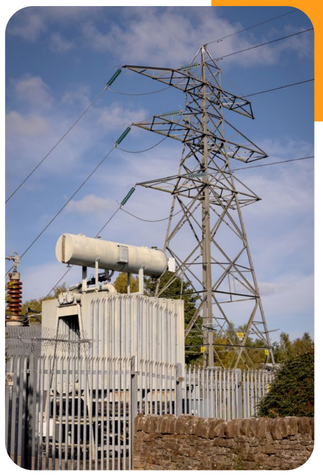
SP Transmission

Network Innovation Allowance Annual Summary 2024-25



SP Energy Networks

Contents

At SP Energy Networks we're proud to play a vital role in accelerating the Net Zero transition – both in Scotland and the rest of the UK. We are fully aligned with the decarbonisation ambitions of the national and devolved Governments, and we are committed to turning those goals into reality.

Our innovation strategy is central to this mission. It empowers us, as a Transmission Owner, to lead the transition in a way that's smart, sustainable, and cost-effective for our customers. As we modernise and grow our asset base, we're focused on keeping it secure, reliable, and resilient – while minimising our impact on the climate and delivering real value to the communities we serve.

Eddie Mulholland
SP Energy Networks Director
of Processes and Technology

If you have an idea to share or would like more information on a specific project, please contact our innovation team at: innovation@spenergynetworks.co.uk

This NIA Annual Summary Report outlines the progress we've made in applying the Network Innovation Allowance (NIA) to deliver on our RIIO-T2 Innovation Strategy throughout the 2024–25 regulatory year. At the end of the report, you'll find a summary of all NIA projects that were initiated, ongoing, or completed during this period.

The electricity transmission sector is undergoing a period of rapid transformation and we've recently published our £10.6bn RIIO-T3 Business Plan that sets out how we will invest to deliver the growth that's required for a clean power system. As we enter the final stretch of the RIIO-T2 Price Control, we are focussed on readying the solutions we have developed for rollout into our day-to-day operations so that we can realise the benefits for our stakeholders.

Our transmission network is essential for the integration of new renewable energy sources and the delivery of electricity from generation sites to demand centres across our licence area and beyond. We are aligning our NIA portfolio with these national priorities to ensure our network – and our people – are equipped to support this transformational growth. Our innovation efforts are focused across four strategic clusters:

- Network Modernisation
- System Security and Stability
- Network Flexibility
- Digitalisation of Power Networks

£10.6bn
investment to deliver growth in RIIO-T3

The NIA funding we receive helps us target early opportunities with agility – it gives us the freedom to explore bold new ideas, test emerging technologies, and fast-track solutions that contribute to a smarter, more sustainable Transmission network. By identifying opportunities early and reducing risk, we're laying the groundwork for a future-ready energy system that benefits everyone This impact is clearly demonstrated through our diverse portfolio of RIIO-T2 innovation projects:

- **Intelligent Connections Explorer** is developing an AI-driven platform to identify optimal solutions for new connections – balancing available capacity, cost and timelines to improve the new connections experience for our customers
- **Cyber-SAFEN** and **Cyber-RIAST** are developing our understanding of the cyber-threats facing transmission network and developing intelligent solutions to detect and eliminate them for a cyber-secure grid
- **Innovative Monitoring of GIS Cable Terminations** is contributing to the continued reliability of our network – developing new technology to monitor and predict asset issues before they occur.

Looking ahead, I'm excited by our T3 plan and the opportunities it brings. Building on the strong foundations of our T2 NIA portfolio, we're ready to support the rapid growth the transmission sector needs to meet the UK's Net Zero ambitions. It's a pivotal moment, and we're committed to driving progress with the same energy, innovation, and collaboration that have brought us this far.

To find out more about the innovation planned see our RIIO-T3 Business Plan.

Network Innovation Allowance Portfolio Summary

SPEN Projects

14
Active SPEN-led Projects 2024/25

13
Live Projects

1
Completed Project

In the 2024/25 reporting period, we have registered 3 new NIA projects.

