how it is managing the risks it has highlighted and how it is learning from the management of these risks.

The Project risk register is a live document designed to identify actual and potential barriers to the satisfactory progress of the SAVE project. The register is used to target resources and to develop control measures and mitigations. The SAVE risk register is a single log of risks as identified by SSEN, University of Southampton, DNV GL, Future Solent and Neighbourhood Economics. The register is reviewed at the monthly Project Partner Review Boards and is reported to the SSEN Project Steering Group.

Risks are assessed against their likelihood and impact, where the impact considers the effect on cost, schedule, reputation, learning, the environment and people. Risks are scored before (inherent) and after (residual) the application of controls. Risks which are closed are removed from the live register, with any learning captured through the Learning Moments and Project Trials described in section 7.

Increased focus is placed on risks with amber or red residual scores and also on all risks with a red inherent score (to ensure there is no over-reliance on the controls and mitigation measures). At present there are 8 risks that fall into this category. These risks and how we are managing them are shown below:

							Inherent								Residual							Inherent			
							Impact								Impact										
Risk ref #	Confidential to Partner	Source	Phase	WBS Category	Status	Risk Description	Cost	Schedule	Reputation	Learning	Environmen	People	Likelihood	Risk Control/Mitigation Actions	Cost	Schedule	Reputation	Learning	Environmen	People	Likelihood	Score	Contingency Cost (£k's)	Contingency Delay (wks)	Score
WP1-3		SEPD			Active	Lack of budget to complete project and over spend on budget	5	5	3	5	1	1	4	Corrective actions process being fully assessed with due diligence as to cost applied throughout construction. SSEPD Legal and procurement teams supporting process however core concern that costs will exceed current project budget resulting in direct cost being passed to SSEPD or detailed in CR-2 to request additional funds from Ofgem .	4	4	3	3	1	1	3	20	93.7	2.3	12
WP1-5		SEPD			Active	Lack of data available from the Trial zones and an overall lack of learning to SEPD.	4	4	4	5	1	1	3	Corrective actions following acceptance of CR-2 mitigated previous equipment issues. TG4 providing learning through live trials, TG's 1, 2 and 3 commencing live trials in January. New equipment functioning correctly across sample and small scal comms issues being corrected.	4	4	3	3	1	1	2	15	4.7	0.1	8
WP1-6		SEPD			Active	Lack of availability of suitable learning from the SAVE project	1	1	4	5	1	1	2	Regular reviews of this important area will continue, with escalation through the ISB to address if necessary. Both UoS and DNV GL are continuously reviewing learning objectives and all SAVE contributors capture ad-hoc learning as a BAU task.	1	1	4	1	1	1	2	10	0.0	0.0	8
WP2-3		SEPD			Active	Failure of equipment and lack of data	4	4	3	5	1	1	2	Corrective actions following acceptance of CR-2 mitigated previous equipment issues. TG4 providing learning through live trials, TG's 1, 2 and 3 commencing live trials in January. New equipment functioning correctly across sample and small scal comms issues being corrected.	3	3	4	4	1	1	3	10	0.5	0.0	12
WP3-6		SEPD			Active	There are issues with the technology monitoring equipment (substation / domestic) and there is not enough data to gain meaningful results on the impact on energy usage and therefore the network model cannot assess the impact of the interventions.	1	1	4	5	1	1	2	Substation monitoring equipment is functioning corrctely and all data requirements have been agreed between UoS, EATL and SSEPD. New houshold monitoring equiment is functioning to expectation and providing granular detail to the project.	1	1	3	4	1	1	3	10	0.0	0.0	12
WP5-1		SEPD			Active	Lack of broadband coverage in the study areas	4	3	2	4	1	1	4	Despite the provision of the ASUS SIM enabled routers, current performance is below expectation. Fimware updates to the routers may correct some issues, until this is proven successful SIM enabled installations are being postponed/delayed where possible.	4	3	2	4	1	1	3	16	46.8	0.7	12
WP5-12		SEPD			Active	Due diligence on SIM-Based solution with Navetas Clamp - Navetas clamp needs to be integrated with the SIM solution and tested for reliable data transfer	3	5	4	4	1	1	3	SIM enabled ASUS units not performing as expected within project population. Fimware updates are being applied which should correct the issue, however, continued low performance could extend required recruitment process to cover lost participants.	2	4	3	3	1	1	3	15	2.3	0.2	12
WP9-3		SEPD			Active	Commercial support not available to define DNO effect/outcomes of Price Signalling WP resulting in lack of learning collection	1	3	3	4	1	1	3	Resource discussions and requirements defined, ability to draw on non-innovation team assitance and contracted support available should direct resource not be available.	1	2	2	4	1	1	2	12	0.2	0.1	8

