Innovation Annual Summary 2025/26

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Foreword from Antony Green, Chief Strategy and Regulation Officer

"Biomethane is already making a real difference on the network today, and growing its role over the coming years is a clear priority."

This has been a significant year for SGN, where real progress has been made across the innovation portfolio.

The Local Transmission System (LTS) Futures project, which explored the potential to repurpose a 30km pipeline between Grangemouth and Granton to carry hydrogen, successfully completed its live trial. H100 Fife continues to make strong progress, with construction hitting key milestones as we move closer to connecting our first home with green hydrogen. In parallel, the Real Time Settlement Methodology (RTSM) project is developing a real-time, energy-based billing methodology, enabling the fair integration of low-carbon gases into the gas network. Meanwhile, the Intelligent Gas Grid (IGG) project completed its first live trials, extending low pressure optimisation across additional sites and demonstrating the value of real-time monitoring and anomaly detection in improving network performance.

Building on strong foundations

None of this has been achieved in isolation. The partnerships built across the innovation programme have been central to the progress made this year. Working alongside universities, technology companies, fellow gas networks and government, SGN has been contributing to the evidence base that will shape how our country heats its homes and businesses for generations to come. Looking ahead, the opportunity presented by green gases is significant. Biomethane is already making a real difference on the network today, and growing its role over the coming years is a clear priority. Hydrogen could also have a key part to play, particularly for industry and larger energy users, and SGN remains focused on closing the remaining evidence gaps and ensuring the capability, insight and infrastructure are in place to support future deployment as the energy system evolves. Our innovation work is enabling informed decision-making and positioning SGN to respond with confidence to the next phase of the UK's heat policy.

As SGN moves into RIIO-GD3, the focus shifts in an important way. Much of the last five years has been about building evidence and exploring possibilities. The next period is about turning that work into delivery. Ofgem's Final Determinations are clear on that expectation, and it is one SGN fully embraces. With a confirmed Network Innovation Allowance of £24.3m and continued access to the Strategic Innovation Fund, the foundations are in place to ensure that innovation delivers real, lasting benefits for customers and communities across Scotland and southern England.

Committed to our customers

SGN's approach remains collaborative and consumer focused. The organisation will continue to work with partners across the energy sector to navigate the complexity of the transition, with a particular commitment to ensuring that the voice of the customer is represented, including the continued support for the vulnerable customers our network serves.

The energy landscape is evolving rapidly, bringing with it significant opportunities. SGN is committed to playing a meaningful role in shaping what comes next.

Antony Green
Chief Strategy and Regulation Officer

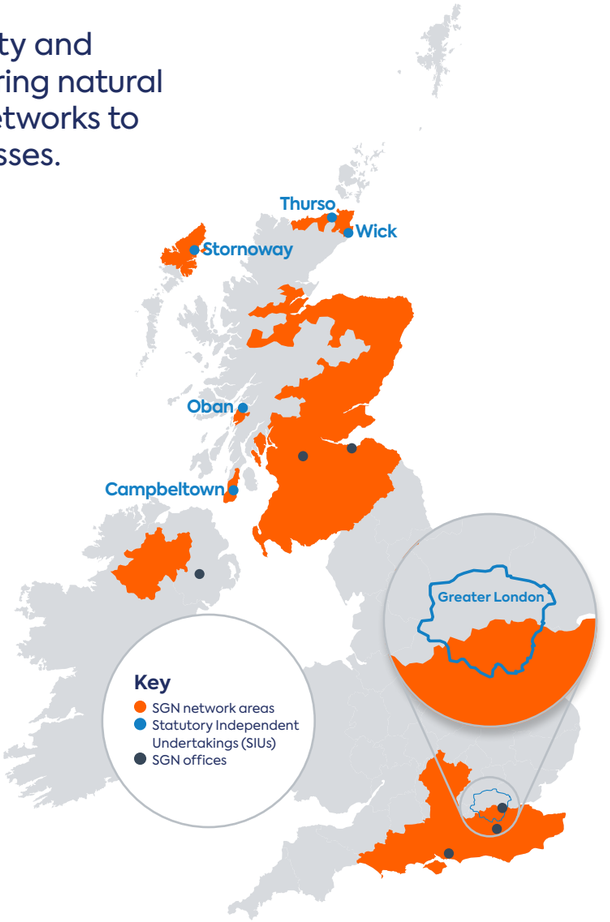
SGN at a glance

We support UK energy security and resilience by efficiently delivering natural and green gas through our networks to millions of homes and businesses.

Scotland
Our network distributes gas to 1.8 million Scottish homes, including a number of remote communities (SIUs).

Southern England
We distribute gas to over 4.0 million homes in south and south-east England including south London.

Northern Ireland
Our Evolve network serves customers in the western region of Northern Ireland.



5.8 million homes
We transport natural and green gas from the national transmission system and local biogas plants to households.

189,000 industrial and commercial customers
Our I&C customers account for 40% of the energy our network delivers and support millions of jobs.

46 biomethane sites
We have sufficient connected biomethane capacity to decarbonise more than 360,000 homes.

75,408km of pipelines
We operate and maintain one of the largest energy networks, part of the UK's critical national infrastructure.

117.9TWh of energy
Our network provides resilience to the energy system, keeping our customers safe and warm whatever the weather.

1,372,894 vulnerable households supported
Since 2021 we've helped more than 1.3 million vulnerable households to use energy safely, efficiently and affordably.

SGN innovation overview

Simon Joyce Head of Innovation Futures and Principal Engineer

> **"By working closely with partners, universities and innovators, we are carrying the momentum into RIIO-GD3."**

SGN is committed to shaping the future of gas distribution by developing networks that perform reliably today and are ready to meet the challenges of tomorrow.

Our approach prioritises smarter, more effective and sustainable networks, while actively exploring the technologies and solutions that will support the sector's long-term ambitions to decarbonise our network.

Innovation at SGN continues to be driven by two main streams: Core Innovation and Futures Innovation. Core Innovation focuses on enhancing the current gas network by prioritising safety, sustainability and operational effectiveness. Futures Innovation explores the transformative possibilities ahead, addressing broad themes such as the decarbonisation of heat supply chains, the reduction of industrial and commercial emissions, and the role of green gases in a future energy system.

Shifting from exploration to delivery

As we close out the RIIO-GD2 period, our focus has increasingly shifted toward what comes next. Entering RIIO-GD3 means moving from exploration to execution, embedding the lessons of recent years into the way we operate and ensuring that the benefits of innovation are felt by the customers and communities we serve. The green gas opportunity, in particular, is one we are approaching with renewed focus, with biomethane already delivering results on our network and a growing body of evidence shaping how hydrogen could contribute in the years ahead.

With operations spanning Scotland and the south of England, we continue to recognise the importance of region-specific approaches. In Scotland, our work harnesses the country's renewable energy potential and builds on the unique opportunities presented by projects such as H100 Fife and LTS Futures. In southern England, efforts remain focused on upgrading infrastructure, lowering emissions and improving our customer outcomes. Together, these regional programmes support our wider ambition of enabling a net zero energy system.