Partner-led Projects

6
Active Collaboration Projects 2024/25

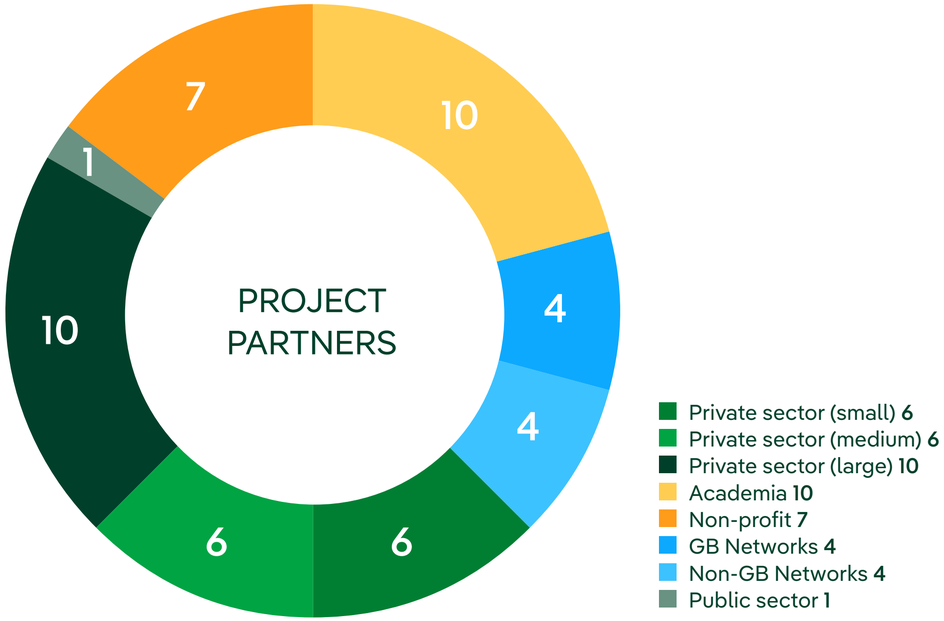
3
Live Collaboration Projects

3
Completed Collaboration Projects

Our Commitment to Innovation

The Clean Power 2030 ambition sets out a target for Great Britain to meet its total annual electricity demand using clean power sources. To enable this vision, we're investing in our transmission network to ensure we can integrate renewable generation faster and meet the rapidly growing electricity demand.

Innovation plays a crucial role in achieving this. As the Transmission Operator (TO) for Central and Southern Scotland, we play a crucial role in meeting the UK's Net Zero targets, facilitating the use of Net Zero energy and enabling the integration of renewable generation into the electricity network.



Working with a broad range of project partners ensures we have access to diverse ideas and capabilities to support our innovation. We're proud that 25% of our project partners fall under the Small-to-Medium Enterprises (SMEs) category and 21% are from the academic sector – which demonstrates our commitment to supporting grassroots innovation.

Over the past year, we have continued to make progress across the innovation clusters outlined in our RIIO-T2 Innovation Strategy.

Our RIIO-T2 Innovation Strategy addresses the key challenges we anticipate in the energy transition and reinforces our commitment to delivering value for our customers and stakeholders. Within the strategy, we have established four Innovation Clusters aligned with the ENA Innovation Themes. These clusters are central to guiding our innovation efforts during the T2 price control period and help ensure a well-balanced Network Innovation Allowance (NIA) portfolio.

Network modernisation

Expanding the transmission network is strategically vital to enabling new renewable generation and to support the evolving energy landscape. We are harnessing innovation to build a modern, future-ready network – one that prioritises sustainability and is resilient to the impacts of climate change. Smart asset management is a key pillar of our modernisation efforts and our **Innovative Monitoring of GIS Terminations** project is exploring the use of sensors to anticipate emerging asset issues before they occur – so we can plan proactive interventions before a fault occurs.

Digitalisation of power networks

By embedding digital technologies and enhancing our data analytics capabilities, we are gaining deeper insights into our network operations and asset performance.

Through our **Intelligent Connections Explorer** project, we're putting more data in the hands of our customers and helping them to visualise potential connection points on our transmission network to accelerate decision making and route finding.

A key example is our **Cyber-RIAST** project – a tool designed to proactively monitor the cyber-physical energy system. It provides a comprehensive view of threat risk metrics and conducts impact assessments to evaluate the resilience of the physical energy system.

System security and stability

SP Transmission plays a vital role in delivering electricity to 80% of Scotland's population. As demands on the UK energy system continue to grow rapidly, maintaining a reliable and resilient transmission network is more critical than ever.

One example is the **DynaLoad** – Dynamic loading of a transformer insulation project which will characterise the long-term mechanical endurance of transformer insulation under heavy dynamic loading conditions through testing and modelling.

Network flexibility

As the generation mix continues to shift – driven by the rapid growth of renewable energy sources such as wind, solar, and battery storage – we must integrate new forms of flexibility into the transmission system to ensure stability, reliability, and efficiency. This includes leveraging technologies like demand-side response, energy storage, and smart grid solutions. To effectively manage this complexity, we are adopting a whole-system approach to network planning and operation, which considers the interdependencies between transmission, distribution, and generation. This holistic perspective enables more coordinated decision-making, optimises investment, and ensures the system is equipped to meet future energy demands while supporting the transition to Net Zero.

