SCOTTISH & SOUTHERN ELECTRICITY NETWORKS DISTRIBUTION
NETWORK INNOVATION ALLOWANCE
SUMMARY REPORT
1 APRIL 2022 TO 31 MARCH 2023

Scottish & Southern Electricity Networks

Powering our community

CONTENTS

FOREWORD

During this year, we have continued to progress a diverse and successful portfolio of innovation projects which support the progress to Net Zero as well as ensuring fairness, inclusivity and equality in the energy system transition.

Our HOMEflex[1] project addresses potential gaps in fairness during the development of domestic Flexibility Services. HOMEflex aims to create an inclusive, fair, and transparent marketplace from the start.

In our Whole System Growth Scenario Modelling Phase 2 project we are collaborating with Dundee City Council to develop a whole system planning tool to support the development of their local area energy strategies.

The NeRDA[2] project is developing innovative new options for near real time data sharing with stakeholders, and along with other projects such as LEO,[3] is providing valuable learning to meet our role in facilitating the transition to Net Zero.

Alongside this we continue to deliver projects such as Equal EV which focused on identifying the barriers that motorists with mobility impairments face in their Electric Vehicle (EV) transition.

In our programme, we have made progress with projects such as SYNAPS 2; which aims to better predict and pre-empt faults and avoid customer interruptions which would have the potential to bring significant benefits to consumers.

Further to the deployment of our Haysys Phase Detection and Underground Low Voltage Fault Finding Techniques in late 21/22, we have continued to expand and embed their use across all our operational regions, training over 44 staff in order to start delivering benefits to our customers.

Throughout, we have continued to work with various stakeholders to develop and co-create our innovation projects to ensure that we are addressing their needs. For further details on our approach to innovation going forward or if you have an idea or area where you think we should be focusing innovation, then we want to hear from you via **www.ssen-innovation.co.uk**.

Stewart A Reid
Head of Future Networks
Scottish and Southern Electricity Networks

1. Household or Microbusiness Energy Flexibility
2. Near Real-Time Data Access
3. Local Energy Oxfordshire

INTRODUCTION

This report presents a summary of all Network Innovation Allowance (NIA) activities carried out in Scottish and Southern Electricity Networks' (SSEN) license areas: Scottish Hydro Electric Power Distribution (SHEPD) in the North of Scotland and Southern Electric Power Distribution (SEPD) in central southern England between 1 April 2022 and 31 March 2023. Our current portfolio consists of 25 NIA projects, 21 of which we are leading on and are summarised in this report.

This Summary Report details all of our NIA projects open in the 2022-2023 NIA year identifies how our NIA projects link to our SSEN innovation Strategy and Strategic Objectives, which align to the ENA Networks Innovation Strategy. For more information on our innovation strategy please click **here**.

OUR SSEN STRATEGIC OBJECTIVES

DELIVERING A SAFE, RESILIENT AND RESPONSIVE NETWORK

ACCELERATING PROGRESS TOWARDS A NET ZERO WORLD

PROVIDING A VALUED AND TRUSTED SERVICE FOR CUSTOMERS AND COMMUNITIES

MAKING A POSITIVE IMPACT ON SOCIETY

WHY WE INNOVATE

Innovation has always played an important role as a key enabler within SSEN, and the need to innovate becomes imperative as we look to achieve our ED2 Strategic Outcomes. Specifically, we aim to use innovation to: Support and enable the efficient delivery of new capabilities to meet consumer needs and deliver value.

Our wide-ranging approach to innovation includes:

- Engaging with a wide variety of stakeholders to identify new challenges and opportunities across the whole system.
- Co-creating innovation projects with partners from across the energy supply chain including other licensees, Original Equipment Manufactures (OEMS), innovators, academics etc.
- Identifying opportunities to share best practice and 'fast follow' to deliver benefits for both customers and stakeholders.
- Trialling new tools, techniques, systems and methods of work to improve reliability and deliver efficiencies.
- Developing new knowledge and gathering evidence to shape future plans. Widely disseminating and sharing the new knowledge we discover.
- Identifying and testing the functions to support the transition to DSO.
- Demonstrating new and emerging capabilities to de-risk and learn by doing.

OUR INNOVATION DELIVERY PRINCIPLES

Our innovation delivery principles of Collaborative & Open, Agile, Relevant, Data Driven and Innovation Culture are underpinned by a strong commitment to "learn by doing". In addition to this we have established key partnerships with Power Networks Demonstration Centre, Energy Innovation Centre and UKPN.

Collaborative & Open

Working with the supply chain and peers to facilitate the innovative aspirations of stakeholders

Agile

Setting the standard, fast to follow and quick to learn

Relevant

Applicable and connected to what our stakeholders and consumers need

Data Driven

Using data and analytics to anticipate issues, support decision making and ensure our network is ready for Net Zero

Innovation Culture

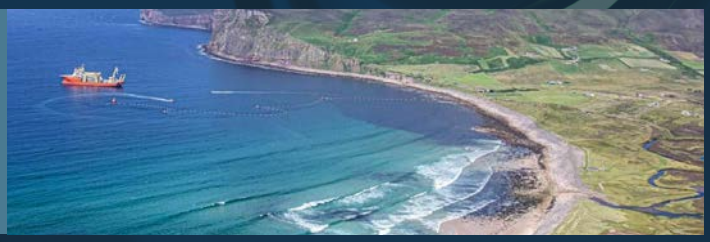
Evolve our culture to achieve maximum value from our innovation activities

Learn by doing

NOTABLE INNOVATIONS, BENEFITS AND LEARNING AGAINST OUR STRATEGIC OBJECTIVES

Understanding the health of our existing assets is key to improving our overall network reliability through better coordination of remedial and investment actions. We are developing new approaches to monitor the health of our assets, to enable us to better understand condition and anticipate failure, allowing us to proactively intervene thus minimising customer disruption.

DELIVERING A SAFE, RESILIENT AND RESPONSIVE NETWORK



We are a project partner on UK Power Networks (UKPN) HV feeder Monitoring to pre-empt Faults project, which is exploring the benefits of monitoring our overhead and underground High Voltage (HV) and Extra High Voltage (EHV) Networks. One of the suite of tools that this project aims to test is, "Distribution Fault Anticipation" (DFA), to monitor feeders to pre-empt faults. To date we have installed 16 devices on our network, we have investigated 7 notable fault/ incidents which has led to proactive interventions. This has enabled us to repair elements of our network which would have resulted in unplanned interruptions of supply.

The DFA solution consists of a disturbance recorder which can be installed on HV or EHV feeders to monitor network characteristics and a "Master station" cloud-based service which provides the secure conduit and main data repository between the DFA and the Distribution Network Operator (DNO). This is being trialled alongside a network analysis tool (ASPEN Distriview) and Fault Passage Indicators (FPIs) to monitor a selection of HV and EHV feeders to identify the location of network issues before they materialise into faults.