Keeping customers at the heart of innovation

Importantly, we must ensure that our customers remain at the heart of the energy transition. Our work on decarbonising Multi-Occupancy Buildings (MOBs), along with ensuring fairer billing through the Real-Time Settlement Methodology (RTSM) changes, are key examples of how SGN is supporting customers through innovation.

Over the past 12 months, we have continued to grow our innovation network, deepening existing relationships and building new ones across industry, academia and the supply chain. With the continued backing of our project partners, we are making real progress on the technical and evidential challenges that will define the energy transition.

Simon Joyce
Head of Innovation Futures and Principal Engineer

Meet the Innovation Team

Stuart Sherlock
Role: Governance & Performance

Stuart is a chartered mechanical engineer (IGEM) with over a decade in the gas industry. He leads SGN's Governance and Performance function within Innovation, ensuring projects meet regulatory, funding, and governance standards. His team provides portfolio control, compliance oversight, and clear performance reporting across the innovation lifecycle.

Gordon McMillan
Role: Insights

Gordon, a chemical engineering and business leadership graduate, leads SGN's innovation scouting and insights function. He identifies emerging opportunities and translates them into strategies aligned with the energy transition. With experience in innovation, engineering, and network strategy, he bridges early concepts into structured innovation projects.

Oliver Machan
Role: Core Innovation

Ollie brings over 20 years of gas industry experience spanning network strategy, asset risk, IT, and business improvement. He leads SGN's Core Innovation portfolio, delivering projects that improve operational effectiveness, safety, and support the transition to a low-carbon future, combining strategic insight with practical delivery.

Mohanvir Singh-Saran
Role: Futures Innovation

Mohanvir leads SGN's Futures Innovation portfolio, focusing on long-term opportunities in energy transition, including green gas and whole-system transformation. He brings experience from BT Group, Telefónica, and Grant Thornton, and leads multidisciplinary teams combining industry, academic, and technical expertise to shape future energy solutions.

Ryan Smith
Role: Hydrogen Evidence and Transition (HEAT)

Ryan has over 23 years' experience in gas design, engineering, and governance. He leads SGN's HEAT programme, building the evidence base for 100% hydrogen for heat and ensuring technical assurance and regulatory compliance. He focuses on delivering customer benefits and informing future energy system decisions.

How we fund our innovation activity

Innovation is central to our commitment to delivering a smarter, more sustainable energy future.

By leveraging a diverse mix of funding streams, we continue to accelerate the development of innovative solutions that deliver value for our customers and support the UK's transition to net zero.

Driving continuous innovation

Our innovation programme is supported by a range of funding sources, with a strong focus on two key mechanisms: the Network Innovation Allowance (NIA) and the Strategic Innovation Fund (SIF). Together, these provide a structured pathway from early-stage research through to large-scale demonstration and deployment.

Ofgem NIA

The NIA has been a cornerstone of network innovation since RIIO-GD1 and continues to play a key role in RIIO-GD2. It supports a broad portfolio of projects, from early-stage research through to smaller-scale trials, enabling us to explore new ideas and address key challenges such as supporting vulnerable customers and progressing decarbonisation.

NIA projects are particularly important in identifying and addressing knowledge gaps, generating the evidence needed to inform future network development.

Ofgem SIF

The SIF, introduced under the RIIO-GD2 price control, supports larger, cross-sector innovation projects. Delivered in partnership with Innovate UK, it brings together gas and electricity networks and wider industry to develop scalable solutions.

It is structured across three phases, taking projects from concept through to large-scale demonstration, helping progress learning from early-stage innovation into real-world application and deployment.

Difference between NIA and SIF

Together, NIA and SIF provide a complementary innovation framework, supporting projects at different stages of development. The NIA, embedded within the RIIO price control, enables flexible funding for early-stage innovation, helping to explore ideas and generate evidence quickly.

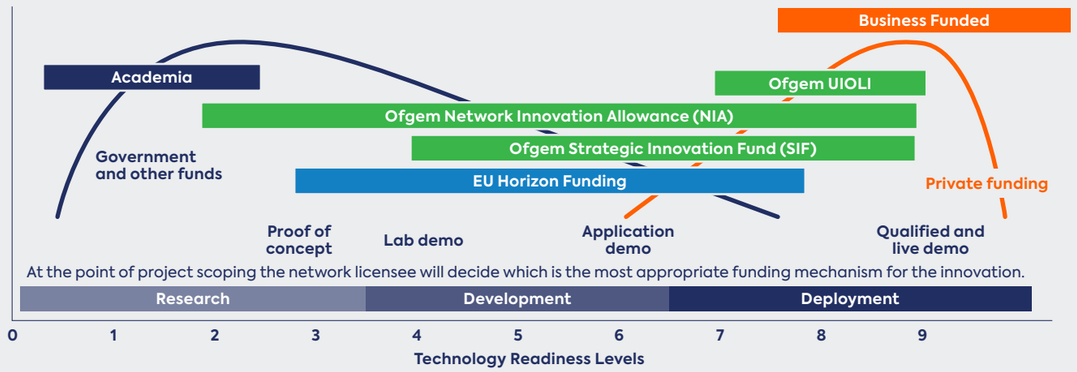
In contrast, the SIF is a competitive mechanism delivered with Innovate UK, progressing projects through defined stages from feasibility to large-scale demonstration. It provides additional governance and independent assessment to ensure funding targets high-impact solutions.

Additional funding

Alongside NIA and SIF, we also leverage third-party funding and internal investment to support innovation activity. These additional sources enable us to advance projects at higher technology readiness levels, improve operational effectiveness, and accelerate the deployment of innovative solutions across the network.

The diagram below illustrates the different funding mechanisms available, with NIA and SIF forming part of the regulatory annual reporting framework. Third-party and internal funding sources are also used to support progression across Technology Readiness Levels.

Funding options across Technology Readiness Levels (TRLs)



SGN innovation process

SGN's innovation approach takes ideas from initial insight through to implementation, ensuring solutions are developed, tested and deployed to deliver measurable value for customers and the wider energy system. In FY 2025/26, over 100 innovation ideas were presented to SGN, with many progressing through the pipeline and delivering benefits across the network.

From ideas to impact

Our structured seven-step process ensures every idea receives the right level of scrutiny, resource and support – from initial concept through to network-wide implementation. Where projects succeed, we embed the learning. Where they surface new questions, we feed those insights back into the next wave of innovation.

Connecting to the wider ecosystem

This approach aligns closely with Future Energy Networks Innovation Process (FENIP), which supports collaboration and knowledge sharing across the gas networks community. Through FENIP and our membership of Future Energy Networks (FEN), we are connected to a growing community of innovators working toward the same goals. Whether you are a developer, researcher or technology provider, there are two ways to get involved, join our innovation ecosystem or submit an idea directly.

How to get involved

Join our ecosystem

Collaborate with us to solve real challenges and shape the future of energy. Co-develop and deliver impact together through live environments, testing facilities and our partner network.

Submit an idea

Do you have an idea that could make a difference? Tell us about it. We will review and provide feedback, and together we can bring ideas to life. Scan the QR codes below to join our innovation ecosystem or submit an idea. You can also access FENIP directly (contact@fenip.ma) to connect with the wider gas networks' innovation community.

