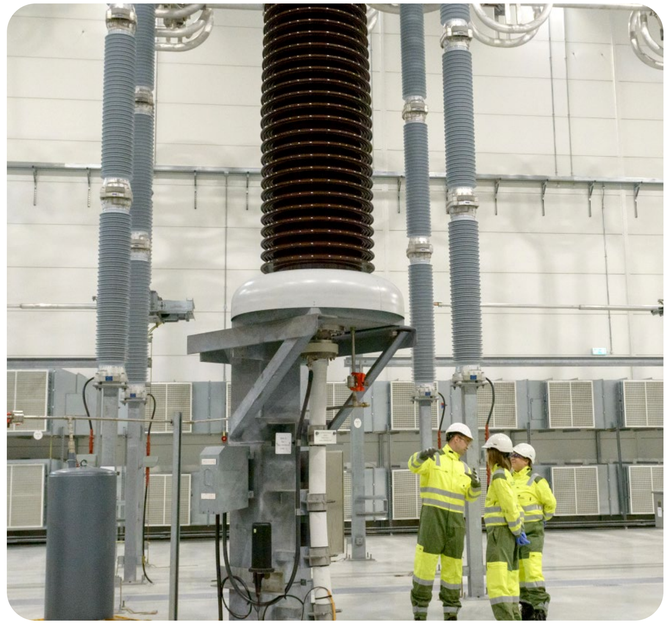
SP Transmission

Network Innovation Allowance Annual Summary 2025-26



SP Energy Networks

Contents

Innovation is becoming increasingly important to the way we prepare our transmission business for delivery at scale. As Director of Processes and Technology, I see our Network Innovation Allowance portfolio as a means of turning future network challenges into practical development activity today – whether that means trialling new approaches to connections, improving cyber resilience, deepening asset insight or building digital tools that can be used at pace. In a period of major growth and change for transmission, that kind of focused, applied innovation is essential.

Christian Armitage
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

Our innovation activity continues to be organised across four strategic clusters: Network Modernisation, System Security and Stability, Network Flexibility, and Digitalisation of Power Networks. Those clusters provide the structure for a portfolio that is both targeted and balanced – one that addresses immediate operational priorities while also preparing the business for the demands of RIIO-T3 and a more digital, lower-carbon transmission system. This is not innovation for its own sake; it is innovation tied closely to business need, implementation potential and long-term network capability. Increasingly, our focus is on turning innovation into operational reality, ensuring that successful developments can be deployed at scale and embedded into business-as-usual activities. Ultimately, success is measured by the tangible improvements these solutions deliver across our network, enhancing performance, strengthening resilience and improving the experience of our customers, engineers and operational teams.

That is particularly clear in our work on the connections journey. Intelligent Connections Explorer has already shown how better access to information on capacity, costs, routing and programme timelines can support earlier and better-informed decisions for new transmission connections. In 2025/26, that work was extended through IConn Phase 3, which began in October 2025 and is now adding greater analytical depth, stronger integration and a more self-serve model for users. The project also reflects a wider shift across the portfolio towards the use of advanced analytics and AI-enabled insights to support faster decision-making, improve planning accuracy and help our teams manage growing volumes of network and customer data more effectively. Asset monitoring and technical network performance have also remained central themes in the portfolio this year. Innovative Monitoring of GIS Cable Terminations is continuing to develop earlier warning of asset condition issues and improve our ability to detect faults before they lead to outages or asset damage. Vibration Monitoring of Wind Turbine Effects on OHL Conductors, which started in October 2025, is helping us understand a growing source of conductor movement and fault risk as onshore wind development increases. ClampIT, the continuation of our earlier DynaLoad learning, is taking that work further by building the basis for a sensor-based digital twin to assess transformer resilience under increasingly dynamic operating conditions. Together, these projects are helping us build a network that is more connected, more intelligent and more resilient.