Applying similar techniques, SYNAPS 2 is exploring the benefits of monitoring our underground Low Voltage (LV) Networks through Waveform Analysis. We now have 9 SYNAPS units installed on our network, one of these units identified an issue in a section of one of our circuits. We removed a length of the cable circuit, including cable and two joints, from the identified location. These were sent to RINA for electrical testing and examination. The testing and examination carried out by RINA identified that:

1. A fault was identified in the service joint.
2. Arcing had occurred between two phases within the joint
3. SYNAPS located the pre fault before a catastrophic breakdown occurred.

The outcome of this project will not solely be a system that warns against pre-fault activity but will generate data to support the management of our LV underground assets within our Investment Management process.

The SYNAPS 2 and HV Feeder Monitoring to pre-empt Faults projects are showing that we can anticipate faults, and potentially categorise their cause and location – this challenges us and our regulatory framework to develop new proactive ways of working on faults.

PROVIDING A VALUED AND TRUSTED SERVICE FOR CUSTOMERS AND COMMUNITIES

Co-creation and collaboration are essential to our innovation portfolio.

In our Smart Hammer project, we have continued our partnership with a local Small to Medium Enterprise based on the Western Isles to develop a tool which can be used as a consistent and reliable alternative to traditional wood pole inspection techniques.

The tool has been co-created with Spectral Line Systems and Abelon Systems using a multi-disciplinary team to develop the tool and mobile app, with engagement from both internal and external stakeholders. The tool takes the form of a Smart Hammer that connects to the operator's smart phone, providing an asset score of a pole's health. We now have 50 hammers in circulation on our network with over 3000 pole inspections being carried out by smart hammers. This data set is allowing the creation of a scoring algorithm that will provide earlier detection of deteriorating poles which will enable proactive replacement and reduce unplanned supply interruptions, thus improving system reliability.

We have other key projects that we are co-creating with SMEs such as Storm AI which seeks to understand the potential roles that Artificial Intelligence (AI) and Machine Learning (ML) could play in providing better information for customers who may be impacted during a storm. A trial ingest engine was created by project partners Open Grid Systems (OGS) and SSEN staff are translating their tacit knowledge into the engine to help tag and classify images of faults during storm events on our network.

MAKING A POSITIVE IMPACT ON SOCIETY

When looking at our aim to make a positive impact on society, fairness, inclusivity and equality are three of the most important principals where energy provision is concerned. For this reason, we launched HOMEflex – Household or Microbusiness Energy Flexibility.

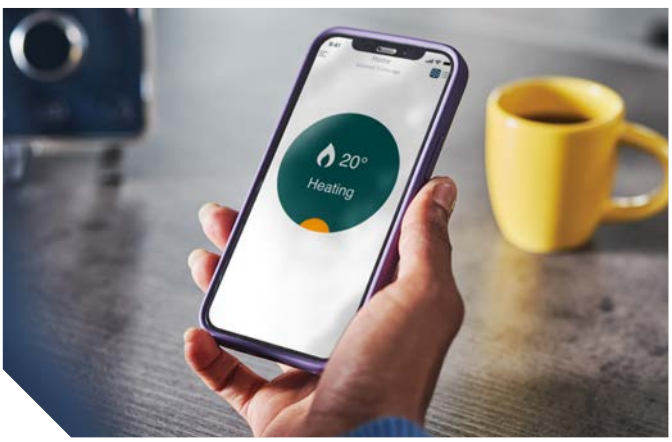
Trust in the emergent flexibility marketplace will be built on its ability to be inclusive, fair and transparent. In the CSE report "Smart and Fair?" the mechanisms through which people in vulnerable situations and/or living in fuel poverty could be excluded have been identified. Knowing where or how people could be excluded allows us to provide solutions for inclusivity. The creation of a Code of Conduct for Domestic Flexibility Services Markets is one of the key enablers to mitigate these risks.

The HOMEflex Code of Conduct is now complete, and at the time of writing, is out to Open Consultation so any proposed changes can be considered prior to the Code completion in the Autumn of 2023.

The first impact on society will hopefully be seen this winter, as National Grid ESO look to use the Code to help deliver fairness, inclusivity and transparency in their Winter 2023/24 Demand Flexibility Service (DFS). The code acts as the foundation to a well-functioning flexibility market that is shaped around transparency and inclusivity, and SSEN are delighted that the Code of Conduct is gaining positive industry exposure, ultimately contributing to their vision for a just transition to net zero, in which everyone who wishes to participate, can do so with confidence.

ACCELERATING PROGRESS TOWARDS A NET ZERO WORLD

The SSEN NeRDA project is a demonstration project which makes near real-time DNO network data available to stakeholders. The project will assess and understand the useability and benefits of this data. Ofgem have made it clear that Open Data is one of the key focus areas for driving decarbonisation and accelerating progress towards a Net Zero world. We know that flexibility will be crucial, in facilitating significant deployment of Low Carbon Technologies (LCTs). The learning from NeRDA helps us to understand a variety of stakeholder needs for network data. Working closely with our stakeholders over the last year has developed key learning on how stakeholders access and understand network data, specifically around the need to provide this along with connectivity data and other data sources to contextualize the network data and unlock its value. This has led to a NeRDA Phase 2 project being scoped for ED2. This project will undertake extensive stakeholder engagement based on the data available in the current NeRDA project to understand what other data sources need to be included and how that data needs to be configurable for stakeholders to then unlock value from it.



Whole Systems Growth Scenario Modelling Phase 2 (WSGSM2 aka RESOP) is assisting Local Authorities (LAs) place LCTs and create Local Area Energy Plans (LAEPs). LAEPs are Net Zero plans created from the bottom up through collaborative stakeholder engagement between LAs, Utilities and private industry. SSEN is funding the development of LAEP+, a digital visualisation platform, that will allow LAs to create digital LAEPs. We are also developing the Navi tool, enabling powerflow analysis, that provides network modeling support to LAEP+, that allows LAs to place LCTs and determine if there is cost or constraint associated with the connection. At the end of the RIIO-ED1 funding period for WSGSM2 we have been able to demonstrate how LAEP+ and Navi can interact to provide collaboration opportunities for LAs and Utilities.

This close working collaboration has highlighted the need for additional development with gas utilities for hydrogen modelling, heat network providers for heat network modelling and to improve network modelling so it can extend from just LV to also HV and EHV powerflow analysis. We anticipate that additional funding will be secured for a follow-on project during RIIO-ED2. The aim of this project is to improve the output quality of LAEPs for LAs and gain acceptance across both gas and electricity utilities on what a future Net Zero LA will look like, which will help inform investment planning.

NERDA
NEAR REAL-TIME DATA ACCESS

SUMMARY OF PROGRESS

In the the year ending 31 March 2023, there were 25 projects funded under SEPD and SHEPD Network Innovation Allowance (NIA). Of these, 21 projects were led by us and the remaining 4 were managed by other DNOs.

Each project accumulates knowledge and learning which aligns with one or more of our Strategic Objectives. The appropriate primary Strategic Objective is denoted via the inclusion of its icon.