Join SGN Innovation Ecosystem:

SGN Innovation Concept Submission:

Our innovation process

Our projects cover every stage of the innovation journey, from research to implementation. The innovation funnel uses TRLs to assess and guide the progression of technologies from early concepts through to deployment.

Research

Idea and Assess: TRL 1-3

Opportunities are sourced from our own expert teams, strategic insights, external partners and open submissions. Each concept is assessed for alignment with our priorities, the strength of the customer or network need, potential value, feasibility, novelty, risk and duplication. The outcome is a qualified opportunity and a decision to progress, hold or stop.

Development

Define: TRL 4-6

The selected opportunity is converted into a clearly scoped innovation project. This includes defining the problem and use case, intended solution, partners, users, costs, funding route, success measures, expected benefits, governance and safety or regulatory requirements. The outcome is an approved project plan and testable solution concept.

Demonstration

Develop and Validate: TRL 7-8

The solution is prototyped and evaluated in a controlled or representative environment. Technical performance, operational integration, safety, user acceptance and potential benefits are tested. Evidence and feedback are used to refine the solution and determine whether it is ready for a live-network pilot.

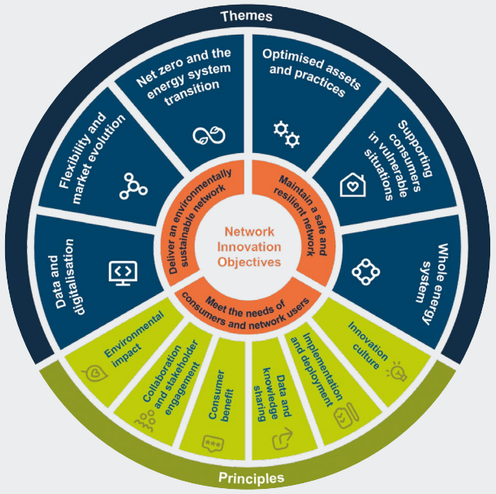
Implementation

Pilot, Implement, Learn and Improve: TRL 9

The solution is first deployed at limited scale in a live operational environment. Performance, safety, costs and benefits are monitored before wider rollout. Successful solutions are then commercialised and transferred into business-as-usual ownership, supported by procurement, training, updated processes and standards. Benefits continue to be tracked, while lessons are fed back into the innovation funnel.

The energy networks' innovation strategy

Network innovation objectives



Our innovation strategy in 2025/26

Our innovation activity in 2025/26 continues to be guided by the energy networks' innovation strategy, developed in collaboration with the Energy Networks Association (ENA), FEN and network operators across Great Britain. This shared approach ensures that innovation is coordinated at a national level, focused on delivering genuine value for customers while supporting the transition to net zero.

The strategy sets out a clear framework for addressing the key challenges facing energy networks – including decarbonisation of heat, enabling a flexible and resilient energy system, and supporting consumers in vulnerable situations. Designed to be both ambitious and adaptable, it encourages meaningful innovation without placing undue constraints on how that innovation is achieved.

Collaboration remains central to this approach. We continue to work closely with other gas and electricity networks, as well as industry partners, academia and supply chains, to share learning and accelerate progress. This has enabled us to develop a diverse portfolio of projects – all aligned to the themes and principles that underpin this strategy.

Delivering impact

As we approach the end of the RIIO-GD2 price control period, our focus has increasingly shifted towards delivering impact – scaling successful projects, embedding innovation into business-as-usual activities, and ensuring that the benefits of innovation are realised for customers and communities across Scotland and southern England.

Network innovation themes 2025/26

In 2025/26, our innovation activity is structured around six themes, ensuring a clear focus on the sector's most significant challenges. All projects align to at least one of these themes, providing a consistent and targeted approach across our portfolio.

Net zero and the energy system transition

Facilitating and accelerating the UK's transition to net zero greenhouse gas emissions.

See page 26 for more on theme 1.

Data and digitalisation

Harnessing the power of data science and digitalisation to solve system operation and stakeholder challenges.

See page 30 for more on theme 2.

Flexibility and market evolution

Developing market-based solutions to increase flexibility and accelerate adoption of low-carbon technologies.

See page 34 for more on theme 3.

Optimised assets and practices

Developing industry-leading techniques for optimising assets, operations and practices across our network.

See page 38 for more on theme 4.

Supporting consumers in vulnerable situations

Exploring how best to support the needs of vulnerable consumers today and through the energy transition.

See page 42 for more on theme 5.

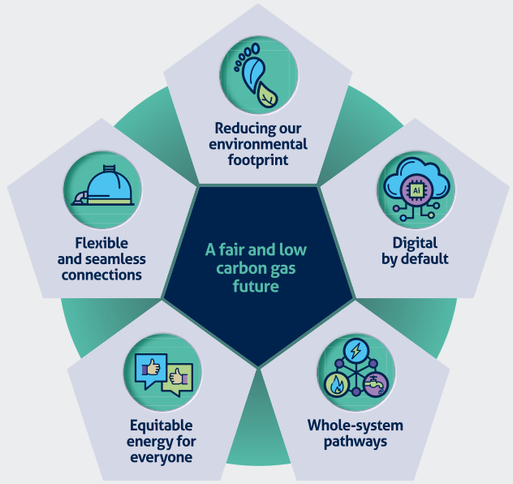
Whole energy system

Developing joined-up approaches across sectors and energy vectors to deliver a cohesive net zero transition.

See page 46 for more on theme 6.

Looking ahead: our innovation strategy for RIIO-GD3

Gas networks innovation objectives



Our innovation strategy for 2026/27

Our innovation activity in 2026/27 will be guided by the RIIO-GD3 innovation strategy, developed collaboratively across the gas networks and shaped through engagement with our wider innovation ecosystem, including partners, stakeholders and industry participants. This shared strategy provides a clear direction for innovation across the gas networks.

The strategy provides a targeted framework for innovation, focusing activity on scaling proven solutions, delivering measurable outcomes and accelerating the transition to a smarter, lower-carbon energy system. Building on the foundations established during RIIO-GD2, it retains core principles while introducing a more structured approach to where innovation can deliver the greatest impact.

Collaboration remains central to this approach. We will continue to work closely with other gas networks, as well as electricity networks, industry partners, academia and the supply chain, to share learning and accelerate progress. Workshops and engagement with our innovation ecosystem have played a key role in shaping this strategy, ensuring it reflects real-world challenges and opportunities. This approach will support a portfolio of projects that increasingly moves from early-stage research towards scalable deployment.

Delivering impact

As we enter the RIIO-GD3 price control period, our focus will be on delivering impact – scaling proven solutions, embedding innovation into business-as-usual activities, and ensuring that the benefits of innovation are realised for customers and communities across Scotland and southern England.

Network innovation themes 2026/27

In RIIO-GD3, our innovation activity will be structured around a set of core themes, ensuring a clear and targeted focus on where innovation can deliver the greatest value. All projects will align to at least one of these themes, providing a consistent framework across our portfolio and supporting the transition from concept to implementation at scale.