All of this has taken place at an important moment for the business. RIIO-T3 began on 1 April 2026, marking the next phase of network growth in Central and Southern Scotland and a key step in SP Energy Networks' journey to becoming a Net Zero Networks Business by 2035. Since the start of RIIO-T2, SPEN has connected 682MW of low-carbon renewable energy to the transmission network, and around 80% of customers in Scotland are within our network area. Those wider milestones help define the scale of the challenge ahead – but it is our innovation portfolio that helps us prepare for it in a practical way, by creating the tools, insight and confidence needed to deliver change at pace.

What stands out to me in 2025/26 is both the maturity of the portfolio and the growing impact of the work being delivered. The projects in this report are not isolated technical exercises; they are helping us improve the way we connect customers, understand our assets, manage digital risk and support operational readiness for what comes next. I'm proud of what our teams and partners have achieved through the NIA this year, and I'm confident that the learning, tools and capability built through these projects will play an important role as we move deeper into RIIO-T3 and continue to enable the clean power transition.

Delivering the energy transition will require networks to evolve at an unprecedented pace, and innovation will be central to that journey. By combining innovation with deployment, operational adoption and a relentless focus on business value, we are building the capabilities needed to deliver a smarter, more resilient transmission network and enable the clean power transition for the communities we serve.

Network Innovation Allowance Portfolio Summary

SPEN Projects

25
Active SPEN-led Projects 2025/26

11
Ongoing Projects

4
Completed Projects

10
New Projects

Partner-led Projects

5
Active Collaboration Projects 2025/26

3
Ongoing Collaboration Projects

2
New Collaboration Projects

Our Innovation Strategy

The electricity transmission sector is undergoing unprecedented change as we support increasing renewable generation, growing electricity demand and the UK's Net Zero ambitions. To meet these challenges, innovation enables us to develop and deploy new solutions that improve network resilience, efficiency and customer outcomes.

At SP Energy Networks, innovation is helping us prepare the network for unprecedented growth while maintaining the reliability and resilience that our customers expect. Through collaboration with industry partners, academia and technology providers, we continue to develop practical solutions that support a smarter, more sustainable transmission system. We are proud that 27% of our project partners are small and medium-sized enterprises (SMEs), while 15% are from the academic sector, demonstrating our commitment to fostering innovation and bringing diverse expertise into the electricity network industry.

During 2025/26, the final year of RIIO-T2, we continued to progress innovation across the four clusters defined in our RIIO-T2 Innovation Strategy:

- **Network Modernisation**
- **System Security & Stability**
- **Network Flexibility**
- **Digitalisation of Power Networks.**

Aligned with the Energy Networks Association (ENA) innovation themes, these clusters provide a clear framework for addressing the challenges and opportunities arising from the evolving energy system. This approach supports a well-balanced Network Innovation Allowance (NIA) portfolio, ensuring innovation activities deliver value for customers and stakeholders while supporting the transition to a secure, resilient and low-carbon electricity network.

Network Modernisation

Network modernisation remains a key pillar of the innovation strategy, supporting the development of a smarter, more sustainable and future-ready transmission network. Drawing on the principles of optimal grid design, smart asset management, new technologies and solutions, and improvements in health, safety and environmental performance, innovation is focused on enhancing network performance, accommodating increasing low-carbon generation, supporting the electrification of transport and heat, and maximising the utilisation of existing assets. Projects such as **CONAN** and **Innovative Monitoring of GIS Terminations** support these ambitions by advancing innovative infrastructure solutions and enhancing asset monitoring capabilities, enabling more efficient network delivery and proactive asset management.

Digitalisation of Power Networks

Building on advancements in new digital technologies, enhanced data analytics, standardisation and cyber security, innovation is focused on improving network visibility, strengthening asset management, increasing operational efficiency and supporting more informed decision-making.

Projects such as **IConn** support these ambitions by providing greater visibility of network capacity, connection costs and delivery timescales, enabling more informed connections planning and helping customers identify the most effective connection solutions at an earlier stage of the process.

System Security and Stability

The transition to a low-carbon electricity system is driving greater operational complexity and introducing new challenges for maintaining system security and stability. Through innovation, advanced monitoring, control and analytical capabilities are being developed to enhance network observability, strengthen system resilience and support the secure and dependable operation of an increasingly dynamic power system.