DELIVERING A SAFE, RESILIENT AND RESPONSIVE NETWORK

PROVIDING A VALUED AND TRUSTED SERVICE FOR CUSTOMERS AND COMMUNITIES

ACCELERATING PROGRESS TOWARDS A NET ZERO WORLD

MAKING A POSITIVE IMPACT ON SOCIETY

2.1 NIA SSEN 0059 CAGE CAPTURE SF_6 PAINT DETECTION

KEY ACTIVITIES

CageCapture™ 'Detection' solution will improve the speed of response to reduce sulphur hexafluoride (SF_6) emissions by enabling early detection and location of SF_6 leakage points in assets. The project will deliver a leak detection coating that can be applied to switchgear pipework and flanges for the detection of SF_6 leaks, indicated by exhibiting an Ultraviolet fluorescence or colour change. Stage 1 will validate the proof of concept in a suitable test environment; Stage 2 will evaluate the function of the product after application to switchgear on the distribution networks.

EXPECTED BENEFITS

The project has the potential to deliver up to £11m in financial benefits to GB distribution customers based on early detection of leaked SF_6 gas.

PROGRESS

Initial fluorescent results using the originally proposed cage material (CC19) showed extremely strong fluorescence however the reduction following SF_6 exposure was limited. Upon further analysis it was considered that the changes in fluorescence after SF_6 exposure would be extremely difficult to detect using standard industrial methods and were inconclusive in lab environments. Therefore, this potential solution was rejected, and alternative methods investigated. Latest results of alternative solutions:

- Co-crystalised CC3 & CC19 showed reduced fluorescence upon manufacture and therefore should result in a more discernible change upon SF_6 exposure. Test method & equipment to accurately measure change in fluorescence upon exposure to SF_6 being sourced as not available at UoL.
- Phenolphthalein cage (visual colour change) is proving very difficult to manufacture due to limited information in published paper. Further trials ongoing.
- Iodine saturated cage, initial trials were unsuccessful as the SF_6 didn't seem to displace the Iodine in sufficient quantities to be detected. However, further trials are ongoing as this is considered, in theory, to be a promising and practicable solution.

PRIMARY STRATEGIC OBJECTIVE

ACCELERATING PROGRESS TOWARDS A NET ZERO WORLD

COLLABORATORS

EIC Together we innovate

UNIVERSITY OF LIVERPOOL

PROJECT BUDGET
£437,219

START/END DATE
Sep 2022 – Sep 2024

WEBSITE
www.smarternetworks.org/project/project/nia_ssen_0059

PROJECT MANAGER
Fraser Macintyre

2.2 NIA SSEN 0058 CAGE CAPTURE SF_6 FLANGE GUARD

KEY ACTIVITIES

CageCapture™ 'Capture' solution will improve the speed of response to reduce sulphur hexafluoride (SF6) emissions by enabling early capture of SF_6 leakage from assets. The project will deliver a leak capture solution that can be applied to switchgear pipework and flanges for the capture of SF_6 leaks. Stage 1 will validate the proof of concept in a suitable test environment; Stage 2 will evaluate application of the product to switchgear on the distribution networks.

EXPECTED BENEFITS

The project has the potential to deliver up to £11m in financial benefits to GB distribution customers based on early detection of leaked SF_6 gas.

PROGRESS

Raw materials procured and Cage (CC3) material manufactured in kg quantities suitable for scale up and prototype manufacture. Lab based evaluation of SF_6 capture (adsorption) of proposed cage (CC3) material completed:

- Adsorption curves completed for pure and dirty manufacturing methods.
- Adsorption of co-crystalised cage (CC3 & CC19) in various proportions evaluated.
- Results of pure CC3 material showed best results and is in line with required capture %.

In summary, the project is proceeding to schedule and budget and has hit all technical and performance milestones to date.

PRIMARY STRATEGIC OBJECTIVE

ACCELERATING PROGRESS TOWARDS A NET ZERO WORLD

COLLABORATORS

EIC Together we innovate

UNIVERSITY OF LIVERPOOL

PROJECT BUDGET
£439,611

START/END DATE
Sep 2022 – Sep 2024

WEBSITE
www.smarternetworks.org/project/project/nia_ssen_0058

PROJECT MANAGER
Fraser Macintyre

2.3 NIA SSEN 0063 VULNERABILITY FUTURE ENERGY SCENARIOS

KEY ACTIVITIES

The move to net zero will make customers ever more dependent on a secure, affordable, and reliable electrical supply. There is greater potential to impact customers in vulnerable situations as well as to inadvertently create new forms of vulnerability. Current Distribution Future Energy Scenarios (DFES) don't effectively take consumer vulnerability into account. Vulnerability Future Energy Scenarios (VFES) aims to better understand potential changes and project impacts. The VFES will explore a triangulated method using innovative forecasting techniques which, if successful, could better inform operational practises. It may also allow better informed investment planning which takes vulnerability into account and won't leave vulnerable customers and communities behind.

EXPECTED BENEFITS

VFES is a vulnerability-based project with aims of benefiting consumers in vulnerable situations by predicting the scale and location of such situations as well as what new situations may cause vulnerability.

PROGRESS

The Smith Institute have concluded their Machine Learning activity successfully. After identifying seven distinct groups of locations that SSEN service, with each group having similar demographic features driving vulnerability, and each requiring distinct strategies for investment of time, effort, and money, as well as by government and other organisations to address the underlying drivers of vulnerability.

PRIMARY STRATEGIC OBJECTIVE

MAKING A POSITIVE IMPACT ON SOCIETY

COLLABORATORS

Imperial College London

National Energy Action – Action for Warm Homes

The Smith Institute

PROJECT BUDGET
£144,000

START/END DATE
Aug 2022 – Apr 2023

WEBSITE
www.smarternetworks.org/project/project/nia_ssen_0063

PROJECT MANAGER
Simon O'Loughlin

2.4 NIA SSEN 0061 HOMEflex

KEY ACTIVITIES

HOMEflex seeks to address gaps in fairness during the development of domestic Flexibility Services. HOMEflex aims to create an inclusive, fair, and transparent marketplace from the start. It will achieve this by developing a Code of Practice for Domestic Flexibility Services, including a framework and business case for an accompanying Compliance Scheme. If successful, HOMEflex could be used by procurers of Flexibility Services to give them confidence they are engaging with a trustworthy vendor and used by flexibility providers to demonstrate their credibility. HOMEflex draws on previous findings including Flex Assure for industrial and commercial customers, "Smart and Fair?" and CrowdFlex. This proposal resulted from engagement with Open Networks members and is seen as important for delivering domestic and microbusiness flexibility fairly.

EXPECTED BENEFITS

The ultimate benefit of this project will be the development of an inclusive, healthy, publicly trusted and liquid domestic Flexibility Services marketplace. The project is not dedicated to a specific, single financial benefit to the customer, but rather a better customer experience throughout the whole cycle of a customer's engagement with a Flexibility Services provider, the avoidance of customer detriment and unrealised income, and facilitation of better understanding of offers and a clear thread of accountability across a potential stack of service delivery partners.