Project Highlights

The projects across our portfolio range in scale and scope to deliver the most impact and benefit to our customers and stakeholders. For this summary report we have spotlighted the projects with the most significant learnings, providing a snapshot of the strategies being employed and the outcomes being delivered.

Registered ID:	Registered value:	Project start date:	End date:	Status:	Link
NIA_SPEN_0062	£200,000	August 2021	December 2025	Live	https://smarter.energynetworks.org/projects/NIA_SPEN_0062/

System Security and Stability

DynaLoad – Dynamic loading of transformer insulation

The DynaLoad research supports system security and stability by reducing the risk of transformer failure through better understanding of insulation performance under dynamic loading. This ensures a more resilient grid, essential for a reliable sustainable energy transition.

Overview

DynaLoad will characterise the long-term mechanical endurance of transformer insulation under heavy dynamic loading conditions through testing and modelling.

Benefits

DynaLoad will benefit a number of areas associated with the energy system transition.

A reliable electric power infrastructure is vital for the energy system transition – and technology-driven endeavour to reduce greenhouse gas emissions through electrification and increased ratio of renewables in the energy mix. Ultimately, a better understanding of risks from rapid dynamic loading of power transformers will strengthen the existing and future energy infrastructure: To ensure access to affordable, reliable, sustainable and modern energy for all. Resilient and dependable power transformers are prerequisites for high-powered charging facilities for heavy duty electrically powered zero-emission transportation. It will bring better maintenance procedures, less risk of failures and improved security of supply.

There are also clear environmental and sustainability benefits. Reliable physical models for winding insulation under dynamic loading, supported by real-life sensor data from an in-service transformer, will facilitate the development of hybrid modelling / digital twins for condition-based maintenance, and allow more precise estimates of transformer life expectancy.

Progress

The activities performed in the last year have revolved around improving and then validating the numerical models used for predicting the clamping pressure response to sudden loads. The project has then compared numerical model results with the clamping pressure monitoring results which proved that the models are working as expected. Finally, dissemination is a key activity in DynaLoad, especially with their involvement in CIGRE working group (more details below). Further dissemination will take place in the following year, as we look to publish our reports detailing our findings.

In summary, the activities that took place in 2024/25:

- Experiments are performed observing the behaviour of clamping pressure under different temperature and moisture conditions. Resulting parameter values of material properties are used in numerical modelling.
- Numerical models of winding clamping pressure and thermal behaviour are validated by measurements done on an in-service transformer.
- Clamping pressure and temperatures in different parts of an in-service transformer are measured and analysed. Measured values are compared to numerical results with good fit. Also, special field studies to investigate how e.g. cold starts and high load affect clamping pressure are performed.
- The project leader is a part of the CIGRE joint working group D1/A2.79 “Improved understanding of dynamic behaviour of winding insulating materials in liquid insulated power transformers” that started during the DynaLoad project period. This work will continue after the DynaLoad project end in September 2025.

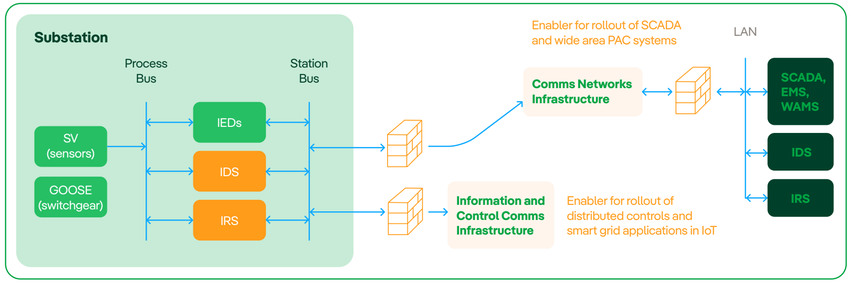
Registered ID:	Registered value:	Project start date:	End date:	Status:	Link
NIA_SPEN_0064	£650,000	May 2022	April 2026	Live	https://smarter.energynetworks.org/projects/NIA_SPEN_0064/

Digitalisation of Power Networks

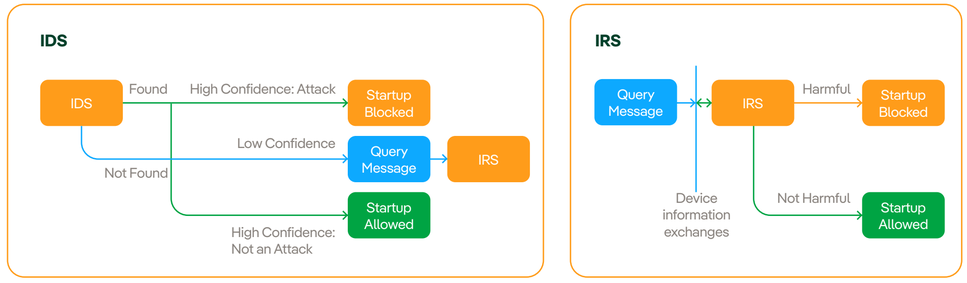
Cyber Security for Active and Flexible Energy Networks (Cyber-SAFEN)

Developing an AI-enabled cyber security platform to enable a resilient digital power network.