Helping to advance this area, the **Vibration Monitoring of Wind Turbine Effects on OHL Conductors** project improves understanding of conductor behaviour and turbine-induced vibrations, enabling measures that enhance network reliability, reduce outages and improve asset longevity. Alongside this, the **MOSAIC** project brings together industry, academia and technology expertise to develop the tools, knowledge and capabilities needed to address emerging power system challenges associated with the transition to Net Zero.

Network Flexibility

The increasing decentralisation and interconnectedness of the energy system is creating new opportunities to utilise flexibility across the electricity network. Through innovation, greater emphasis is being placed on enhancing coordination between transmission and distribution networks, enabling the flexible use of distributed energy resources and maximising the utilisation of existing network assets. This whole-system approach supports more efficient network planning and operation, while delivering greater value for customers and stakeholders.

Project Highlights

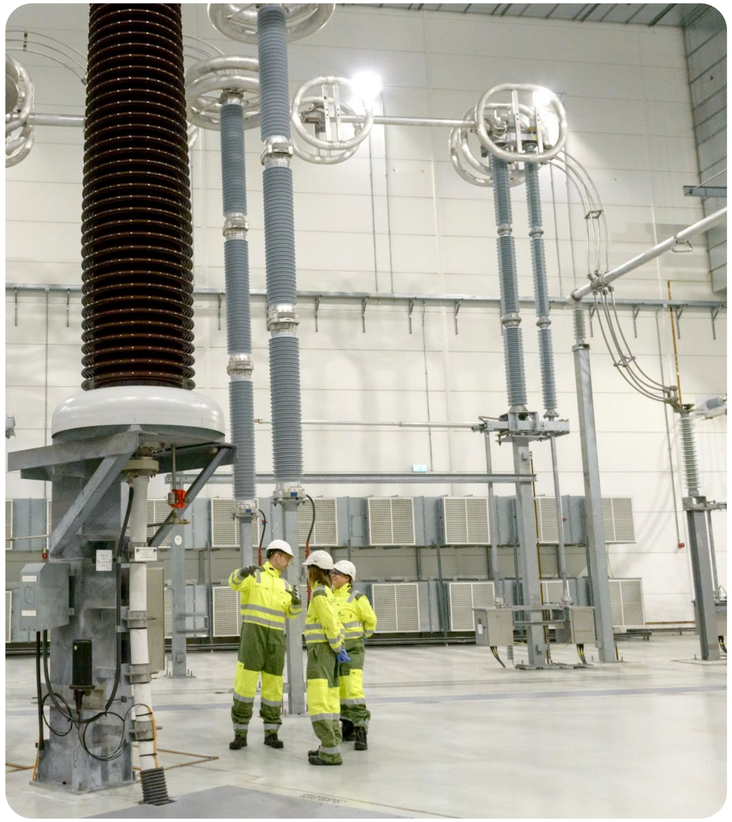
The projects across our portfolio range in scale and scope to deliver the most impact and benefit to our customers and stakeholders. For this summary report we have spotlighted the projects with the most significant learnings, providing a snapshot of the strategies being employed and the outcomes being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

Registered ID:	Registered value:	Project start date:	End date:	Status:	Link
NIA_SPEN_0081	£400,000	March 2023	March 2026	Live	Innovative Monitoring of GIS Cable Terminations | ENA Innovation Portal

Network Modernisation

Innovative Monitoring of GIS Cable Terminations

Providing early warning of hidden cable termination issues, this project is helping to improve asset reliability, reduce outage risk and support more proactive network management.



Overview

This project is developing a non-intrusive monitoring solution to detect potential movement within GIS cable terminations before it leads to asset failure. The technology uses external sensors to identify the effects of conductor contraction, providing early warning of developing issues that cannot currently be detected without intrusive inspection. By enabling continuous condition monitoring, the project aims to support a more proactive approach to managing critical transmission assets.

Benefits

Early identification: Continuous monitoring can provide advance warning of developing termination issues before they result in equipment failure, enabling intervention at an earlier stage and reducing the likelihood of costly repairs or network disruption.