PROGRESS

The project is progressing as planned, the Centre for Sustainable Energy's research on customer attitudes was completed at the end of January 2023 and a research report was published. This has highlighted the main concerns for domestic consumers when participating in flexibility services and what could encourage them to participate in a future market. The content of the report has been very helpful in the drafting of the HOMEflex code and has been well accepted by industry in general.

PRIMARY STRATEGIC OBJECTIVE

MAKING A POSITIVE IMPACT ON SOCIETY

COLLABORATORS

Flex Assure

HOMEflex

PROJECT BUDGET
£331,000

START/END DATE
June 2022 – May 2024

WEBSITE
www.smarternetworks.org/project/project/nia_ssen_0061

PROJECT MANAGER
Simon O'Loughlin

2.5 NIA SSEN 0060 PORTABLE – LOW VOLTAGE FAULT PASSAGE INDICATORS (PORTABLE – LV FPI)

KEY ACTIVITIES

Project Portable – Low Voltage Fault Passage Indicators (Portable – FPI) is developing portable fault passage indicators that can be used on the low voltage underground network. The equipment will be designed to be used by DNO operational staff to help locate faults on complex radial networks by measuring fault current flow in spurs. This has the potential to enable more efficient fault locating activities and therefore provide better service for customers. This project will last fifteen months. A previous NIA project, Low Voltage – Underground Fault Location Technologies (LV-UFLT) NIA_SSEN_0037, proved the concept of this innovation.

EXPECTED BENEFITS

The project will develop a commercially viable portable fault passage indicators for use in conjunction with existing proven low voltage fault location technologies. The expected benefits of this will be reduced excavations leading to quicker repairs due to fault location improvements and avoided costs of LV repairs due to prevented faults, saving up to £1m every 5 years.

PROGRESS

The project is currently still in phase 1 – Factory Development because of delays in purchasing components, this is due to external factors and the availability of components needed for the hardware being built.

PRIMARY STRATEGIC OBJECTIVE

DELIVERING A SAFE, RESILIENT AND RESPONSIVE NETWORK

PROJECT BUDGET
£353,750

START/END DATE
May 2022 – July 2023

WEBSITE
www.smarternetworks.org/project/project/nia_ssen_0060

PROJECT MANAGER
Kevin Dennis

2.6 NIA SSEN 0062 CUSTOMER LED ELECTRIC VEHICLE EARLY REGISTRATION (CLEVER)

KEY ACTIVITIES

Project CLEVER tested the appetite of EV drivers and Heat Pump owners, including vulnerable customers, to participate in a consumer led LCT (Low Carbon Technology) registration process in support of increasing visibility of EV and Heat Pump proliferation on the LV network. This stage will fund DNO and LCT owner workshops to understand and map what data is essential for DNOs, and what data LCT owners are willing to provide. In addition, the project explored which type of incentives, on an on-going basis, could be utilised to increase visibility of EV & Heat Pump demand, and to guard against loss of visibility due to customer events e.g. a house move, acquiring a second EV or significantly changing Heat Pump demand.

EXPECTED BENEFITS

CLEVER has the potential to improve the DNOs' understanding of current LCT installations and therefore the nature of low voltage network utilisation. This knowledge can help DNOs plan for smart interventions and network reinforcement to provide the following customer benefits:

- cost deferment savings from just-in-time planning,
- improved understanding of Heat Pump uptake rates and sizes in different areas
- cost savings from reduction of LV network monitoring requirements
- improvement to quality of supply/network reliability
- reduction of EV smart charger curtailments which could lead to;
  - improved customer satisfaction
  - CO_2 saving from increased EV usage

PROGRESS

The CLEVER project is now closed. The project has identified learnings around the readiness to share and the factors that influence this such as barriers, enablers, and general data sharing attitudes. The close down report and final report are available here.

PRIMARY STRATEGIC OBJECTIVE

ACCELERATING PROGRESS TOWARDS A NET ZERO WORLD

COLLABORATOR

ElectraLink

PROJECT BUDGET
£159,800

START/END DATE
Apr 2022 – Dec 2022

WEBSITE
www.smarternetworks.org/project/project/nia_ssen_0062

PROJECT MANAGER
Fraser Macintyre

2.7 NIA SSEN 0057 DECARBONISING UTILITY TRANSPORT

KEY ACTIVITIES

The aim of the project is to report on the extent to which utilities are on the decarbonisation journey of their vehicle fleets. Key outputs include reporting on the present-day composition of utility fleet vehicles (mixture of electricity and gas network operators). Understanding the challenges, needs, global logistic trends and options for on-road and off-road vehicles. The project will also create a roadmap, including a gap analysis and assessment of intervention options to support utility fleet decarbonisation between now and 2050.

EXPECTED BENEFITS

This project collected vehicle fleet data from a range of gas and electricity utility companies. The aim was to create a fleet decarbonisation Road Map for all utilities to benchmark their own progress against and use to inform strategy. The Road Map would also identify hard to decarbonise vehicles such as unique tree cutters, heavy machinery, etc. As there will be a large number of utilities participating the aim was for the outputs of the Road Map Report to be used to help focus innovation in areas of concern and to also promote investment in these areas by companies looking to benefit from assisting with the Net Zero transition. Energy Systems Catapult will be using their whole system model to perform this study on behalf of Utilities.

PROGRESS

The project is now complete and the final report is available upon request. The report details how UK fleets can decarbonise and what policy changes are needed to meet net zero.

PRIMARY STRATEGIC OBJECTIVE

ACCELERATING PROGRESS TOWARDS A NET ZERO WORLD

PROJECT BUDGET
£117,920

START/END DATE
Feb 2022 – Nov 2022

WEBSITE
www.smarternetworks.org/project/project/nia_ssen_0057

PROJECT MANAGER
Rhys Williams

2.8 NIA SSEN 0055 NET ZERO SERVICE TERMINATION

KEY ACTIVITIES

The project will deliver a report capturing learnings on the suitability of service cables and cut-outs to accommodate the increased network loading as a result of the connection of EVs and heat pumps.

EXPECTED BENEFITS

SSEN's demand growth forecasts (Distribution Future Energy Scenarios) for achieving Net Zero by 2050 suggest that around 70% of homes will require LCT connections. This equates to 2.8 million homes (of the current housing stock). Experience of connecting LCT to existing homes has shown that domestic loading assessments are required in 42.6% of cases and cut-out upgrades in 6% of cases. The outputs of this project, combined with SPEN's iDentify project, could avoid the need for individual loading assessments for new LCT connections. This could save up to £10.8m in loading assessment costs in SSEN's license area between 2021 and 2030.

PROGRESS

Service terminations and service cable testing methodologies have been designed and agreed through a project team workshop. The design and approval of the service cable installations and test stations scenarios that have been recommended is complete.

Project planning workshops identified the three-service cable installation test scenarios recommended within the service cable Installation Literature Survey and these have been discussed and implemented.