Overall solution schematic.



Detail of 2-stage classification system.



Overview

Cyber-SAFEN aims to build and demonstrate an integrated cyber defence (ICD) platform to provide a foundation on which to build essential cyber safe and resilient functions for electricity networks PAC, WAMS and SCADA systems against advanced cyber-attacks. Cyber-SAFEN uniquely focuses on a combined intrusion detection (IDS) and intrusion response system (IRS) powered by advanced AI and machine learning technologies to build a dual defence system against advanced cyber threats.

Benefits

The energy system needs to transform significantly to reach our climate change targets at the lowest cost. In line with the UK government, UK Energy networks and SPEN digitalisation strategies, cyber security is a key enabler in the energy system transition as we move to digitise our networks to enable Net Zero. Having a secure infrastructure reduces the likelihood of successful attack and the harm caused. The key benefits realised by undertaking this project include:

- Reduced risk of outages and damage caused by cyber attacks
- Enable increased digitalisation and automation across the network
- Builds a secure and resilient platform on which to rollout further application.

A reliable electricity supply is critical to the day-day society function. The 2015 Ukraine energy system cyber-attacks resulted in power outages for nearly 230,000 consumers in Western Ukraine. Cyber-SAFEN looks to develop systems to avoid such situations as well as mitigating any losses they could cause.

Cyber-SAFEN is an enabler to the digitalisation of substations. Based on the completed innovation project FITNESS (which looked to do this for the first time) the first UK digital electricity transmission substation will bring the following benefits over the next 15 years:

- 10% reduction of substation new-build and replacement costs, equating to £71m-£107m at the GB level
- 4-5% reduction of constraint payments equating to £27m-£80m
- Carbon savings equating to £13m-£34m through reduction in constraints and reduced use of copper in substations
- Cyber-SAFEN therefore has the potential to build on these savings when enhancing digital substations.

Progress

The project aims to build an Integrated Cyber Defence (ICD) platform. To accomplish this aim, the project organises its deliverables into four distinct stages:

- Stage 1 – Network and Data Modelling
- Stage 2 – Cyber Intrusion Detection System (IDS) design and specification
- Stage 3 – Intrusion Response/defence System specification and development
- Stage 4 – Performance evaluation and analysis of Cyber-SAFEN solutions.

In Stage 1, we developed a data-driven design and technical specification for the platform. This fed into Stage 2, where we developed an adaptive Intrusion Detection System which uses machine learning to detect and classify cyber threats.

To enhance the accuracy of the machine learning approach, we developed an Intrusion Response System (IRS) to verify the results. This acts as a safeguard and enhances the overall accuracy and reliability of the system's decision-making ability by detecting false positives or false negatives.

The project has shown that pairing an Intrusion Detection System with an Intrusion Response System can successfully identify known and unseen cyber intrusion events with a very high confidence.

Lessons learnt so far

To take the Cyber-SAFEN solution into operation, it's important that the solution is tested in a real-world environment. We propose that future projects should look to de-risk real-world trials by first developing comprehensive simulation capabilities. In this way, it would be possible to replicate real-world conditions to test the system with lower risk.

These simulated environments would allow for safer rollout within a controlled environment that closely mirrors real-world operation. At the same time, this approach would generate more training data to further train and validate the machine learning models on a range of diverse scenarios. This would be a valuable step in supporting network operators to roll out this technology.

Registered ID:	Registered value:	Project start date:	End date:	Status:	Link
NIA_SPEN_0081	£400,000	March 2023	March 2026	Live	https://smarter.energynetworks.org/projects/NIA_SPEN_0081/

Network modernisation

Innovative Monitoring of GIS Cable Terminations

Monitoring and early-warning system for cable contraction-related faults.

Overview

In Gas Insulated Switchgear (GIS), it is important that the cable terminations are mechanically secured. There is a risk that during large and rapid load reductions, which can cause the cable to contract along its length, the conductor may pull back from the cable termination. This could result in:

- High resistance, generating heat and arcing across the loose connection.
- Deterioration of the termination insulation, leading to partial discharge activity.