Reducing our environmental footprint

To reduce the environmental impact of our businesses through advance detection and remedy whilst investing in low-carbon construction and maintenance technology.

Digital by default

To promote the use of open, interoperable data and digital tools to make every decision smarter, faster and more transparent.

Whole-system pathways

To facilitate and innovate towards whole-system optimisation with the wider energy industry and ensure that the role of gas is built into any regional and strategic planning activities.

Equitable energy for everyone

To deploy innovation to ensure that our customers in vulnerable situations are not left behind during an energy transition and they have access to the technology and tools to reduce energy consumption.

Flexible and seamless connections

To enable a clean, resilient gas future by connecting, blending and transporting more green gases and facilitating new, flexible demand, side applications.

For more information on these themes please see the SGN Innovation Annual Summary 2026/27 when it is published in July 2027.

Our RIIO-GD2 achievements and engagements

Collaboration across industry and with key stakeholders is essential to ensuring the value of our innovation activities is realised.

By working closely with partners across gas and electricity networks, government, and industry bodies, we are able to share learning, avoid duplication and support a coordinated transition to a net zero energy system.

Gas Innovation Governance Group (GIGG)

We continue to work closely with the other Gas Distribution Networks through the GIGG. The Group provides oversight and coordination of innovation activities, ensuring compliance with licence conditions while identifying and progressing projects that best support the future needs of the gas network.

Department for Energy Security and Net Zero (DESNZ)

Regular engagement with DESNZ helps ensure our innovation activities align with national energy policy and contribute to the development of the UK's future energy system. Through this engagement, we provide evidence and insight from our projects to support informed policy decisions, particularly in relation to the decarbonisation of heat and the role of green gases.

National Energy System Operator (NESO)

Collaboration with NESO supports a whole-system approach to energy planning and operation. Collaboration in this area ensures that our innovation activities consider interactions across gas and electricity networks, supporting system resilience, flexibility and the integration of low-carbon technologies.

Institution of Gas Engineers and Managers (IGEM)

Through our partnership with IGEM, we support the development of industry standards and best practice, ensuring that innovation can be safely and effectively integrated into the gas network. Through this collaboration, we contribute to the evolution of technical standards required to enable the transition to low-carbon gases.

Future Energy Networks (FEN)

FEN, a company within IGEM, brings together stakeholders from across the energy sector to address key challenges facing future energy networks. We work closely with FEN to share insight from our innovation programme, contributing to collaborative projects and thought leadership that support the transition to a net zero energy system.

Energy Networks Association (ENA)

We work with ENA to support cross-sector collaboration between gas and electricity networks. Through this partnership, we contribute to industry-wide strategies, share best practice and ensure that innovation is coordinated across the energy system to deliver maximum value for customers.

Key facts

150+
project partners across our innovation ecosystem

70%
SMEs (developers and manufacturers)

30%
non-SMEs (technical assurance and validation)

£43m+
NIA funding delivered collaboratively with GDNs and DNOs

£97m+
SIF funding delivered collaboratively with GDNs and DNOs

170+
collaborative projects delivered with gas and electricity network partners

Together, these partnerships are helping to accelerate innovation, share learning across the sector, and deliver solutions that provide lasting value for customers and communities.

Progress on the RIIO-GD3 price control period determination

RIIO-GD3 has now commenced as of April 2026, and SGN has made a positive start to this five-year price control period.

Amongst our core delivery plans to maintain and upgrade our network through continued emergency and repair operations and the delivery of the iron mains replacement programme, we are pleased to have Ofgem's support with our innovation agenda, which largely benefits from a funding allowance of £24.3m for NIA as well as our broader innovation programme.

This dedicated NIA funding ensures that key investment in innovative projects can commence throughout RIIO-GD3. This will allow us to continuously improve the network for our customers, enhance operational effectiveness, and actively support the UK's net zero goals.

Accompanying this investment in Innovation for RIIO-GD3 comes additional reporting requirements implemented by Ofgem for the RIIO-GD3 period. This includes a strengthened expectation on the Innovation Annual Summary, a collaboration with other networks to organise an annual innovation summit with an agreed approach to measuring and reporting innovation outcomes and explicit reporting on programme-level innovation outcomes. SGN is implementing strategies to ensure delivery of these new changes throughout the five years.

Our RIIO-GD3 investment plan

£4bn topline investment comprising:

£1.8bn
on mains replacement

£218m
upgrading multi occupancy buildings

£153m
enhancing cyber resilience

£60m
on new and refurbished buildings

£20m
to boost biomethane per network

Regulatory and RIIO-GD3 outcomes

High-quality service from regulated firms

- Our customers receive industry-leading service
- More vulnerable customers will receive high-quality, targeted support
- Our investment creates more social value for customers and communities

Secure and resilient supplies

- Our network transports gas safely and reliably to meet the demands of our customers in all scenarios
- Our network is ready to transport clean energy to our customers
- We are resilient to a range of external shocks and stresses

Infrastructure fit for a low-cost transition to net zero

- We adopt a whole-systems approach to delivering net zero
- More people will have access to biomethane
- Harnessing green gas will help remote Scottish communities contribute to net zero
- We will be ready to accept blended hydrogen onto our network to supply customers
- We will reduce the impact our operations have on the environment

System effectiveness and long-term value for money

- We will deliver value to customers through effective investment and delivery
- Innovation will deliver improvements and effectiveness that benefit customers
- Digitalisation and the effective use of data will enhance network performance and support the transition to net zero
- We will build a more resilient workforce that works effectively to deliver more value to our customers

What our partners say

Collaboration is at the heart of our innovation approach. We continue to work closely with our partners to develop, test and deliver solutions that address the challenges facing the energy system. The feedback we receive is invaluable in helping us improve, strengthen our approach and ensure we are delivering meaningful outcomes.

"The Green Gas Access (GGA) project demonstrated how digital tools can enhance the management of green gas, such as biomethane, across UK gas networks in support of net zero ambitions. The collaboration between DNV and SGN delivered a clearer view of challenges and laid strong foundations for a digitally focused approach as green gas volumes grow."

William Osborn
Senior Consultant
DNV

"Over the past year, we worked closely with SGN's Innovation Team on significant hydrogen research projects. The team facilitated information flow, coordinated site visits, and supplied samples for testing. True collaboration with SGN was central to everything. The outcomes filled critical knowledge gaps in the safe transition to net zero, now being translated into updated standards benefitting the wider industry."

Nick Ryan
Director
Steer Energy Solutions

"Over the past year, IGEM valued collaboration with SGN's Innovation Team across numerous projects. Their collaborative approach, technical expertise and commitment to practical innovation – particularly in hydrogen design and safety – were instrumental in delivering meaningful outcomes. Working with SGN has been positive and productive, underpinned by shared focus on advancing innovation for customers and communities."

Ian McCluskey
Head of Technical and Policy
IGEM

"Working with SGN and FireBlitz on the CO Accessible Alarm project combined cutting-edge IoT technologies with inclusive design addressing a clear market gap. Developing an accessibility module integrating indoor alarms with smartphones and assistive devices aims to improve safety and accessibility for wider users. Our collaboration brought together technical innovation and usability considerations, shaping a practical and scalable solution."