Construction of mock cut-out enclosures has been completed. This includes the construction and testing of the five-signal conditioning and precision rectifier units and their incorporation in the test rig. This has enabled a very low AC voltage drop to be measured across the cut-outs and logged whilst the rig is running. This allows the power dissipation to be calculated over time, giving a very valuable insight as to the heating effects of the individual cut-outs compared to the other components housed in the meter enclosure. These cut-out enclosures have been subject to solar radiance in the form of lamps to understand if solar radiance has an effect on the cut-out as the temperature will increase within the enclosure. The enclosures for looped services have been agreed and constructed, testing of these looped services is under way.

PRIMARY STRATEGIC OBJECTIVE

ACCELERATING PROGRESS TOWARDS A NET ZERO WORLD

PROJECT BUDGET
£625,000

START/END DATE
Aug 2021 – Aug 2022

WEBSITE
www.smarternetworks.org/project/project/nia_ssen_0055

PROJECT MANAGER
Tim Watts

2.9 NIA SSEN 0052 OPEN CIRCUIT DETECTION

KEY ACTIVITIES

DNOs currently identify open circuit fault locations using equipment from different manufacturers with varying accuracy of results, which sometimes requires an excavation for the equipment to work. This project will investigate different types and ways of sending signals during cable fault location events to investigate which of them is best at pinpointing and locating the position of the cable open circuit fault.

EXPECTED BENEFITS

During this project the following benefits could be realised:

- More accurate location of underground cable open circuit faults on a variety of cables; of various shielding construction, and understanding any limitations of the device;
- More efficient planning of remedial repairs; and
- Greatly reduced amount of time customers are without an electricity supply (reduction in Customer Minutes Lost (CMLs)).

PROGRESS

The ability to accurately detect open circuit cable faults, including in buried cables, has successfully been proven in the lab environment. However, although the result accuracy can be better than anticipated, there remains a design fault where the design accuracy is unstable. This has been investigated and the issue is understood, with the solution being tested.

Much of the physical electronic hardware development has been completed for both the injector and the detector equipment.

The remainder of the project is concentrating on the development of the physical packaging of the equipment and the Human Machine Interface.

PRIMARY STRATEGIC OBJECTIVE

PROVIDING A VALUED AND TRUSTED SERVICE FOR CUSTOMERS AND COMMUNITIES

COLLABORATOR

HAYSYS

PROJECT BUDGET
£408,169

START/END DATE
Dec 2020 – March 2024

WEBSITE
www.smarternetworks.org/project/project/nia_ssen_0052

PROJECT MANAGER
Kevin Dennis

2.10 NIA SSEN 0051 SYNAPS 2 – FAULT DETECTION, CLASSIFICATION & LOCATION SOLUTION

KEY ACTIVITIES

The SYNAPS Fault Detection, Classification & Location Solution (SYNAPS 1 NIA_UKPN0037) project was successful in trialling a solution which predicted fault locations from electrical waveforms gathered through monitoring equipment prior to any noticeable LV activity, detecting transient or "pecking" fault events of short duration and low energy that did not rupture a fuse or trigger an LV network circuit breaker. Whilst not yet ready for a wider rollout, this technology was certainly of interest and the Synaps 2 project is aimed at increasing the technical readiness level (TRL) to a commercially ready solution.

EXPECTED BENEFITS

The project has the potential to develop a commercial underground cable fault-finding device with improved accuracy, along with procedures for operational staff to use the technology.

PROGRESS

13 sites have been installed with SYNAPS 2 sensors, and the calibration, installation and commissioning processes have been significantly improved. DNO personnel, Fundamentals' service personnel and third party (Freedom Group) personnel have been exposed to the technology.

To date there have been 13 fault locations modelled. Out of the fault locations modelled 11 have been successfully excavated and validated as the cause of the fault. These have been validated at RINA or by DNO Engineers.

PRIMARY STRATEGIC OBJECTIVE

PROVIDING A VALUED AND TRUSTED SERVICE FOR CUSTOMERS AND COMMUNITIES

COLLABORATORS

UK Power Networks, Powerline Technologies Limited, EIC Together we innovate

PROJECT BUDGET
£1,160,432

START/END DATE
Dec 2020 – Mar 2024

WEBSITE
www.smarternetworks.org/project/project/nia_ssen_0051

PROJECT MANAGER
Kevin Dennis

2.11 NIA SSEN 0054 ALTERNATIVE JOINTING TECHNIQUES

KEY ACTIVITIES

This project Introduced the concept of a new cable jointing system that requires a new methodology for installation compared to existing systems. The new learning are based around process methodologies, new equipment to use and potentially measuring when a joint is cured and when it is safe to backfill.

EXPECTED BENEFITS

This is an early stage research project and will inform the potential for future projects looking at new jointing techniques for cable insulation.

PROGRESS

The project produced the following outcomes in the last 12 months:

- Developed and successfully trialled a lightweight filler that can easily replace the sand currently used. The filler is a by-product of the coal power industry and reduces weight by 69% compared with sand. One bucket of pre-packaged sand weighs 6.5kg, the Fillite weighs 2kg.
- Developed and successfully trialled a two-part polyurethane foam filling system. The foam was 5 times quicker to fill a breach joint and 35 times lighter compared with traditional joint materials. Less than 1kg of foam is needed to fill a breach joint compared with 33.75kg of resin and sand.
- Developed a hinged clamshell with cable gland connectors and clips to make assembly easier and quicker for jointers.
- Developed a proof of concept joint which included a pre-formed electrically insulating gel. This solution requires no mixing or filling of a clamshell on site and is the quickest solution. The clamshell can be assembled and secured onto the joint within 5 minutes. The gel material however is very expensive.
- Generated benchmark weight and times for the current method which were previously unknown.

PRIMARY STRATEGIC OBJECTIVE

DELIVERING A SAFE, RESILIENT AND RESPONSIVE NETWORK

PROJECT BUDGET
£118,000

START/END DATE
Jul 2021 – Nov 2022

WEBSITE
www.smarternetworks.org/project/project/nia_ssen_0054

PROJECT MANAGER
Tim Watts

2.12 NIA SSEN 0050 NEAR REAL-TIME DATA ACCESS (NeRDA)

KEY ACTIVITIES

This is a small-scale demonstrator project which will make near real-time data available to stakeholders. This will be tested by engaging with stakeholders including those already involved in ongoing Local energy innovation projects.

EXPECTED BENEFITS

- The project will make near real-time data for the Oxfordshire area available to stakeholders and will assess its usefulness to them.
- This will be enabled through the implementation of a technology solution for near real-time DNO data within the SEPD licence area to enable its collation and presentation through an Application Protocol Interface (API).
- The project will assess the usability of the data through this API with stakeholder groups such as local community energy action initiatives Local Energy Oxford (LEO).

PROGRESS

The NeRDA Application Protocol Interface (API) and dashboards are now live and have external users accessing real-time data about SSEN's network in the Oxfordshire area. The dashboards and APIs were developed by Open Grid Systems (OGS) using their CIMphoney tool which means that all data being provided is CIM compliant. Stakeholders in Oxfordshire have been fully engaged throughout the project and have participated in developing the business and technical requirements for the dashboard and API. This informed a greater emphasis on connectivity as well as real-time network data. The project has recently been extended to provide real-time data across our north and south regions.