There is no way of non-intrusively testing the terminations in situ to find out if they are secure. A monitoring system would detect the effects of cable contraction using sensors that can be applied to the outside of the cable, termination or GIS, linked to an alarm system to alert staff to the hazard of a termination that has suffered from cable contraction.

Benefits

- Early detection of faults before it causes unplanned outages and/or damages to assets.
- Improved grid reliability and stability.
- Improved safety: By identifying high-resistance connections and early signs of insulation degradation, the monitoring system helps prevent arcing and thermal damage that could lead to equipment fires or explosive failures, protecting nearby infrastructure and reducing the risk of hazardous conditions for operational staff during fault response or repair.
- Avoids Network Constraint Costs: Early detection of termination faults can help prevent unplanned outages and the need for emergency repairs, which often require costly network reconfigurations to maintain supply, helping to avoid significant constraint payments and operational disruptions.

Progress

The monitoring system and sensors, which measure temperature changes, partial discharge and vibration in order to detect instances where cable terminations are not fitted correctly inside the GIS, is currently in manufacturing. Site visits have been completed in preparation for installation later this year. The sensor design has been finalised, and locations for installation agreed upon.

Thermal modelling was completed successfully, confirming the feasibility of thermal fault detection. The monitoring system design and sensor production are coming to an end, with in-house testing planned before installation. The project team procured a conductor and a cable sealing end to perform the testing required and calibrate the sensors as needed before trialling the solution on site. The project remains on schedule for data monitoring and long-term deployment.

The completed objectives in 2024/25, which have been set out in section 2 are:

- Collect all mechanical and material information in order to establish the requirements for thermal modelling
- Commission modelling exercise
- Carry out thermal modelling and review the results
- Determine if the thermal fault detection is possible
- Design a monitoring system that can measure required parameters
- Design sensors and agree where they can be fitted
- Factory performance testing of the Conan device and the AAAC detector head has now been completed.

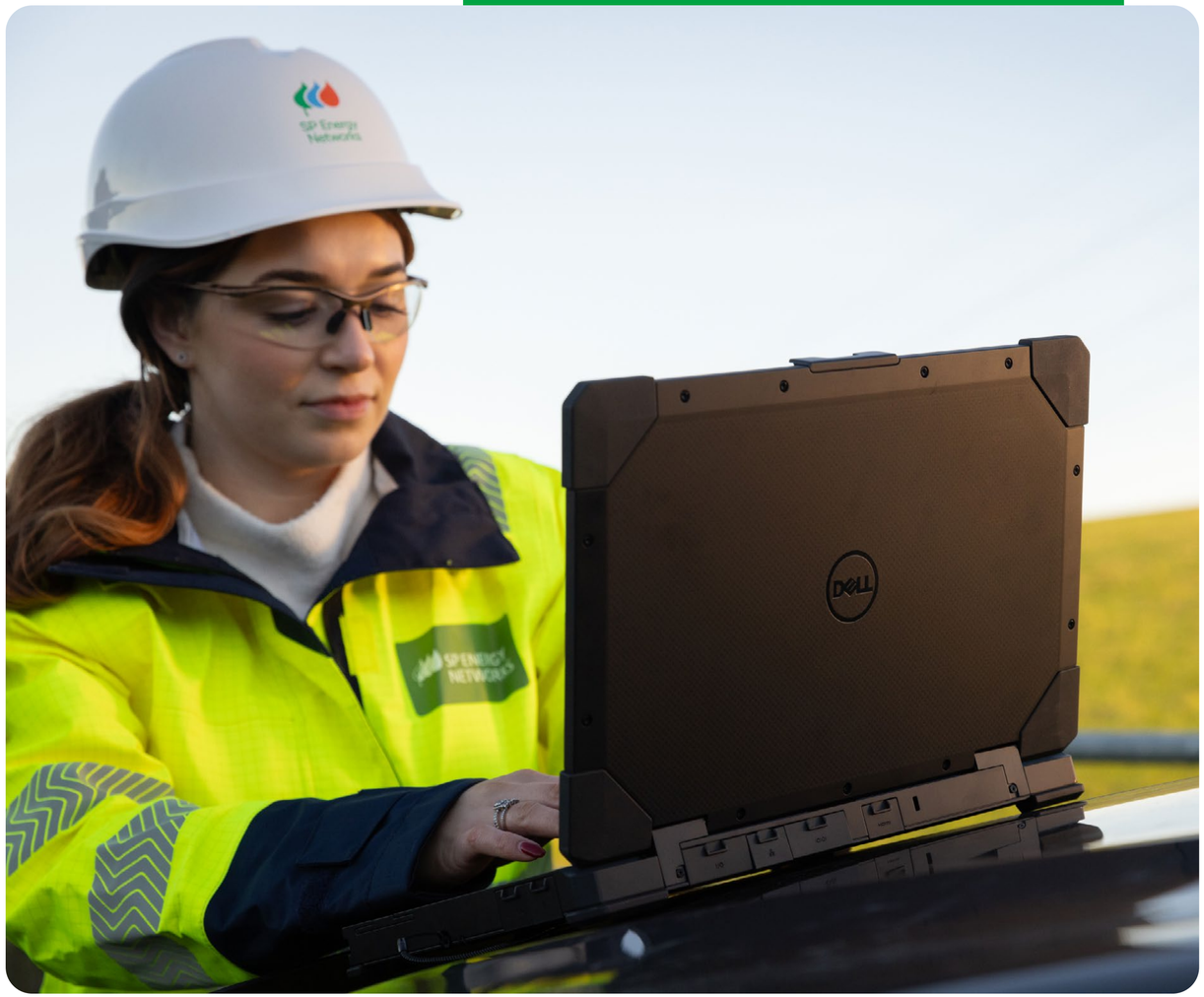
Registered ID:	Registered value:	Project start date:	End date:	Status:	Link
NIA_SPEN_0090	£600,000	May 2024	October 2026	Live	https://smarter.energynetworks.org/projects/nia_spen_0090/