Constantinos Marios Angelopoulos
Professor of Networked & Sensing Systems
Bournemouth University

"Guidehouse was delighted to work with SGN on Indus 2.0, pioneering a data-led, whole-systems approach to industrial decarbonisation planning. By bringing together gas and electricity network insights, industrial energy data and decarbonisation pathways, the project translated future industrial demand scenarios into practical network planning intelligence. SGN's leadership and openness to collaboration were critical to demonstrating how cross-network data sharing supports efficient energy transition."

Daniel Jones
Managing Consultant
Guidehouse

"Green Giraffe was delighted to work with SGN on the Biomethane Islands project, establishing viability of supplying entire towns and cities with locally sourced biomethane. We were impressed by the quality and dedication of the SGN team and their willingness to push the envelope of biomethane capabilities. This is one of very few contemporary studies globally on this issue and we are proud to be associated with it."

Michael Ware
Senior Director
Green Giraffe

"BIP Consulting has collaborated with SGN on the Real Time Settlement Methodology programme, supporting development and validation of gas settlement approaches in an evolving energy system. The programme brought together partners combining technical expertise to address challenges with billing and settlement as low-carbon gases are introduced. This collaborative approach progressed industry understanding of how gas quality can be accurately measured and managed."

Sheraz Riaz
Senior Director – Energy & Utilities
BIP Consulting UK

"We collaborated with SGN on innovation projects exploring transition pathways for multi-occupancy buildings, focusing on hydrogen feasibility to address technical gaps. ROSEN contributed to all stages of hot-tap welding procedure development, concluding with successful Live Trial welding. We assessed flexible gas transition plants' feasibility supporting UK's decarbonisation ambitions. The strength of collaboration was fundamental to success."

Mathilde Barker
Principal Engineer
ROSEN

"We worked with SGN developing the new Real Time Settlement Methodology supporting industry movement towards injecting biomethane and hydrogen into the GB gas network. The project team completed Phase 1, putting the industry on firm footing to move towards settlement methodology coping with increased biomethane and hydrogen levels whilst being accurate and fair for customers. The SGN Team provided invaluable direction and guidance."

Matt Horridge
Client Director
Correla

"During 2025 we completed an NIA project for SGN on hydrogen compatibility of transmission assets from a materials' aspect. Project success depended on combining inputs on operations, inspection and materials from all stakeholders. Regular involvement with SGN's Future of Energy team ensured early understanding of each asset's function and performance requirements. Collaborative working ensured outputs were ready to deploy immediately."

Adam Bannister
Technical Team Lead
HSE Science Division

"Apollo is delighted to work alongside SGN on an exciting study exploring synthetic natural gas feasibility. This innovative work has potential to unlock significant additional volumes of green gas, supporting decarbonisation of hard-to-abate sectors. Apollo has an extensive track record supporting UK Gas Distribution Networks, and this collaboration reflects the team's strong commitment to innovation and partnership."

Calum Westland
Senior Consultant
Apollo

"PNDC is delighted to be working with SGN on the 'MOB Transition Pathways: Regulatory & Strategic Governance' project. This project is helping to enable the development of credible, technically grounded transition pathways that will support the safe and efficient decarbonisation of a significant proportion of the UK's housing stock."

Priya Bhagavathy
Lead Research and Development Engineer
PNDC

Event attendance and collaboration 2025/26

SGN showcase events

This year SGN has been proactive in hosting and leading events that bring together innovators, partners, academics and policymakers from across the energy sector. These showcase events reflect our commitment to open knowledge sharing, driving collaboration and ensuring that the progress made across our innovation portfolio reaches the widest possible audience.

SGN Innovation Showcase

Leaders from across the energy sector gathered in London for SGN's Innovation Showcase, bringing together innovators, academics, researchers, industry partners, regulators and policymakers to explore projects shaping the UK's transition to net zero. Chief Strategy and Regulation Officer Antony Green highlighted the importance of collaboration across the energy system to deliver a coordinated transition.

Discussions focused on optimising gas networks for future demands, including biomethane and fair billing for low-carbon gases through the RTSM programme. The event explored challenges of decarbonising industry and multi-occupancy buildings (MOBs), and networks' role in carbon capture and storage.

By disseminating findings openly and early, SGN accelerates learning, avoids duplication and builds momentum to drive the energy transition forward.

Biomethane Futures

SGN hosted the Biomethane Futures event, bringing together producers, developers and energy users to explore how biomethane can play a central role in the UK's net zero transition. The event showcased SGN's growing biomethane network, with 45 plants connected representing more than 3.5 TWh of renewable gas capacity. Discussions covered improving the connection experience, emerging regional injection hubs, and how customers can decarbonise using biomethane – reflecting SGN's ambition to supply one million domestic customers with biomethane by 2031.

SGN-led knowledge sharing

Alongside formal events, SGN has continued to share project highlights through a range of channels and platforms. By disseminating findings openly and early, SGN aims to accelerate learning, avoid duplication of effort and build the collaborative momentum needed to drive the energy transition forward.

FEN Dissemination Webinar

SGN participated in the FutureGas Forum Spring Insight, a cross-network dissemination webinar hosted by FEN and IGEM, bringing together all four GDNs and National Gas. SGN presented findings on the suitability of existing natural gas transmission assets for hydrogen use. These webinars are designed to maximise accessibility and knowledge transfer across the sector.

SGN dissemination and engagement

SGN actively shares its innovation progress beyond its own network, engaging with industry peers, academics and policymakers through a programme of events, exhibitions and community days. Our presence across the sector reflects a genuine commitment to open collaboration.

All-Energy Exhibition and Conference

At the All-Energy Exhibition and Conference, SGN's Strategy and Regulation team hosted a stand in Glasgow and engaged with industry peers on renewable energy. The event covered decarbonising heat, transport, and industry, and reinforced SGN's commitment to innovation and collaboration in the transition to a low-carbon energy system.

SIF Community Day

At the SIF Community Day, SGN shared insights from innovative projects at table discussions. Supported by SIF Beta funding, these initiatives are helping to drive cleaner, safer and more effective energy solutions across the network.

Utility Week Live

At Utility Week Live, the conference explored the changing role of the UK's gas networks in a net zero future, with a focus on hydrogen, biomethane, and supportive policy for hybrid heating. It highlighted the complexity of decarbonising heat and industry, and the collaboration needed to deliver a secure, affordable, and low-carbon energy system.

No-Dig Live

At No-Dig Live 2025, members of the SGN team explored trenchless technologies that improve operational safety. Innovations such as horizontal directional drilling and microtunnelling help reduce disruption, speed up projects, and minimise environmental impact, supporting SGN's commitment to sustainability and better customer outcomes.

Energy Innovation Basecamp

At Energy Innovation Basecamp, hosted by the ENA, experts from across gas and electricity networks came together to share ideas on decarbonising operations, improving infrastructure, and maximising existing assets. The event encouraged collaboration through presentations, networking, and future workshops to support a cleaner, safer and more sustainable energy system.