Improving network reliability: By identifying potential defects before they escalate, the project can help reduce the risk of unplanned outages and improve the resilience of critical transmission infrastructure, supporting a more secure electricity network.

Enhanced asset management: The monitoring system provides greater visibility of asset condition, allowing engineers to move from reactive maintenance towards a more proactive and data-driven approach to managing GIS cable terminations.

Reduced customer impact: Earlier detection of emerging issues can minimise disruption associated with asset failures and emergency repairs, helping maintain continuity of supply and reducing the potential impact on network users.

Progress

The original scope included material determination, thermal modelling, product development, manufacture, testing, site installation, monitoring and evaluation. The key technical objective at this stage was to determine whether thermal fault detection of a GIS cable sealing end joint is feasible and whether a monitoring system could be developed to measure the required parameters.

Mathematical modelling has confirmed that small increases in heat within the joint can be detected from the surface, and factory testing using representative cable sealing end equipment validated the modelled results to within approximately 1°C. Additional testing was undertaken to simulate cable load using an embedded cable core heater, allowing the impact of load-related heating to be assessed without applying high current.

The results show that a joint fault condition remains detectable as a relative temperature increase, with the sensor response showing approximately 1°C increase per 10W of heating at the joint. Although the tests confirmed that thermal lag can be significant, with detection potentially taking several hours depending on fault size, the overall outcome supports the feasibility of the monitoring method. The project has therefore successfully progressed the technical validation stage.

The monitoring system has now been installed in a SPEN substation and will be trialled over a period of six months. This trial will be used to validate the system in an operational substation environment, monitor the performance of the cable sealing end, and assess the effectiveness of the monitoring solution under real network conditions.

Next Steps

The next phase of the project will focus on operational validation of the monitoring system through an extended **six-month trial period** within a live substation environment. This will enable detailed assessment of system performance under real network conditions and provide valuable insight into its effectiveness in detecting and monitoring cable joint behaviour.

Ongoing monitoring activities will support refinement of the system, including optimisation of sensor performance and alert thresholds to ensure reliability and minimise unnecessary interventions. This phase will also provide critical data to further validate the thermal monitoring methodology and support confidence in its practical application.

As the project progresses, the focus will be on analysing trial outcomes and preparing for broader application, ensuring the solution can contribute to improved asset monitoring, enhanced fault detection capability, and more proactive management of critical transmission infrastructure.

Registered ID:	Registered value:	Project start date:	End date:	Status:	Link
NIA_SPEN_0074	£365,000	April 2022	March 2026	Live	Project Conan (T2) | ENA Innovation Portal

Network Modernisation

Project Conan (T2)

Combining advanced sensing technology with visual inspection, Project Conan (T2) is transforming how overhead line conductors are assessed enabling safer inspections, better asset visibility and more informed investment decisions.

Overview

Developing an advanced condition assessment device for overhead line conductors, combining electromagnetic sensing technology with high-definition visual inspection capabilities to provide a more accurate understanding of conductor health.

The project aims to support non-destructive assessment of ACSR and AAAC conductors, enabling condition inspections to be carried out safely on energised assets without requiring network outages.

By providing improved visibility of conductor condition, the technology will support more informed maintenance and replacement decisions, helping asset managers optimise investment and extend asset life where appropriate.

Benefits

Improved asset understanding: The technology provides a more detailed assessment of conductor condition, giving engineers greater confidence when identifying deterioration, prioritising interventions and managing asset risk.

Reduced network disruption: Inspections can be undertaken on live assets, reducing the need for planned outages and minimising disruption to customers and local communities.

More efficient condition surveying: Combining electromagnetic sensing with visual inspection enables a faster and more effective assessment process, improving the quality of asset information available to network teams.

Optimised investment decisions: Improved condition data supports targeted maintenance and replacement programmes, helping extend asset life where appropriate and ensuring investment is directed to areas of greatest need.