Digitalisation of Power Networks

Cyber Risk Impact Assessment (Cyber-RIAST)

Producing a tool that scans the energy system and ensures a safe, resilient and robust system.

Avoid the impact of cyber threats by developing a risk assessment tool



Overview

The main objective is to develop a fully responsive cyber risk impact assessment tool, Cyber-RIAST, that proactively scans the status of the cyber-physical energy system, providing a detailed picture of threat risk metrics and performing impact analysis on the physical energy system. The purpose of this solution is to intercept cyber-attacks from their infancy and avoid the impact of cascading cyber threats.

The key outcomes are:

- The development of a cyber-physical system risk impact awareness tool through the holistic approach.
- The development of a cyber intelligent system using sophisticated modelling, Machine Learning and Artificial Intelligence methodologies.
- The determination of cyber-physical system risk impact assessment criteria under various risk impact scenarios through both offline and hardware in loop testing.

Benefits

Cyber-RIAST proactively identifies potential vulnerabilities early in the design and operational phase, avoiding cyber-attacks. The impact of cybercrime is difficult to quantify but is estimated to cost the UK roughly £27bn per year.

Progress

The overall aim of the Cyber-RAIST project is to develop and demonstrate an early warning tool for cyber threats in power systems. To achieve this, the project is structured into four key stages:

- **Stage 1** – Network modelling and resilience studies;
- **Stage 2** – Creation of Cyber System Vulnerability Models;
- **Stage 3** – Development of cyber intelligent System; and
- **Stage 4** – Determination of cyber risk impact assessment criteria.

So far, Stage 1 is ongoing:

- Milestone 1 has been delivered by the University of Manchester, and it is a report discussing the critical literature review for risk assessment, early warning, and vulnerability management for cybersecurity. Analysing the current scenario for those topics, the University has successfully confirmed that this solution is, indeed, novel.
- Milestone 2 is being worked on by the University of Manchester and discusses the physical network modelling and grid resilience index calculation. A modified IEEE 9-bus system is being utilised to model the network using a simulation platform, and comprehensive power system resilience analyses are being conducted, looking at impact of different transformers operating/not operating within the modelled network. No results to be reported in this period.

Registered ID:	Registered value:	Project start date:	End date:	Status:	Link
NIA_SPEN_0105	£510,300	January 2025	September 2025	Live	https://smarter.energynetworks.org/projects/nia_spen_0105/