Find out more about our upcoming events

Stay up to date with SGN's innovation events, dissemination webinars and industry engagements:

FutureGas Forum events:
igem.org.uk/future-energy-networks/fen-events.html

FEN Innovation Portal:
portal.futureenergynetworks.org.uk

ENA Smarter Networks Portal:
smarter.energynetworks.org

SGN Future of Energy strategies

RIIO-GD2 gave us the evidence. RIIO-GD3 is about preparing for whatever the future holds – hydrogen for industry, biomethane at scale, electrification, heat networks or a combination of all. With £24.3m NIA funding and a diverse innovation portfolio, SGN is ready.

System transformation

Hydrogen blending

Hydrogen blending is seen as an important stepping stone towards net zero that leverages most of the existing gas network and does not require disruptive changes to customer appliances. If hydrogen blending was applied at 20% by volume across SGN's 5.9 million businesses and homes, it is estimated that it could generate the same carbon saving as annually taking 850,000 cars off the road.

The Blending Implementation Programme is a collaborative piece of work between the four distribution networks and National Gas that began in 2023 and is now in its third phase. This phase of the programme is designed to give the networks a clear understanding of what is required to become blend-ready from a regulatory position. In parallel to this collaborative programme, SGN is progressing with translating the impacts of hydrogen blending to our assets, processes, systems and people to inform a potential implementation plan for blendreadiness.

2023

In December 2023, DESNZ delivered a positive policy decision on blending up to 20% by volume into the distribution networks (subject to HSE approval of the safety case).

2023 to present

Delivery of innovation funded projects, most notably multiple phases of the Blending Implementation Programme (BIP).

2028

Subject to policy certainty and award of funding, initiate network interventions to ensure SGN is blend ready. This will encompass our assets, processes, systems and people.

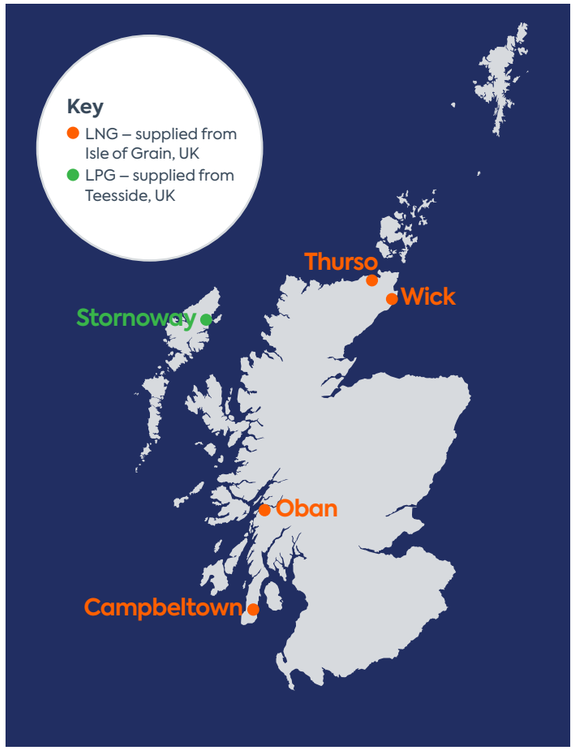
2032

SGN aims to be ready to receive blending connections from 2032.

SIUs

SGN operates and maintains four remote mainland gas grids located on Campbeltown, Oban, Wick and Thurso which are not fed off the National Transmission System. Instead, they are supplied with liquefied natural gas (LNG) transported from the Isle of Grain in Kent. The production and required logistics chain to transport LNG to the SIUs is carbon intensive and not aligned with net zero strategies.

As such, we are exploring decarbonisation opportunities for the SIUs. A conceptual design has recently been completed for delivering locally produced Bio-CNG to Wick and Thurso, displacing current LNG supply. In RIIO-GD3, we aim to develop this design through a front-end engineering design (FEED) and submit a re-opener for detailed design and construction. Learnings from Wick and Thurso will inform studies for Oban and Campbeltown.



Hydrogen evidence

RIIO-GD2: Investigating the transition to green gases

Throughout RIIO-GD2, SGN worked collaboratively with government, regulators and industry partners to investigate the potential for green gases – including hydrogen, biomethane and other low-carbon alternatives – to play a role in the UK's energy transition. This work was essential to inform future policy decisions and understand which solutions could realistically deliver decarbonisation for customers.

SGN's investigation programme examined multiple pathways. While hydrogen featured significantly, the work also included major initiatives on biomethane scaling, including the RTSM to enable fair billing for green gas, and practical assessments on MOB decarbonisation. The hydrogen evidence strand examined 100% hydrogen heating in real-world conditions, complemented by technical studies including the Asset Compatibility Assessment Tool – which determined the suitability of existing transmission assets for hydrogen use – and the Velocity design with hydrogen study, which investigated operational behaviour at higher velocities. These projects generated critical evidence on what is technically and economically viable.

The evidence has demonstrated that biomethane is already delivering immediate carbon savings and can be scaled significantly using existing infrastructure. For hydrogen, evidence shows it can play a role in industrial and commercial applications where infrastructure allows. The Health and Safety Executive (HSE) confirmed a comprehensive safety case for industrial hydrogen use. Government assessment of the evidence has concluded that hydrogen has potential for specific applications and remains a focus area to demonstrate its viability and role across the gas networks as the energy transition evolves.

Future strategy

RIIO-GD3: Preparing for a cleaner gas network

As SGN enters RIIO-GD3, our innovation strategy focuses on delivering measurable decarbonisation benefits. We will continue to develop hydrogen capability for industrial and power applications where evidence supports viability, but the primary focus is on scaling biomethane – a solution already in use and delivering real carbon savings today.

With £24.3m NIA funding confirmed for RIIO-GD3, SGN's innovation programme is structured around three strategic pillars:

- securing today's network through safety and operational improvements
- coordinating the transition to low-carbon gases, with biomethane as the primary near-term opportunity
- preparing infrastructure for the future energy system and ensuring a fair transition for all customers

This approach prioritises solutions that are proven, deployable now and deliver genuine value, while maintaining flexibility for emerging technologies as evidence develops.

By building on the evidence generated in RIIO-GD2 and responding to government policy guidance, SGN is positioned to support customers and communities through the energy transition with confidence. Our innovation strategy is pragmatic, evidence-led and focused on delivering real decarbonisation benefits. Whether through scaling biomethane, developing hydrogen for industry, supporting electrification or exploring new heating solutions, SGN's innovation portfolio is designed to ensure the gas network remains safe, effective and fit for purpose as the energy system evolves.

Today's network

The strategic intent is to maintain a safe, resilient and effective gas network that continues to deliver reliable energy to customers while beginning to integrate low-carbon sources. This includes tooling, technological advancements in operational effectiveness and safety.

Network transition

SGN's strategy centres on developing the technical, operational and regulatory readiness needed to support national heat decarbonisation options, ensuring flexibility and robust evidence for future decisions.

Future network

Long-term strategy focuses on designing a future network that supports net zero through a viable, effective configuration and the integration of multiple low-carbon technologies.