PRIMARY STRATEGIC OBJECTIVE

ACCELERATING PROGRESS TOWARDS A NET ZERO WORLD

PROJECT BUDGET
£1,001,207

START/END DATE
Nov 2020 – Mar 2024

WEBSITE
www.smarternetworks.org/project/project/nia_ssen_0050

PROJECT MANAGER
Fraser Macintyre

NERDA
NEAR REAL-TIME DATA ACCESS

2.13 NIA SSEN 0048 SKYLINE

KEY ACTIVITIES

This project developed a central asset database of domestic electric EV charge-points, providing detailed visibility of their geographical emergence as early as possible. Early visibility will allow DNOs to use the lead times to better plan for the required network investments or alternative solutions to support the uptake of EVs in the locations in which they are most likely to connect.

EXPECTED BENEFITS

The earlier the DNOs can have visibility regarding new (or potential) EV charge point connections, the better they can:

- Be proactive in targeting where and when investment is needed to accommodate increasing EV uptake;
- Defer or even avoid the disruption and costs of reinforcing a network by using smart solutions like smart charging and flexibility first;
- Minimise delays and disruption for customers by making sure networks are already invested in before they look to have a charge point installed.

PROGRESS

The project is now closed having met its objectives. The data sharing platform and overall concept it demonstrated are ready to be scaled up for implementation. Bi-directional data sharing (i.e. DNO info on cut-out and an MPAN lookup feature) to secure the engagement and sharing of data by DSCs is a precursor requiring further development. As noted, this type of capability is being developed under the ENA's Digitalisation of Connections initiative during 2023.

The project partners have been buoyed by the success of the project and the useability of the data, particularly as DNOs are being encouraged in the new price control period (RIIO-ED2) to invest strategically to prevent issues from materialising, which this concept of early visibility suits particularly well.

As a result the recommendation is to seek support from other DNOs to scale up the system and put in place a plan to grow the service with new data providers, DNOs and industry participants, through delivery of a scalable industry grade service. The project partners will look to establish the requirements for building this proposal in 2023 and aim to make a decision on next steps before 2024.

PRIMARY STRATEGIC OBJECTIVE

ACCELERATING PROGRESS TOWARDS A NET ZERO WORLD

COLLABORATORS

UK Power Networks, ElectraLink, EIC Together we innovate, CrowdCharge

PROJECT BUDGET
£811,624

START/END DATE
Sep 2020 – Jun 2022

WEBSITE
www.smarternetworks.org/project/project/nia_ssen_0048

PROJECT MANAGER
Richard Hartshorn

2.14 NIA SSEN 0047 TraDER

KEY ACTIVITIES

TraDER created a platform and a single access point, to make it easier for distributed energy resources to provide services such as balancing, stability, and network capacity. In this way, "whole system value" is maximised by enabling price-driven coordination between NGESO, DSO and other market participants. Project TraDER developed and traded flexibility in as near real-time as possible. The solution sought to integrate the flexibility market both horizontally (i.e. with other, longer term Distribution System Operator (DSO) products) and vertically (i.e. other trades within the same time period, such as the Balancing Mechanism).

EXPECTED BENEFITS

There are significant learning benefits associated with the project as SSEN acted as a facilitator to TraDER by delivering data from the Active Network Management (ANM) system currently operating in Orkney and then facilitated changes to the ANM system in order to execute flexibility trades created by the TraDER platform. In return, TraDER delivered outputs which will allow SSEN to assess the impact of how trades can be implemented on the ANM scheme, e.g., changes to Last In First Off (LIFO) connection order, and associated costs to SSEN.

PROGRESS

The project is now closed and achieved the following key outcomes, as reported during the BEIS TraDER project closedown:

- TraDER is a first working example of a DNO/DSO-enabled market that was operated by a neutral market facilitator and not a DNO/DSO.
- The project provided a first example of a DNO operating an ANM system enabling a market by providing network security against flexibility non-delivery (as an alternative to prevention of market participation due to exclusion of ANM-located DER for some ESO products/markets).
- This learning will be further developed via the Bi-TraDER NIC project.

PRIMARY STRATEGIC OBJECTIVE

PROVIDING A VALUED AND TRUSTED SERVICE FOR CUSTOMERS AND COMMUNITIES

COLLABORATOR

ELECTRON

PROJECT BUDGET
£275,000

START/END DATE
Mar 2020 – Feb 2023

WEBSITE
www.smarternetworks.org/project/project/nia_ssen_0047

PROJECT MANAGER
Peter Taddei

2.15 NIA SSEN 0044 SMART HAMMER

KEY ACTIVITIES

The Smart Hammer project will develop a new hammer tool for testing and inspecting the asset health of wood poles. The project will field trial the Smart Hammer on completion of development across the SSEN Operational Regions. Repeatedly striking a pole with the hammer measures the health of the pole and its asset health score is recorded in an accompanying Smart Hammer app.

EXPECTED BENEFITS

Benefits of this project will be the establishment of a technically and commercially viable Smart Hammer, with accurate and repeatable results to help detect internal rot or damage to wooden poles. The project aims to identify if the Smart Hammer is a consistent and reliable alternative to the traditional method of wood pole inspections, which use a conventional hammer and the operator's interpretation of the strike. Earlier detection of deteriorating poles will enable proactive replacement, preventing unplanned supply interruptions due to broken poles thus improving system reliability.

PROGRESS

The Smart Hammer has been rolled out to operational staff across SEPD and SHEPD with 50 hammers in circulation. All staff using the smart hammer received training in its use and continue to receive ongoing support. For a period of three months, pole inspection staff used the smart hammer as their primary testing device. This generated over 3,000 smart hammer inspections in the smart hammer portal. This number of inspections gives the project a statistically significant data set in order to assess and improve the scoring algorithm. In additional to this, key feedback was captured from the pole inspection staff on the use and reliability of the smart hammer.

PRIMARY STRATEGIC OBJECTIVE

PROVIDING A VALUED AND TRUSTED SERVICE FOR CUSTOMERS AND COMMUNITIES

COLLABORATOR

Spectral Line System Ltd

PROJECT BUDGET
£930,000

START/END DATE
Feb 2020 – Mar 2024

WEBSITE
www.smarternetworks.org/project/project/nia_ssen_0044

PROJECT MANAGER
Kevin Dennis

2.16 NIA SSEN 0043 WHOLE SYSTEM GROWTH SCENARIO MODELLING PHASE 2

KEY ACTIVITIES

This project follows on from NIA_SSEN_0030 Whole-System Growth Scenario Modelling, which developed an initial model tool demonstrating network impacts and informed possible investment decisions over a two-decade time period.

EXPECTED BENEFITS

1. Enhance a model tool to incorporate new governmental targets for economic and sustainable action plans and provide greater granularity by incorporating the 11kv network.
2. Understand the possible patterns of change associated with the Scottish Government 2045 climate change targets (Note: the UK target is 2050) in the distribution networks served by a single Grid Supply Point in an area of accelerated EV growth. Develop optimum solutions to meet whole system needs.
3. Validate and calibrate inputs for whole system planning with existing or planned requirements/expectations for the Local Authorities to avoid unnecessary extra work in producing local energy plans/strategies.
4. Develop a methodology and framework that allows the two-way transfer of knowledge and understanding between network operators and those that make investment decisions in the areas served by the network, to facilitate efficient whole system planning.