Digitalisation of Power Networks

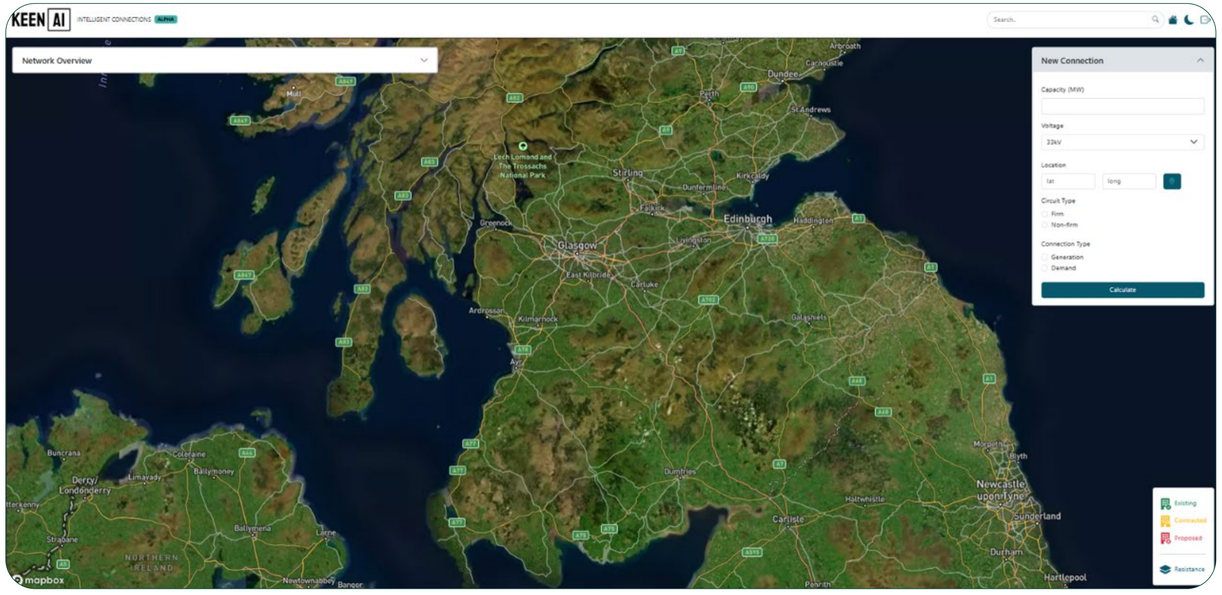
Intelligent Connections Explorer

Developing a digital platform to deliver an enhanced customer experiencer for new connections.

Overview

The process for new connections relies on manual interventions for customer engagement, leading to delays and inefficiencies. Customers face wait times for preliminary phases, connection details, and programmes due to the lack of a system for indicative views of the network they are looking to connect to.

Intelligent Connections Explorer will integrate accurate estimation of substation capacity, new connections costs and timelines, and a route planner that identifies optimal solutions. Creating the ability for SPT to have clearly identifiable guidance on the best solution at the earliest stage in the connections process. This enables a holistic view of SPT's network area and assists transmission operators and developers to have a greater understanding of where would be most beneficial for all parties for a new connection.



Prototype of the Intelligent Connection Explorer interface for developers seeking to connect.

Benefits

- Resource Efficiency: Using digital tools to reduce manual processes and allows our teams to spend more time supporting our customers.
- Improved Customer Experience: Readily available access to key information for customers, more informed decision making and faster selection of connection points/routes will enhance the connection experience for customers.
- Better understanding of new connection projects: Greater awareness of potential connection points, costs, programme timelines, and routing options, leading to more effective project planning.
- Greater ability to assess connection options: Increased likelihood of selecting the "optimal" option from the outset for the developer and manage expectations on the reality of one site in comparison to another. Allowing the developer to have an earlier ability to view the potential "best" location for their needs.
- Early environmental consideration: Addressing environmental impact earlier in the route planning process leads to better outcomes and may ultimately save time. Otherwise, issues may only become apparent after consultation with stakeholders.

Progress

At this stage of the project, we have developed an Alpha version of the web application designed to be an internal facing view. It contains an input section that mirrors the current Pre-Application form that customers complete to request a call with SPT. The current SPT network is mapped out, visualising the substations that currently exist on the network. Once the user has provided their project details and a location on the map, they can view a list of substations with available capacity and view additional information such as timelines and costs.

Further work is to be completed on accuracy of capacity information, development of accurate costs and an accurate timeline estimator using a variety of sources of data.

The project is on track to meet all the proposed milestones, with the Input Data collection still ongoing. As the project unfolds, the scope of the data necessary continues to increase adding to the timelines we are working towards. This was noted in the risks originally and has been accounted for throughout the course of the project. Each milestone completed so far has gone according to the original scope, with the Alpha Release being completed in April 2025 demonstrating the output of the data and work being done until that stage. Therefore, we believe this project has been very successful in its first 5 months.

Planned Projects

We are pleased to share a snapshot of our upcoming Transmission projects, scheduled to begin in the 2025/26 regulatory period. These projects aim to improve our network's efficiency, reliability, and resilience, ensuring we continue to meet the evolving needs of our customers and stakeholders.

Vibration Monitoring of Wind Turbine Effects on OHL Conductors

Registered ID: NIA_SPEN_0111
Budget: £120,000
Start date: October 2025
Link: https://smarter.energynetworks.org/projects/nia_spen_0111/

Undue conductor movement is a leading cause of mechanical failure in OHL fittings, conductors and spacers. By installing high-resolution sensors on two segments of a transmission line which passes close to a wind turbine site, this project will investigate the impact of wind turbine-induced vibrations on overhead line (OHL) conductors. One set of sensors will be placed on the segment near the wind turbines where faults have previously been recorded, and another set on a segment further away to serve as a baseline for comparison.