Progress

Prototype development completed: A fully functional prototype has been successfully designed, manufactured and tested, demonstrating the ability to assess conductor condition using a combination of electromagnetic measurements and integrated visual inspection.

Validation through testing and trials: Laboratory, workshop and live network trials have confirmed that the technology can operate effectively on energised overhead line assets while delivering reliable condition assessments.

Project nearing completion: The project has successfully completed the design, prototyping and practical testing stages and is progressing through its final delivery phase, with a strong evidence base established to support future deployment and commercialisation.

Next steps

Complete final validation activities: Remaining activities will focus on demonstration, final verification and completion of certification requirements to support readiness for wider deployment.

Progress commercialisation opportunities: Learning from the project will be used to support transition from innovation into practical application, enabling consideration of future operational use across transmission networks.

Refine and expand the technology: Future development will explore opportunities to reduce device size and weight, improve usability and enable large-scale deployment as part of routine asset management practices.

Registered ID:	Registered value:	Project start date:	End date:	Status:	Link
NIA_SPEN_0111	£120,000	October 2025	April 2027	Live	Vibration Monitoring of Wind Turbine Effects on OHL Conductors | ENA Innovation Portal

Network Modernisation

Vibration Monitoring of Wind Turbine Effects on OHL Conductors

Using advanced monitoring technology to better understand the interaction between wind farms and overhead lines, this project is helping improve asset resilience, reduce network risk and support the transition to a cleaner energy system.

Overview

This project is investigating the impact of wind turbine wake effects on nearby overhead line conductors through a 12-month monitoring programme on the transmission network. Advanced vibration sensors and weather stations have been installed online spans located both close to and distant from a wind farm, allowing direct comparison of conductor behaviour under different operating conditions. The learning generated will improve understanding of vibration-related asset risks and support future network planning, asset management and renewable generation integration.

Benefits

Improves understanding of asset performance: The project is providing valuable insight into how wind turbine wake effects influence conductor movement, helping SPEN better understand potential risks to asset health and long-term network reliability.

Enhanced Network Resilience: By identifying and analysing elevated conductor vibration levels, the project supports the development of mitigation measures that can reduce the risk of faults, outages and asset degradation.

Supporting Renewable Integration: The findings will help inform future guidance on the interaction between wind farms and transmission assets, supporting the continued connection of renewable generation while maintaining network performance.

Industry-wide learning: The project will produce evidence-based recommendations and share learning with other network operators, helping improve understanding of turbine wake impacts across the wider electricity sector.

Progress

Successful deployment of monitoring equipment: AEOLUS sensors and weather stations were installed on the overhead lines in Scotland, in October 2025, with monitoring active on both near-turbine and reference locations.

Continuous monitoring underway: Data has been collected since late 2025, with regular analysis reports produced to assess conductor behaviour and vibration activity across the monitored spans.

Early findings emerging: Initial analysis has identified higher levels of conductor movement on spans located close to wind turbines, providing indications that turbine wake effects can influence conductor behaviour.

Next Steps

Monitoring will continue throughout the remainder of the trial period to build a more comprehensive understanding of conductor behaviour under varying weather conditions. Further analysis will investigate the relationship between turbine wake effects and conductor vibration, helping identify potential mitigation measures and operational guidance. The project findings will be consolidated into a final report, providing recommendations to support future network planning, asset management and renewable generation integration.

Registered ID:	Registered value:	Project start date:	End date:	Status:	Link
NIA_SPEN_0124	£894,000	October 2025	October 2026	Live	IConn (Intelligent Connections Explorer) | ENA Innovation Portal

Digitalisation of Power Networks

IConn (Intelligent Connections Explorer) – Phase 3

Providing greater transparency and insight into the transmission connections process, IConn is enabling network planners to deliver a data-driven connections experience and connect customers faster.

Overview

IConn is transforming the transmission connections process by providing earlier and more accessible insight into network capacity, connection costs, programme timescales and routing options. By bringing together key information within a single platform, the project aims to support faster, more informed decision-making for both network planners and customers. The latest phase of the project is focused on enhancing functionality through dynamic power flow analysis, improved data integration and the development of a self-serve platform that aligns with evolving industry requirements.