H100 Fife

H100 Fife is demonstrating the UK's first end-to-end 100% hydrogen network for homes, helping to build evidence for the future role of hydrogen in decarbonising heat.

Overview

Located in the heart of Fife, H100 Fife will demonstrate the production, storage, distribution and use of 100% hydrogen for heating homes. The project is testing the technical, operational and social feasibility of hydrogen heating, while supporting the development of the evidence, standards and skills needed for future deployment.

Developing the hydrogen network

H100 Fife continues to make significant progress towards delivering the UK's first hydrogen heating trial for homes and buildings.

A major milestone was achieved with commissioning activities beginning at the hydrogen production and storage site at Fife Energy Park. This important step enables the production and storage facilities to move towards operational readiness ahead of supplying hydrogen to the network.

Construction of the new hydrogen gas network is complete alongside the installation of a dedicated electrolyser compound and hydrogen storage tanks. 97 Gas Safe registered engineers have completed specialist hydrogen training at SGN's dedicated training centre, supporting the development of the skills required for future hydrogen deployment.

In parallel, work has continued at the demonstration homes, helping to showcase how hydrogen appliances and systems could operate in a domestic environment. Once operational, the production and storage facilities will supply hydrogen directly into the network, enabling connected homes to receive hydrogen as part of the live trial.

Safety and regulation

A significant regulatory milestone was achieved during the year with the receipt of a Letter of Assistance (LoA) from the HSE. The LoA followed an independent assessment of the project's Safety Dossier, which sets out how hydrogen will be safely produced, stored, distributed and used within the trial.

This represented an important step in demonstrating that the project is progressing in line with the robust safety and regulatory requirements necessary for hydrogen operations.

Supporting communities through H100 Fife

Alongside the technical delivery programme, SGN has continued extensive engagement with local communities throughout the project. This has included supporting local employment and apprenticeships, working closely with organisations across Fife to ensure the project delivers long-term benefits to the communities it serves.

The H100 Fife project has already delivered a range of social value initiatives, including support for local charities, community groups and schools. 2,500 Science Technology Engineering Maths (STEM) workshops have been delivered, as well as community outreach and energy advice activities delivered across the region.

Looking ahead

As H100 Fife progresses towards live operation, the project continues to generate valuable evidence around the practical delivery of hydrogen for heat. The learning generated through the trial will help inform future policy, standards and operational approaches, supporting the wider transition to a low-carbon energy system as SGN moves towards RIIO-GD3.

LTS Futures

Demonstrating how existing gas infrastructure can be repurposed to transport hydrogen, LTS Futures delivered a first-of-a-kind live trial on SGN's Local Transmission System network.

Overview

LTS Futures explored the potential to repurpose SGN's Local Transmission System (LTS) infrastructure to transport hydrogen in place of natural gas. Through laboratory and full scale testing and a live trial, operational activities were demonstrated on an isolated pipeline between Grangemouth and Granton. The project developed a blueprint methodology for uprating and repurposing and provides critical to support the future role of hydrogen.

Research and testing

In summer 2025, the £31.1m LTS Futures project successfully completed a landmark live hydrogen trial on a repurposed section of SGN's LTS network. An extensive programme of laboratory and full-scale testing was completed in collaboration with TWI and DNV. The project sought to better understand the impact that differences between hydrogen and natural gas could have on pipeline materials, operational procedures and network integrity, generating valuable evidence to support the future repurposing of existing LTS infrastructure.

Preparation

A significant programme of preparatory works was undertaken prior to introducing hydrogen into the pipeline. This included inspection of pipework, gauge pigging, a full hydrotest, pressure testing, coating assessments and detailed integrity checks to ensure the infrastructure was suitable for the trial.

A comprehensive Safety Dossier was also developed, defining how the live operations would be safely managed and ensuring all regulatory requirements were met. The HSE reviewed the approach under the same regulatory processes applied to operational gas networks.

Live trial

The live trial took place on a 30km isolated pipeline between Grangemouth and Granton, representing one of the most significant hydrogen infrastructure demonstrations undertaken on a gas transmission pipeline in the UK.

The operational trial successfully demonstrated a range of real-world activities under hydrogen conditions. This included purging the pipeline with hydrogen, commissioning an entry unit, and carrying out welding a new connection and hot tapping and flow stopping operations, marking a significant milestone for the wider industry.

By repurposing existing infrastructure rather than constructing entirely new networks, the project aimed to build evidence around how hydrogen could be integrated into the future energy system in a practical and cost-effective way.

Emergency response simulation

Alongside the technical demonstration, emergency response desktop exercises were carried out with participation from SGN operational teams, emergency services, local authorities and the HSE. These exercises helped assess how existing procedures may need to evolve to support future hydrogen operations, while ensuring stakeholders were prepared to respond effectively to potential incidents.

Looking ahead

The findings from LTS Futures will play an important role in informing future policy, standards and operational approaches for hydrogen infrastructure. As SGN moves towards RIIO-GD3, the project represents a major step in closing key evidence gaps and understanding how existing gas networks could support the UK's transition to a low-carbon energy system.

Intelligent Gas Grid (IGG) – Beta

The IGG project demonstrates how machine learning can transform gas network operations, improving effectiveness, reliability, emissions performance, and enabling greater integration of renewable gas across the network.

Overview

The IGG project delivers advanced digital solutions for UK gas distribution network operators to reduce operational costs, improve reliability, cut emissions, and increase renewable gas injection. It applies machine learning to enable data-driven monitoring and autonomous decision-making. IGG builds on the earlier Pressure Control and Management project, extending that foundation by embedding intelligence into operational control and shifting capability from remote operation toward autonomous optimisation. Over the past year, field trials have expanded, with a key milestone being approval of the first minimum viable product by SGN's Policy team, marking transition from concept validation to early deployment.

Progress

The project delivers three core solutions through dedicated workstreams: intelligent pressure control in low-pressure networks; intelligent monitoring and anomaly detection; and intelligent pressure control in medium pressure networks. Each workstream follows a structured pathway including product development, live field trials, performance analysis, digital assurance, formal approval, and knowledge sharing. All four UK gas distribution network operators are partners, ensuring national applicability.

Intelligent pressure control; low pressure networks

This workstream achieved the first approved IGG solution following field trials across five SGN low pressure networks in southern England. Compared with manual seasonal control, results showed average pressure reductions of up to 31% in winter and up to 16% annually, translating into proportional emissions benefits. Network resilience was maintained throughout, with zero low-pressure incidents recorded. Deployment of over 60 battery-powered IoT devices enabled scalable intelligent control, supporting expansion into larger networks including Basingstoke and Newbury, where machine-learning-driven setpoints now optimise pressure autonomously.

Intelligent monitoring and anomaly detection

This workstream has progressed from modelling into live field trials across approximately 100 sites. The system continuously learns normal operational behaviour and identifies deviations in real time. Two key use cases demonstrate value: the system detected early signs of asset failure around two weeks before traditional monitoring would have; and highlighted a misconfigured district governor stream that could have reduced network resilience. User interface designs are being developed to integrate alerts into operational dashboards, ensuring outputs are accessible and actionable.