The data collected will help understand the correlation between wind turbine activity and conductor movements, helping to inform solutions that minimise faults and improve the reliability of the transmission network.

Benefits

The learnings from this project will help TOs to formulate solutions to minimise the impact of turbine wake-induced conductor movements – helping to avoid network outages for our network users. It will also inform solutions to improve asset lifespan of OHL conductors and fittings.

Short Circuit Calculation in IBR Dominated Networks

Registered ID: NIA_SPEN_0112
Budget: £100,000
Start date: June 2025
Link: https://smarter.energynetworks.org/projects/nia_spen_0112/

This project aims to address the limitations of current fault current calculation methods in power networks with high integration of inverter-based resources (IBR). Existing standards like IEC60909 and its adaptations do not adequately model IBR devices, leading to significant errors in fault current calculations. These inaccuracies can result in financial losses, equipment damage, and operational risks. To mitigate these issues, SPEN is partnering with eRoots, a company that has developed a new, patented method for accurate fault current calculation in IBR-dominated networks which has demonstrated substantial error reduction compared to traditional methods. The project will not only enhance the accuracy of fault current calculations but also foster informed discussions within the industry, potentially leading to updates in existing standards and improved network reliability.

Benefits

The purpose of this research project is to identify the inefficiencies in the current methods of calculating fault current under the ER G74 standard and demonstrate if the standard could be updated to support TOs produce more accurate calculations. The new modelling method has been patented and results show that in a case where the penetration of IBR is 19.5%, an error exists between their method and the IEC60609.

If that error were to be negated through a change of standard, which this project aims to drive, then overinvestment into electrical protection equipment could be **reduced by up to 40% in SPEN** and other TOs who use the IEC60609 methodology and have similar network topology.

Our NIA 2024-25 Portfolio

These tables summarise our full NIA activities for the 2024-25 year.

Learn more and stay updated about an individual project by clicking the link to the ENA Smarter Networks Portal.

Completed Projects	Registration ID	Start
Truly Sustainable D&T Substations	NIA_SPEN_0077	Nov-22

Live Projects	Registration ID	Start
DynaLoad – Dynamic loading of transformer insulation	NIA_SPEN_0062	Aug-21
Cyber Security for Active and Flexible Energy Networks (Cyber-SAFEN)	NIA_SPEN_0064	May-22
A Holistic Intelligent Control System for flexible technologies (T2)	NIA_SPEN_0071	Jan-22
Transmission OHL Crossing Protection Stage 1 (T2)	NIA_SPEN_0073	Apr-22
Project Conan (T2)	NIA_SPEN_0074	Apr-22
Landslide Protection Asset (T2)	NIA_SPEN_0075	Jan-22
Innovative Monitoring of GIS Cable Terminations	NIA_SPEN_0081	Mar-23
Transformer Research Consortium – Phase 5: Future-proof Transformers in a Digital Twinning and Net Zero World	NIA_SPEN_0084	Nov-23
Cyber Risk Impact Assessment (Cyber-RIAST)	NIA_SPEN_0090	May-24
SF_6 Retro-Fill	NIA_SPEN_0094	Jul-24
Intelligent Connections Explorer (ICE)	NIA_SPEN_0105	Jan-25
T&D Operations Control Centre – Electricity System Restoration Service Simulator/HiL	SPEN_NIA_11098	Aug-23
Project Synthesis – Effective Regional Inertia Monitoring and Automatic Control with a Whole System Approach (T2)	NIA_SPEN_0072	Apr-22

Collaboration projects

Collaboration is a core aspect of our innovation process and, as well as collaborating with partners on our own projects, we actively support other TO-led projects that address key industry challenges. Below we have summarised our involvement in NIA projects led by other networks. To learn more about these collaborative projects led by our partners, please refer to the lead TO Annual Report or visit the Smarter Networks Portal using project links listed below.

Collaboration – Completed	Registration ID	Start
Consumer Building Blocks	NIA2_NGESO026	Nov-22
Novel methods for sealing SF_6 leaks	NIA2_NGET0016	Jun-22
Inertia Measurement Method Optimisation	NIA2_NGESO023	Sep-22

Collaboration – Live	Registration ID	Started
Impedance Scan Methods	NIA2_NGET0001	Jan-24
Co-Simulation	NIA2_NGET0020	Jul-23
Identification and quantification of C4F7N gas arcing by-products and their implication for GIS operation	NIA2_NGET0028	Nov-22

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2024-25

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