5 Successful delivery reward criteria (SDRC)

Ofgem guidance: The DNO should provide a brief narrative against each of the SDRCs set out in its Project Direction. The narrative should describe progress towards the SDRCs and any challenges the DNO may face in the next reporting period.

The SAVE project has identified eight Successful Delivery Reward Criteria (SDRC). The majority of these are split into a number of sub components and each component has defined criteria, evidence and a target date for completion. The following table lists the individual SDRC components in chronological order and details the Project's progress towards their achievement for those due to be completed in this reporting period (up to December 2016) and into the next reporting period (up to June 2017).

	Completed (SDRC met)		Emerging issue, remains on target		SDRC completed late
	On target		Unresolved issue, off target		Not completed and late

SDRC	Due	Description	Status
SDRC 3.1	28/02/2014	Create Customer Engagement Plan	Complete – submitted to Ofgem on 28/02/2014
SDRC 8.9	19/06/2014	6 monthly Project Progress Report	Complete - and due to be submitted every 6 months until end of the Project
SDRC 1	30/06/2014	Produce report on learning from UK and international energy efficiency projects and the impact on the design and implementation of the SAVE project	Complete – submitted to Ofgem 30/06/2014
SDRC 8.9	19/12/2014	6 monthly Project Progress Report	Complete - and due to be submitted every 6 months until end of the Project
SDRC 2.1	31/12/2014	Create initial customer model	Complete – submitted to Ofgem 31/12/14
SDRC 7.1	31/12/2014	Create initial network model and parameters for tool	Complete – submitted to Ofgem 31/12/14
SDRC 8.9	19/06/2015	6 monthly Project Progress Report	Complete - and due to be submitted every 6 months until end of the Project
SDRC 5	30/06/2015	Identify control and sample groups	Complete – submitted to Ofgem 30/06/15
SDRC 6	30/06/2015	Install 80% of clip-ammeter	Complete – submitted to Ofgem 30/06/15
SDRC 4	30/06/2017	Create commercial energy efficiency measures	

Beyond the next reporting period, the following table lists the remaining SDRCs in chronological order:

SDRC	Due	Description
SDRC 2.2	30/12/2017	Revise Customer Model
SDRC 7.2	30/12/2017	Revise Network Model
SDRC 3.2	31/01/2018	Hold meetings to share progress, experiences and next steps with customers involved in trials on a six monthly basis
SDRC 2.3	31/05/2019	Finalise customer model
SDRC 7.3	31/05/2019	Finalise network investment tool
SDRC 8.1	29/06/2019	Produce project closure report
SDRC 8.2	29/06/2019	Produce network investment tool key outcomes report (including comparison of trial method impacts)
SDRC 8.3	29/06/2019	Produce LED trial report
SDRC 8.4	29/06/2019	Produce DNO price signals direct to customers trial report
SDRC 8.5	29/06/2019	Produce network pricing model report

SDRC 8.6	29/06/2019	Produce customer and network modelling report
SDRC 8.7	29/06/2019	Produce data-informed engagement trial report
SDRC 8.8	29/06/2019	Produce community coaching trial report

6 Learning outcomes

Ofgem guidance: The DNO should briefly describe the main learning outcomes from the reporting period. It should update Ofgem on how it has disseminated the learning it generated as part of the Project over the last six months

The learning objectives for the Project are:

- to gain insight into the drivers of energy efficient behaviour for specific types of customers
- to identify the most effective channels to engage with different types of customers
- to gauge the effectiveness of different measures in eliciting energy efficient behaviour with customers
- to determine the merits of DNOs interacting with customers on energy efficiency measures as opposed to suppliers or other parties

These will be answered as a result of carrying out the following project objectives:

- Create hypotheses of anticipated effect of energy efficiency measures (via commercial, technical and engagement methods)
- Monitor effect of energy efficiency measures on consumption across range of customers
- Analyse effect and attempt to improve in second iteration
- Evaluate cost efficiency of each measure
- Produce customer model revealing customer receptiveness to measures
- Produce network model revealing modelled network impact from measures
- Produce a network investment tool for DNOs
- Produce recommendations for regulatory and incentives model that DNOs may adopt via RIIO

6.1 Learning Outcomes

There have been no SDRC's completed within this reporting period and due to the reinstallation activities and subsequent delay to live trials across interventions 1-3 targeted dissemination has been minimal. Within method 4 multiple engagements have taken place however these have been entirely focussed on the delivery of intervention method 4 and will be reported through SDRC 8.8 – Community Coaching Trial Report and ad-hoc learning reports throughout the course of the project. The project has however been summarised at a number of smaller events, mainly SSEN attended engagement during reviews of the LCNF portfolio of projects. It is expected that once the reinstallation activities have completed and live trials are underway, more focussed dissemination activities will recommence.

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6.2 Learning Moments

The following 'Learning Moments' have been recorded during this reporting period.

- The recruitment and reinstallation processes have undergone several changes within the reporting period, all designed to minimise participant fatigue and increase effectiveness. Ultimately a fine balance between too much and too little communication has to be found

dependant on the circumstances. In this case the Project team initially discounted an additional phone call, as information supplied in the letter and subsequent equipment mailing was deemed sufficient. However as equipment losses and non-response increased the need for another point of contact before equipment mailing commenced was proven. Since implementation of this step, both lost equipment and lack of response has dropped. A further change was the extension of the 'self-installation' period between equipment mailing and a field team contact to offer an installation appointment for those participants who had not installed the equipment. This extension was in direct response to feedback from participants who advised they had delayed self-installation until a quieter time of the week, for example the weekend or bank holiday. Not only did this extension reduce the potential frustration of receiving multiple contacts within a short space of time, it also reduced the amount of unnecessary calls made by the field teams. Lastly, the project has seen a steady rate of attrition against the original population, it is essential to note that while this is unfortunate it is not a direct result of the reinstallation process, the most frequent reason offered by outgoing participants is the lack of contact in the previous period since original installation. It is therefore essential for the remainder of SAVE and for other projects looking to engage with domestic populations, that participants;

  - Remain engaged and in contact, regardless of issues which may delay deliverables.
  - Have an understanding of the planned communications intervals
  - Receive reminders of contact details to make proactive contact should concerns arise.

- During site visits made by SSEN staff it was identified that BMG field teams did not have immediate access to the work Risk Assessments (RA's). This was of core concern to the project, given both the lone working and out of office hour's operations being undertaken by the team. While BMG confirmed full safety briefings were given on a weekly basis, inclusive of area specific hazards, SSEN provided BMG with a RA template, copies of which could be kept by individual team members allowing stage 2 and stage 3 amendments to be made upon changes of circumstances/working locations. The review confirmed that BMG employ good working practise regarding lone working, where the location of staff members can be tracked using their company issued tablets, used for tracking recruitment activities. Finally BMG gave confirmation of start of and end of day communications with the field team manager in situ, logging any issues and a daily update of activity.
- The value of Smart-meter data to innovations projects when compared to the cost and potential risk of independently sourced alternatives. A key learning point of the recent equipment issues and required resolutions within the project is that access to Smart-meter data for innovation projects would avoid considerable cost, time and an increased risk potential when engaging with domestic customers in this manner. A DNO looking to install and manage independent monitoring across a project population faces a complex engagement process combined with additional cost and the increased potential for equipment issues. Additionally, should DNO interaction with domestic DSR or DSM become a Business-As-Usual (BAU) approach, accurate and efficient monitoring ability for domestic demand will be

equally important to provide specific, tailored incentivisation per intervention. While either aggregated information from Smart-meters or data collected at Distribution Substation s/s level would allow a degree of confidence, to evolve the industries approach to domestic DSM/DSR, actual consumption data is required to provide the optimum monetary value per kWh of reduction, in turn providing an efficient and affordable solution per area/demographic. In these situations, as well as innovations projects which look to prove new processes and technology, actual demand data of suitable granularity is essential - hence the ability for DNO's to access this information remains a priority. Within the SSEN New Thames Valley Vision Project (NTVV) applications were made to all suppliers to allow access to Smart meter data and assistance/support in seeking customers consent, in this case only SSE supply responded positively to this request, with SSE Metering working to ensure Smart Meter data across new installations could be made available. While access to un-anonymised Smart meter data for innovations 'Trials' is available through obtaining the appropriate consents (as specified in SLC 10A) this data is only available for the duration of that trial. For any specific consumer consumption data required outside of this condition, either for DNO's or those acting as aggregators, the need for independent monitoring, with the associated additional costs and increased risk profile, currently remains the only alternative solution.