Benefits

The project improves transparency across the connections journey by providing customers with earlier visibility of available connection options, costs and timescales. This supports better project planning and reduces reliance on manual interactions during the initial stages of the process. Enhanced automation also improves efficiency for network teams, helping to streamline assessments and reduce the time required to identify suitable connection opportunities. Dynamic power flow analysis provides a greater understanding of network constraints and reinforcement requirements, enabling more effective planning of future connections. In addition, alignment with Connections Reform and Clean Power 2030 ensures the platform supports future industry needs and contributes to the transition towards a more flexible and decarbonised electricity system.

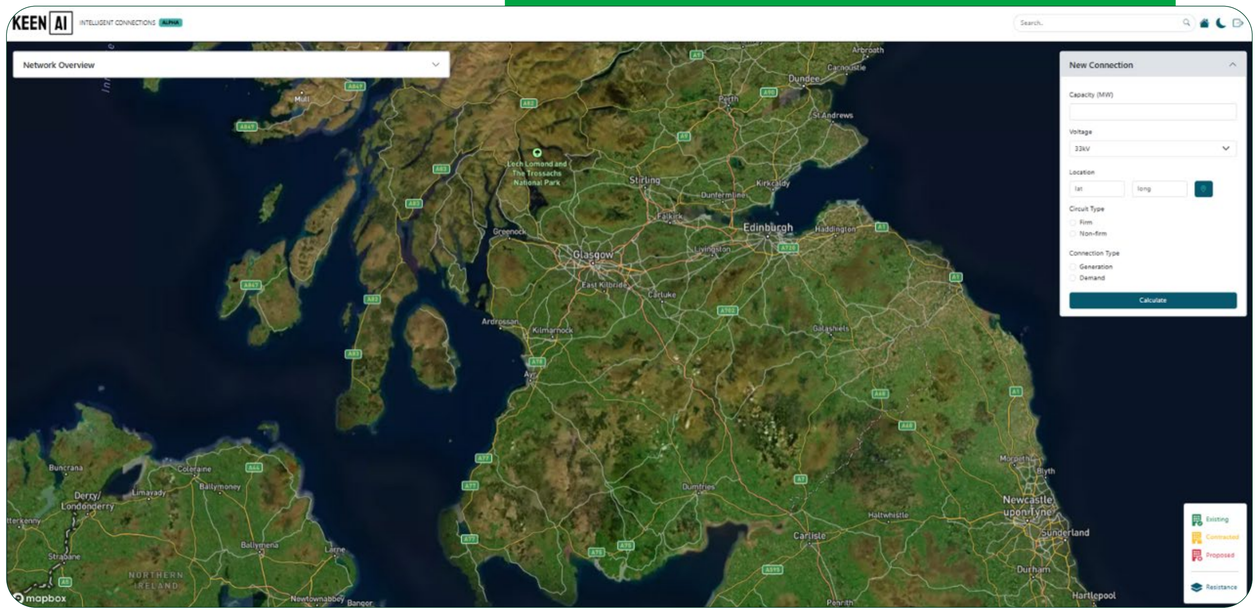
Progress

Development of the power flow analysis and visualisation functionality is underway, with internal reviews being undertaken to gather feedback and refine the user experience. Work has also progressed on the AI-assisted maintenance element of the project, which will support automated analysis of reports and other structured and unstructured data sources, reducing the time and effort currently required to maintain the network model. Planning for integration of IConn self-serve tool with existing SPEN's connection portal has commenced, with consideration being given to Application Programming Interface (API) and authorisation requirements to support future deployment of the platform.

Next steps

The project will focus on development and integration of the self-serve tool, enabling wider customer access and a more streamlined connections process. Further work will enhance the power flow modelling capabilities and continue development of AI-enabled data analysis tools to improve efficiency and model accuracy. Ongoing testing, stakeholder engagement and user feedback will help ensure the platform delivers maximum value for both customers and network planners as it moves towards wider implementation.