PROGRESS

We have contracted Advanced Infrastructure to provide the LAEP+ tool for both Dundee and Oxford City Councils to start trialling. This is a web GIS tool that allows Local Council Planners to place new energy projects. The tool shows where network constraints are present and therefore gives Local Council Planners an indication where energy projects may result in higher costs i.e. if area is highlighted green there is no constraint, if highlighted red then there is a constraint, or a constraint will be caused by the new connection and likely cause higher connection costs. The LAEP+ tool will also show SGN, the gas network operator in Dundee, data to provide Local Council Planners additional data layers when making investment decisions. Local Council projects can then be viewed by all parties to work collaboratively in suggesting new locations or investment options.

PRIMARY STRATEGIC OBJECTIVE

ACCELERATING PROGRESS TOWARDS A NET ZERO WORLD

COLLABORATORS

Dundee City Council

Baringa Brighter together

CATAPULT Energy Systems

PROJECT BUDGET
£1,300,000

START/END DATE
Jan 2020 – Jun 2023

WEBSITE
www.smarternetworks.org/project/project/nia_ssen_0043

PROJECT MANAGER
Rhys Williams

2.17 NIA SSEN 0038 E-TOURISM

KEY ACTIVITIES

The project's aim is to carry out traffic flow and network modelling to understand the impact of EV charging on the distribution network. It includes the design and development of specific network and local flexibility solutions to assist with security of electric supply to EV charging hubs to deal with highly seasonal charging peaks in the tourist season.

EXPECTED BENEFITS

The benefits of this project are an improved understanding of how increased EV uptake, combined with tourist behaviour, will impact seasonal peak electric demand on the network, identifying the scale, location and duration of any increased charging followed by an in-depth study of specific locations. It has to enhance stakeholder engagement by helping local community groups, local authorities and other organisations to understand the impact that heightened EV tourism will have on local demand. It has also informed investment strategies for network development based on expected impacts of EV uptake and tourist patterns, thus coordinating future network capacity efficiently.

PROGRESS

The project is now closed and has achieved its aims. Reports detailing the research, the findings, and the proposed solutions are published on the ENA website at **https://smarter.energynetworks.org/projects/nia_ssen_0038**. Learning relating to the Scottish phases and the initial Isle of Wight evaluation phase was presented at ENIC in 2021, and videos and animations were also used to inform and engage stakeholders.

The final report is available on our website at **https://www.ssen.co.uk/globalassets/E-Tourism/2208-E-Tourism-alternative-solutions.pdf.** This report details the patterns we can expect to see, which areas will experience the impact of seasonal demand and what can be done about it by local authorities, tourist sites, DNOs, and other organisations.

Local flexible solutions are also identified and ranked in order of cost and simplicity so they may be used as a toolkit of people looking to connect any number of EV charge points in rural locations.

PRIMARY STRATEGIC OBJECTIVE

ACCELERATING PROGRESS TOWARDS A NET ZERO WORLD

COLLABORATORS

elementenergy

Scottish Government
Riaghaltas na h-Alba
gov.scot

TRANSPORT SCOTLAND
CÒMHDHAIL ALBA

PROJECT BUDGET
£401,000

START/END DATE
Jul 2019 – Sep 2022

WEBSITE
www.smarternetworks.org/project/project/nia_ssen_0038

PROJECT MANAGER
Simon O'Loughlin

2.18 NIA SSEN 0034 SUBsense

KEY ACTIVITIES

The scope of the project is to install real-time monitoring systems on five submarine electricity cables in a variety of different locations interconnecting the Scottish Islands to monitor for third party intervention, cable movement and early fault detection. These cables will be monitored during the project and the data gathered will be assessed by the relevant teams. An evaluation will be completed at the end of the trial with recommendations of the system's suitability for transfer to BAU.

EXPECTED BENEFITS

- Install multiple Distributed Acoustic Sensing (DAS) systems onto fibre optic embedded in submarine electricity cables, providing real time monitoring.
- Establish an effective communications method to enable real time alerts from remote islands to be received, investigated and actioned from asset management.
- Document a baseline condition of the monitored submarine cables.
- Monitor for an extended period to assess for alerts from third party intervention, cable movement or cable faults.
- Gain an understanding of the system's suitability as a condition monitoring tool for business as usual adoption and its impact on asset management.
- Create a specification for condition monitoring best practices to be used on submarine cables.

PROGRESS

Five submarine cables have been selected for trials and surveys are underway to identify works required to complete installation of fibre embedded within cables into primary substations for connection to DAS monitoring equipment. Good progress has been made into establishing and testing a remote communication method to gather information from the field. Installations are targeted by end of 2023.

PRIMARY STRATEGIC OBJECTIVE

DELIVERING A SAFE, RESILIENT AND RESPONSIVE NETWORK

COLLABORATORS

AP SENSING advanced photonic

Wireless innovation

PROJECT BUDGET
£1,458,218

START/END DATE
Aug 2018 – Mar 2024

WEBSITE
www.smarternetworks.org/project/project/nia_ssen_0034

PROJECT MANAGER
Gregor Tait

2.19 NIA SSEN 0065 STORM AI

KEY ACTIVITIES

The Storm AI project seeks to understand the potential role that Artificial Intelligence (AI) and Machine Learning (ML) could play in providing better information for customers who may have been impacted during a storm.

EXPECTED BENEFITS

The main benefits to customers will be in relation to increase accuracy in the Estimated Time of Restoration (ETR). Benefits to Distribution Network Operators (DNO) will be due to greater efficiency during storms and weather events this is estimated at £2,061k for the next five years based on assumed similar weather patterns.

PROGRESS

A trail ingest engine was created by Open Grid Systems, the ingest engine allows SSEN staff to analysis images that have previously been sent in through power track and place tags on those images identifying what is taking place in that situation and what would be required to resolve the fault. The ingest engine is currently being used by our network integratory teams to access these power track images, this assessment will be used to:

- Validate (or amend) the classification questions, to make sure we're feeding the model with the right training metadata, so it can best support the Storm Mode triage process in the future.
- Compare the model services and cost profiles from the various vendors (AWS, Azure etc) to see what provides the best value.
- Acknowledge and/or change any initial UX/UI issues for the classifier, as classifying thousands of images for training purposes should be both a quick and error-inhibiting experience for the human.

PRIMARY STRATEGIC OBJECTIVE

PROVIDING A VALUED AND TRUSTED SERVICE FOR CUSTOMERS AND COMMUNITIES

COLLABORATOR

Open Grid Systems

PROJECT BUDGET
£137,500

START/END DATE
Dec 2022 – Dec 2023

WEBSITE
www.smarternetworks.org/project/project/nia_ssen_0065

PROJECT MANAGER
Fraser Macintyre

2.20 NIA SSEN 0035 INFORMED LIGHTNING PROTECTION

KEY ACTIVITIES

Lightning strikes are known to cause a significant number of supply interruptions to our customers. In our Scottish Network, lighting strikes are the second highest cause of customer interruptions and minutes lost and in our Southern Network it is the fifth highest cause. Therefore, there is a need to reduce the impact that lighting related faults have on our customers.