- Corporate commitment from Stakeholder organisations within the Community Coaching Trial – while all Stakeholder Group representatives express their commitment to learning from the 'bottom up' coaching process, there is a recognition that their own work is driven by the 'top down' BAU desire for immediate action and outcomes. In response, the research-based coaching approach presents a real challenge in terms of operational immediacy. As a result the process is perceived 'back at base' by some stakeholder organisations as unduly slow in delivering on the energy research engagement. The outcome is that, even if successful, the coaching approach will present a real cultural challenge within the organisations themselves to take on board such a 'deferred impact' approach as distinct from more conventional transactional 'input/output' style projects.

6.3 Dissemination Activities

The table below shows the main dissemination activities which have been completed in this period:

Leading Partner	Date(s)	Description
UoS	07/16	In July, UoS Project Lead Dr Ben Anderson presented SAVE design & preliminary data analysis at University of Otago (New Zealand) 'GreenGrid' project workshop. The presentation generated substantial interest with comments focusing on it's ambition, scale and cost as well as it's high quality design. There were also discussions of the possibility of developing a similar or parallel study in New Zealand which would build on the SAVE approach. Discussion of this possibility is continuing between the Universities of Southampton and Otago. Detail covered; The uneven temporal distribution of domestic energy consumption is a well-known phenomena that is increasingly troublesome for energy infrastructures and sustainable or low carbon energy systems. The potential value of demand response as a solution rests on understanding the nature of temporal electricity demand and the range of household responses to potential interventions. To date most studies

		that have addressed this issue have used small scale, self-selected or convenience samples to recruit volunteers for intervention trials. As a result of the inherent bias in such samples the results of these studies cannot be robustly generalized to the wider population and we therefore know relatively little about how the wider customer base uses electricity and how they would respond to demand response interventions. In response this presentation described the implementation of the SAVE randomized control trial designed to understand the effects of a range of demand response interventions on a large (N > 4000) representative household sample in the south of England. The presentation explained the recruitment process, the monitoring equipment installation and preliminary survey-based data collection. It then presented findings on the nature of non-response and the extent of bias in the sample before reporting preliminary analysis of the patterns of electricity consumption using the linked monitoring and survey data.
SSEN	02/11/16	On the 2nd November the Project summarised the SAVE project to representatives of Oxford Universities 'Living Laboratories'. Oxford were keen on understanding the DNO approach to domestic engagement, the equipment used to monitor at household level and the data sets, granularity and analytics applied to support results. Discussions on the SAVE interventions and UoS applied analysis covered the whole scope of the project with Oxford keen on remaining up to date with Project learning as it's delivered
SSEN	04/11/16	On the 4th November the Project presented at the Future South conference in Winchester. The presentation and following panel session looked at the SSEN portfolio, and specifically the SAVE project as indicators of how the energy industry is changing and why focused engagement and collaboration with third parties are essential elements of our energy future. While only a summary of the SAVE project interventions, planned learning delivery and potential impacts were provided, great interest was displayed across the delegates and requests for updates at future events received.
SSEN	29/11/16	On the 29th November the Project attended the REGENSW event in Bath, presenting SAVE as part of the wider SSEN portfolio of Innovations projects. The presentation covered the need for increased flexibility within network management and engagement with 3rd parties, specifically as DNO's move towards DSO status. SAVE was explained as a flagship project for Domestic customer engagement, especially against a backdrop of commercial and industrial engagements which form the current focus of DSR/DSM projects.
SSEN	30/11/16	On the 30th November the SAVE Project was summarised at the NTVV UKPN DNO Roadshow in Crawley. SAVE was referenced specifically as building on success within the NTVV project's Domestic Automated Demand Response and customer engagement.
SSEN	5/12/16	On the 5th December the SAVE Project presented at the NTVV Customer closedown event held at National Grid's control centre in Wokingham. SAVE was referenced specifically as building on success within the NTVV project's Domestic Automated Demand Response and customer engagement. A full overview of the SAVE project was presented to SSEN and National Grid staff and a core group of NTVV customers.
SSEN	8/12/16	On the 8th December the SAVE project was summarised at the NTVV SPEN DNO roadshow in Cumbernauld. SAVE was referenced specifically as building on success within the NTVV project's Domestic Automated Demand Response and customer engagement.