Bringing together key information within a single platform, the project aims to support faster, more informed decision-making



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

Registered ID:	Registered value:	Project start date:	End date:	Status:	Link
NIA_SPEN_0123	£240,000	October 2025	September 2027	Live	OPTIMA – Outage Planning Tool Integrating Machine learning and Analytics | ENA Innovation Portal

Network Flexibility

OPTIMA (Outage Planning Tool Integrating Machine Learning and Analytics)

Using artificial intelligence to transform outage planning, OPTIMA is helping improve efficiency, reduce network disruption and support smarter management of the future transmission system.

Overview

OPTIMA is developing an automated outage planning tool that uses artificial intelligence and machine learning to improve the efficiency and effectiveness of transmission outage planning. By combining historical outage data, network information, weather forecasts and operational insights, the platform aims to identify optimal outage windows, reduce planning conflicts and support more informed decision-making. The project is designed to streamline outage planning processes while minimising network disruption and supporting the transition to a more flexible, low-carbon energy system.

Benefits

Smarter outage planning: The use of AI and machine learning enables planners to analyse large volumes of operational data, helping identify optimal outage windows and reduce the likelihood of network conflicts.

Improved efficiency: Automating key elements of the outage planning process reduces reliance on manual activities, allowing engineering and planning teams to focus on higher-value decision-making and reducing overall planning effort.

Enhanced network visibility: Integration of network and operational data provides greater understanding of outage impacts, supporting improved coordination and more effective planning across the transmission network.

Supporting system resilience: By helping optimise outage schedules and minimise disruption, the project contributes to maintaining network performance while enabling the delivery of essential maintenance and upgrade activities.

Progress

Initial activities have focused on defining technical requirements, identifying key data sources and establishing the overall system architecture. Development of the core outage planning algorithm and supporting data model is underway, alongside integration of the AI and machine learning capabilities that will underpin the platform. Preparations for future system integration and testing have also progressed, creating a solid foundation for the next stages of development.

Next steps

Work will continue towards achieving the project's initial objectives, including the development of the outage planning algorithm, supporting data model and AI capabilities, providing the foundation for the development of the outage planning tool.

Upcoming Projects

We are excited to present a snapshot of our upcoming projects, which are recently registered and set to progress in the 2026/27 regulatory year. These initiatives are designed to enhance our network's efficiency, reliability, and resilience, ensuring we meet the evolving needs of our customers and stakeholders.

BioConnect

Registered ID: NIA_SPEN_0133
Registered value: £730,000
Start date: March 2026
Link: https://smarter.energynetworks.org/projects/nia_spen_0133/

BioConnect is modernising SPEN's project planning and cost estimation processes by integrating environmental considerations alongside traditional financial metrics. The project will develop a new digital solution that combines cost, carbon and biodiversity information within a single platform, enabling sustainability impacts to be considered much earlier in project development.

The enhanced approach will support more informed investment decisions, helping project teams better understand environmental impacts while improving consistency, transparency and collaboration across the business. By embedding biodiversity and carbon considerations into everyday planning activities, BioConnect aims to reduce delivery risk, improve decision-making and support SPEN's wider sustainability objectives. The project will also establish a scalable foundation for future digital and environmental innovation across the network.

ClampIT (Dynaload 2)

Registered ID: NIA_SPEN_0132
Registered value: £2,350,000
Start date: March 2025
Link: https://smarter.energynetworks.org/projects/nia_spen_0132/

ClampIT builds on learning from the DynaLoad programme to improve understanding of transformer loading capability and asset health. The project will investigate how enhanced monitoring, data analytics and dynamic thermal modelling can be used to maximise the utilisation of existing transformer assets while maintaining operational reliability.

By providing more accurate insight into transformer condition and available capacity, ClampIT aims to support better operational decisions and unlock additional network capability without the need for immediate infrastructure reinforcement. This is particularly important as increasing demand and renewable generation place greater pressure on transmission networks.

The project is expected to contribute to more efficient asset management, improved network flexibility and better value for customers through smarter use of existing infrastructure.