EXPECTED BENEFITS

The main benefit of this project is expected to be a reduction in customer supply interruptions caused by lightning-related faults.

PROGRESS

To date Circuits that have had lightning surge arresters installed on them have experienced a 42% improvement in IIS costs due to lightning vs the previous 3 years where no lightning protection has been installed and a 76% improvement when comparing against the previous 10 years. This has been calculated by measuring lightning related IIS costs for the years before and after lightning protection devices were installed. However, even with a 42% improvement in IIS costs, the payback period is 19 years, which is longer than the expected lifespan of the surge arresters. It is probably unfair to compare IIS costs to the previous 10 years as many circuits have been changed over the time e.g. back-fed to reduce IIS impact. It is clear that lightning protection can play a role for reducing IIS costs, but it needs to be cheaper or longer lasting to have a cost benefit. This is one of the key reasons for trialling the streamer devices as part of this project.

PRIMARY STRATEGIC OBJECTIVE

DELIVERING A SAFE, RESILIENT AND RESPONSIVE NETWORK

COLLABORATORS

ElectraLink

Open Grid Systems

Tyco Electronics

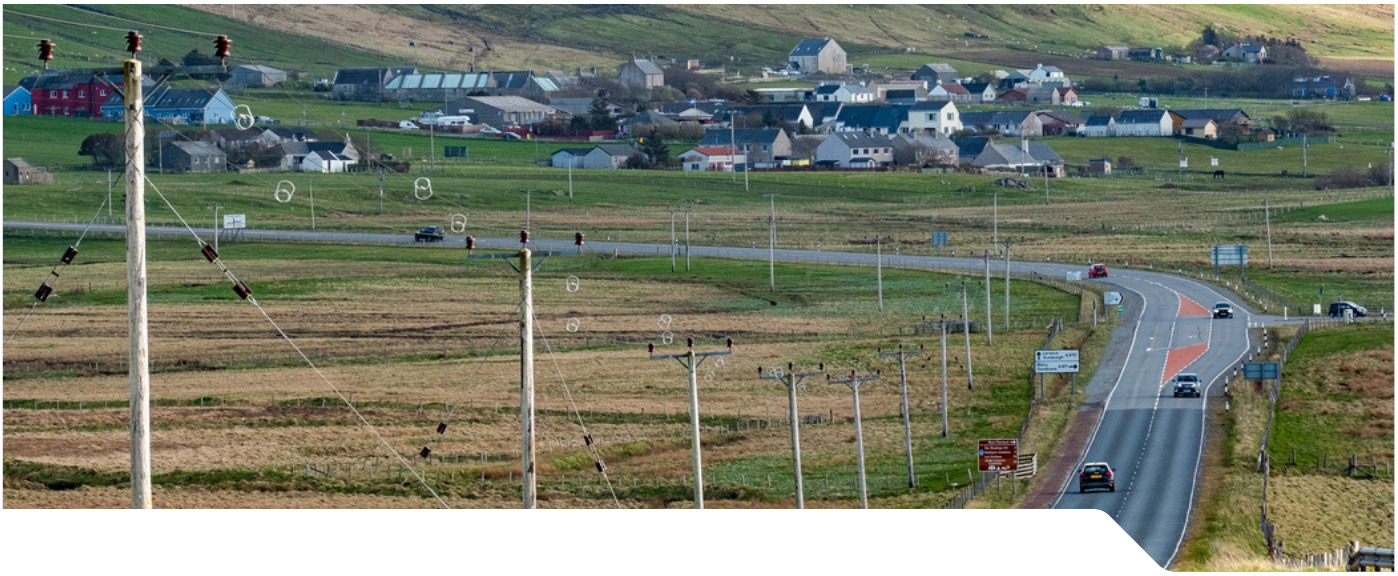
PROJECT BUDGET
£521,000

START/END DATE
Mar 2019 – Feb 2024

WEBSITE
www.smarternetworks.org/project/project/nia_ssen_0035

PROJECT MANAGER
Rhys Williams

2.21 NIA SSEN 0066 POWER SUPPLY FOR POLE MOUNTED LV MONITORING DEVICES WHERE NO NEUTRAL IS PRESENT.



KEY ACTIVITIES

This project is designed to develop learning to understand the specific issues associated with deriving a 230V supply where no neutral is present at pole top monitoring installations. The scale will allow application to several locations which will each have a unique existing physical installation of equipment. The project will demonstrate if a 230V power supply unit is possible in the real-world environment and if it is successful, will report whether the solution is easily scalable.

EXPECTED BENEFITS

There are around 50,000 overhead transformers within SSEN, both North and South Regions, and our ED2 plans were to monitor around 20% of them, around 10,000 units. Approximately 20% of them supply less than three customers. Experience gained from the linespersons operating in the field indicates that those with less than three customers are most likely to have the neutral on the first pole out, inhibiting the installation of pole mounted transformer LV Monitoring installation. The percentage incidence of vulnerable customers is higher in rural locations with an increased incidence of fuel poverty. Increasing the locations where pole mounted monitoring can be installed will enhance the service that can be offered to our customers.

PROGRESS

The project was registered in March 2023 therefore work is ongoing, there is no performance update available as yet.

PRIMARY STRATEGIC OBJECTIVE

DELIVERING A SAFE, RESILIENT AND RESPONSIVE NETWORK

PROJECT BUDGET
£75,500

START/END DATE
Mar 2023 – Mar 2024

WEBSITE
www.smarternetworks.org/project/project/nia_ssen_0066

PROJECT MANAGER
Bob Hopkins

2.22 COLLABORATION PROJECTS LED BY OTHER NETWORK LICENSEES

Below is a list of other projects that SSEN is participating in. The projects are led by our collaboration partners hence further details of those projects can be found in their relevant summaries and project progress reports. To provide some indication of where those details can be found, the leading parties are given below next to each project.

Project number	Project title	Lead party
NIA_SPEN_008	Appeal (Wood preservatives)	SP Energy Networks
NIA_UKPN_047	HV Feeder monitoring to pre-empt faults	UK Power Networks
NIA _SPEN_0055	On-Site Non-Intrusive Polchlorinated Biphenyls (PCB) Tester	SP Energy Networks
NIA _SPEN_0057	Enabling Renewable Heat	SP Energy Networks

FURTHER INFORMATION

The Innovation Strategy for SEPD and SHEPD can be found at the link below:

Distribution Innovation Strategy

https://ssen-innovation.co.uk/innovation-strategy/

Further details of all the NIA projects summarised above can be accessed through the following link:

ENA Smarter Networks Portal – SSEN Projects

https://www.energynetworks.org/electricity/futures/network-innovation/electricity-networks-innovation-strategy.html

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