7 Business case update

Ofgem guidance: The DNO should note any developments or events which might affect the benefits to be gained from the Second Tier project. Where possible the DNO should quantify the changes these developments or events have made to the Project benefits compared to those outlined in the full submission proposal.

SSEN's core purpose is to provide the energy people need in a reliable and sustainable way. To achieve this, our delivery priority is to deliver upgraded electricity transmission networks, operational efficiency and innovation in electricity and gas distribution networks as they respond to the decarbonisation and decentralisation of energy. The learning from the SAVE project will inform our strategy to deliver on this priority with the aim of supporting our core purpose.

Through these trials, SSEN hopes to quantify the most cost effective approach to having a measurable change in the operation of the distribution system and develop means of controlling the demand reduction in order to be able to rely on the demand reduction and defer or avoid network reinforcement.

Drawing on previous research and project learning the Project expects to see reductions of between 10-15% in overall electrical consumption for the interventions being trialled, although this reduction and potential benefit to the networks is expected to vary depending on multiple variables.

Expected reductions achieved as a result of the interventions being trialled in the Project are shown below, with further scenarios detailed in the full submission proposal.

Average annual household consumption (kWhs per year)	4,226	4,226	4,226	4,226
Measure	**LEDs**	**Data informed engagement**	**DNO rebates**	**Community Coaching**
Average annual household lighting consumption (kWhs per year)	634			
Expected total reduction (%)	10.5	11	15	15
Expected annual reduction (kWhs per year)	444	465	634	634
Expected hourly reduction (kWhs)	0.05	0.05	0.07	0.07
Expected hourly reduction (Watts per hour)	5	5	7	7
Expected daily reduction (Watts per day)	122	127	174	174

Small Low Voltage Urban reinforcement	**LEDs**	**Data informed engagement**	**DNO rebates**	**Community Coaching**
Daily reduction on LV cable with 150 customers (kW)	18	19	26	26
Rating of circuit (kW)	200	200	200	200
Headroom made available (%)	9.12	9.55	13.03	13.03
Equivalent to connection a number of 3kW heat pumps or EVs now able to connect (without diversity)	6	6	9	9

SSEN has not noted any developments or events which might affect the wider business case outlined above and as detailed in the full submission proposal.

8 Progress against budget

Ofgem guidance: The DNO should report on expenditure against each line in the Project Budget, detailing where it is against where it expected to be at this stage in the Project. The DNO should explain any projected variance against each line total in excess of 5 per cent.

Project expenditure is within the budget defined in the Project Direction. The table below details expenditure against each line in the Project Budget and compares this with planned expenditure to date[1]. Projected variances are also listed for changes >5%.

	Budget	Expenditure ITD	Comparison with expected expenditure	Projected Variance (at project conclusion)		
				(£K)	%	#
LABOUR	£1,848,320	£426,920.19	79%	0	0	
EQUIPMENT	£1,015,000	£878,511.76	92%	0	0	
CONTRACTORS	£5,085,350	£2,638,654.87	97%	0	0	
IT	£586,850	£578,624.31	102%	0	0	
TRAVEL & EXPENSES	£26,400	£16,666.0.	98%	0	0	
PAYMENTS TO USERS	£472,300	£180,432.78	64%	0	0	
DECOMMISSIONING	£206,930	£0	-	0	0	
OTHER	£402,530	£0	-	0	0	

Notes: The budget totals used are reflective of the new SAVE budget structure, detailed in Formal Change Request CR-2 and agreed by Ofgem in July 2016.

[1] Expenditure is compared with a dynamic assessment of project phasing which reflects the nature of specific contract payments and physical delivery milestones. A comparison of expenditure with phased budget will often indicate a payment lag due to the nature of invoicing processes.