Modelling, Simulation and Analysis Innovation Centre (MOSAIC)

Registered ID: NIA_SPEN_0126
Registered value: £5,760,000
Start date: January 2026
Link: https://smarter.energynetworks.org/projects/nia_spen_0126/

MOSAIC is establishing a dedicated innovation centre to strengthen modelling, simulation and analytical capability across the electricity network as the power system transitions towards Net Zero. As inverter-based generation increases and system behaviour becomes more complex, new tools and techniques are required to support network planning and operational decision-making.

The project will create a collaborative environment that brings together industry, academia and technology specialists to develop, test and deploy advanced modelling approaches. These capabilities will help improve understanding of emerging system behaviours, support stability assessments and enable more efficient network planning.

By accelerating the adoption of innovative analytical tools, MOSAIC aims to enhance network resilience, reduce operational risk and support the integration of low-carbon technologies across the future transmission system.

Our NIA 2025-26 Portfolio

These tables summarise our full NIA activities for the 2025-26 year. Learn more and stay updated about an individual project by clicking the link to the ENA Smarter Networks Portal.

New Registered Projects	Registration ID	Start
Short Circuit Calculation in IBR Dominated Networks	NIA_SPEN_0112	Jun-25
AI Compass	NIA_SPEN_0120	Aug-25
IConn (Intelligent Connections Explorer) – Phase 3	NIA_SPEN_0124	Oct-25
OPTIMA – Outage Planning Tool Integrating Machine learning and Analytics	NIA_SPEN_0123	Oct-25
Power Optimised Waste Heat Recovery (POWER)	NIA_SPEN_0122	Oct-25
Vibration Monitoring of Wind Turbine Effects on OHL Conductors	NIA_SPEN_0111	Oct-25
Mixed Circuit Protection using Passive Optical Sensing	NIA_SPEN_0128	Jan-26
ConnectRail Hub	NIA_SPEN_0125	Jan-26
Modelling, Simulation and Analysis Innovation Centre (MOSAIC)	NIA_SPEN_0126	Jan-26
BioConnect	NIA_SPEN_0133	Mar-26

Completed Projects	Registration ID	Start
Project Synthesis – Effective Regional Inertia Monitoring and Automatic Control with a Whole System Approach (T2)	NIA_SPEN_0072	Apr-22
SF_6 Retro-Fill	NIA_SPEN_0094	Jul-24
Intelligent Connections Explorer (ICE)	NIA_SPEN_0105	Jan-25
Enhancing Network Restoration Capability under 'New Normal' – Feasibility study	NIA_SPEN_0118	Oct-25

Ongoing Projects	Registration ID	Start
A Holistic Intelligent Control System for flexible technologies (T2)	NIA_SPEN_0071	Jan-21
DynaLoad – Dynamic loading of transformer insulation	NIA_SPEN_0062	Aug-21
Landslide Protection Asset (T2)	NIA_SPEN_0075	Jan-22
Project Conan (T2)	NIA_SPEN_0074	Apr-22
Transmission OHL Crossing Protection Stage 1 (T2)	NIA_SPEN_0073	Apr-22
Cyber Security for Active and Flexible Energy Networks (Cyber-SAFEN)	NIA_SPEN_0064	May-22
Innovative Monitoring of GIS Cable Terminations	NIA_SPEN_0081	Mar-23
T&D Operations Control Centre – Electricity System Restoration Service Simulator/HiL	SPEN_NIA_11098	Aug-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
ClampIT (Dynaload 2)	NIA_SPEN_0132	Mar-25

Collaboration is a fundamental part of our innovation strategy. Alongside working with partners on our own projects, we actively contribute to TO-led initiatives that address key challenges facing the industry. The section below summarises our involvement in NIA projects led by other networks. Further details on these collaborative projects can be found in the relevant lead TO Annual Report or by visiting the Smarter Networks Portal using the project links provided.

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

Collaboration Projects – New	Registration ID	Started
TOTEM (Transmission Own-er Tools for EMT Modelling) 3	NIA_SHET_0056	Jul-25
Early Signs of Oscillations	NIA2_NESO121	Mar-26

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