9 Bank account

Ofgem guidance: The DNO should provide a bank statement or statements detailing the transactions of the Project Bank Account for the reporting period.
Where the DNO has received an exemption from Ofgem regarding the requirement to establish a Project Bank Account it must provide an audited schedule of all the memorandum account transactions including interest as stipulated in the Project Direction.

Transaction details for the SAVE Project Bank account during this reporting period are listed in the Appendix. This extract has been redacted to protect the financial details of transacting parties; the full, un-altered copy has been submitted in a confidential appendix to Ofgem.

A summary of the transactions to date are shown in the table below:

Description	**Totals (June 2016 – December 2016)**
Payments out of account	-876,865.19
Interest	7,416.22
Balance	**£5,128,555.56**

10 Intellectual Property Rights (IPR)

Ofgem guidance: The DNO should report any IPR that has been generated or registered during the reporting period along with details of who owns the IPR and any royalties which have resulted. The DNO must also report any IPR that is forecast to be registered in the next reporting period.

In commissioning project partners to commence project activities, the SAVE project has applied the default IPR treatment to all work orders (as defined in the Low Carbon Networks Fund Governance Document version 7). This will ensure IPR which is material to the dissemination of learning in respect of this project is controlled appropriately.

No Relevant Foreground IPR has been generated or registered during the June 2016 – December 2016 reporting period. No Relevant Foreground IPR is forecast to be registered in the next reporting period.

The SAVE project intends to gather details of IPR through the structure of individual project trials. Specifically, in concluding project activities the following details will be gathered: 1) components required for trial replication and, 2) knowledge products required for trial replication.

11 Other

Ofgem guidance: Any other information the DNO wishes to include in the report which it considers will be of use to Ofgem and others in understanding the progress of the Project and performance against the SDRC.

No further details.

12 Accuracy assurance statement

Ofgem guidance: DNO should outline the steps it has taken to ensure that information contained in the report is accurate. In addition to these steps, we would like a Director who sits on the board of the DNO to sign off the PPR. This sign off must state that he/she confirms that processes in place and steps taken to prepare the PPR are sufficiently robust and that the information provided is accurate and complete.

This Project Progress Report has been prepared by the Project Manager and reviewed by the Project Delivery Manager before sign-off by the Director of Engineering, who sits on the Board of SSEN.

This report has been corroborated with the monthly minutes of the Project Steering Group[2] and the Project Partners Review Board to ensure the accuracy of details concerning project progress and learning achieved to date and into the future. Financial details are drawn from the SSE group-wide financial management systems and the Project bank account.

Prepared by:	Alexander Howison	Innovation Programme Delivery Manager
Reviewed by:	Stewart Reid	Head of Asset Management & Innovation
Final sign off:	Andrew Roper	Director of Engineering & Investment

[2] The Project Steering Board meets as part of an overall SSEN Innovation Steering Board

Appendix - Redacted copy of bank account transactions

Bankline

RBS
The Royal Bank of Scotland

Statement for account **-**-** ******** from 01/06/2016 to 30/11/2016

Short name:	SOUTHERN ELECTRIC PO	Currency:	GBP
Alias:	SOUTHERN ELECTRIC PO	Account type:	SPECIAL INT BEARING
BIC:	********	Bank name:	NATIONAL WESTMINSTER BANK
IBAN:	**********	Bank branch:	READING MKT PLACE

Date	Narrative	Type	Debit	Credit	Ledger balance
	CLOSING BALANCE				**5,128,555.56Cr**
25/11/2016	SOUTHERN ELECTRI SAVE COSTS	EBP	151,776.73		5,128,555.56Cr
26/10/2016	SOUTHERN ELECTRI SAVE COSTS	EBP	191,115.66		5,280,332.29Cr
05/10/2016	SOUTHERN ELECTRI SAVE COSTS	EBP	320,871.87		5,471,447.95Cr
30/09/2016	30SEP-GRS ********	INT		3,647.66	5,792,319.82Cr
30/06/2016	30JUN-GRS ********	INT		3,768.56	5,788,672.16Cr
28/06/2016	SOUTHERN ELECTRI SAVE COSTS	EBP	213,100.93		5,784,903.60Cr
	OPENING BALANCE				**5,998,004.53Cr**
Totals			**876,865.19**	**7,416.22**	

NB: Transactions with today's or next business day's date may still be subject to confirmation and may subsequently be reversed from your account.
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