Medium pressure optimisation

The final workstream extends intelligent pressure control to medium pressure networks, which play a critical role in enabling biomethane injection. These networks are currently managed using manual, seasonal adjustments with limited dynamic optimisation. IGG aims to enable autonomous, real-time setpoint control to improve utilisation of available capacity and support greater biomethane flow into the grid, reducing operational constraints and enabling additional producers to connect.

Looking ahead

Focus will scale machine learning across networks and embed it into operational management.

Velocity design with hydrogen – Beta

The Velocity design with hydrogen project is generating critical evidence to understand how hydrogen behaves within existing gas infrastructure and how networks could safely operate at higher gas velocities in the future.

Overview

The project is investigating the impact of hydrogen flow on existing gas network infrastructure, focusing on erosion, vibration, noise and particle transportation. Through a large-scale testing programme at DNV's Spadeadam research facility, the project aims to define safe operational velocity limits for future hydrogen networks and support the development of updated industry standards. The outcomes will play an important role in determining how existing gas infrastructure could be safely repurposed for hydrogen service in the future.

Background

Understanding how hydrogen behaves under operational conditions is critical, as it has significantly different physical properties to natural gas, including a lower energy density meaning higher flow rates may be required to deliver the same level of energy demand to customers. To avoid extensive and costly upgrades to the existing gas network, one potential solution is to increase the velocity at which hydrogen can travel through pipelines. However, before this can be implemented safely, further evidence is required to understand how higher hydrogen velocities may impact existing infrastructure and operational practices. The Velocity design with hydrogen project was established to address these evidence gaps and support the future development of hydrogen-ready gas networks.

Understanding the challenge

Previous phases of research identified several key areas requiring further investigation before updated hydrogen velocity limits could be considered. These included the potential for increased erosion within pipelines, the movement and transportation of debris or particles through the network, and the effect of hydrogen flow on vibration and operational noise levels. Any increase in vibration, erosion or debris movement could impact the integrity and performance of the network, making it essential that these factors are fully understood before wider deployment.

Testing and validation

A full-scale test rig is being constructed at DNV's Spadeadam test and research centre in Cumbria, enabling controlled testing under realistic hydrogen operating conditions and providing empirical evidence to validate existing industry models and assumptions. The testing programme is examining erosion, particle transportation, vibration and noise behaviour across a range of operating conditions, informing updated gas network design requirements and future operational standards for hydrogen transportation. Findings are being reviewed through workshops led by IGEM, ensuring that learning is shared consistently across the sector.

Collaboration across industry

The project is being delivered collaboratively with DNV Services UK Limited, IGEM, Cadent, National Gas Transmission, Northern Gas Networks and Wales and West Utilities. Working collaboratively, the project is helping develop a consistent evidence base to support future hydrogen deployment across the UK, with outputs expected to contribute directly to updated IGEM hydrogen supplements and future network design standards.

Looking ahead

The Velocity design with hydrogen project is helping close key technical evidence gaps and supporting the development of the standards, operational practices and network capability required for future hydrogen deployment under RIIO-GD3.

Predictive Safety Interventions (PSIs) – Beta

The PSI project is using artificial intelligence (AI) and real-time data to transform safety management, helping identify and mitigate operational risks before incidents occur.

Overview

Delivered by FYLD in partnership with SGN and other UK gas networks, the PSI project applies AI to predict and prevent safety risks in real time. Funded through Ofgem and UKRI's Strategic Innovation Fund, the project is supporting a shift from reactive safety management towards proactive, predictive intervention across high-risk operational environments.

Transforming safety management

The PSI project represents a significant evolution in safety management, moving from a static, point-in-time activity to a continuous and responsive process. Using AI, the system analyses live operational, behavioural and environmental data to identify elevated risk conditions and intervene before incidents escalate, providing real-time prompts and targeted interventions directly to operational teams at the point of work.

AI-powered intervention capability

The project combines behavioural insights, site conditions and historical safety data to quantify operational risk in real time, generating dynamic interventions tailored to conditions being experienced by field teams. A key focus was ensuring the technology could be integrated into existing operational workflows without creating unnecessary complexity for frontline teams. Iterative development and user-centred design principles ensured interventions remained intuitive and practical. PSI functionality has now been deployed into live SGN operations and embedded within business-as-usual activities and operational training processes.

Impact at scale

The project has demonstrated strong operational performance during live deployment trials. Predictive models achieved a 69% accuracy rate in identifying high-risk scenarios, with interventions successfully delivered on 68% of high-risk jobs. Early operational results demonstrated a 37% reduction in incidents during Q1 2025 compared with Q1 2024, highlighting the potential for predictive technologies to improve safety outcomes across the sector. The project has also identified a potential sector-wide benefit of more than £112m over a 10-year period.

Live trial and operational learnings

Deployment within live operational environments generated valuable insight into how AI can influence frontline safety behaviours. Interventions proved most effective when delivered directly to field teams and embedded naturally within existing workflows. Near-total response rates were achieved for AI-driven safety prompts during trials, validating the role predictive insights can play in supporting operational decision-making. Continuous feedback from operational users has been used throughout to refine the technology and support long-term adoption.

Looking ahead

The PSI project has received significant industry recognition, including winning the Safety category at the Gas Industry Awards 2025 and being showcased at the Critical National Infrastructure: AI Predictive Safety event at the House of Lords. As SGN moves into RIIO-GD3, PSI demonstrates how digital technologies and AI can support safer, smarter and more proactive network operations, while helping embed innovation directly into business-as-usual activities.

Predictive models achieved a 69% accuracy rate in identifying high-risk scenarios, with interventions successfully delivered on 68% of high-risk jobs.

Real-Time Settlement Methodology (RTSM) – Phase 1 – methodology development

The RTSM programme is addressing the challenge of varying energy content across green gases and the impact this could have on future customer billing. The programme aims to deliver a fair, accurate and enduring settlement methodology that supports the transition to low-carbon gases while maintaining confidence for consumers and market participants.

Progress

Phase 1 of the RTSM programme formally concluded in March 2026 and delivered a comprehensive Basis of Design for a practical and robust future settlement and billing framework for Great Britain. The programme has established a credible solution to improve the accuracy and effectiveness of energy billing throughout the net zero transition while ensuring the system remains reliable and fit for purpose.

The first phase of the programme was structured across five strategic workstreams: Market Research, Modelling Solution, Feasibility Study & Roadmap, Rollout Strategy for a Pilot, and Dissemination.

Findings

The findings from Phase 1 identified Computational Fluid Dynamics (CFD) modelling as the most effective technique for tracking calorific value (CV) across Great Britain's gas networks.

Research undertaken through the programme demonstrated that a distributed modelling approach, where Gas Distribution Networks utilise in-house knowledge and operational expertise to model their own networks, would provide the most effective solution.

The programme also determined that CVs should be modelled hourly and aggregated into daily billing values to ensure intraday variations and network disruptions are accurately captured.

During Phase 1, a range of software vendors were engaged and assessed to determine their suitability for the proposed solution. The most promising solutions progressed into initial offline testing to further evaluate performance and compatibility with future network requirements.

Preliminary analysis was also undertaken to identify suitable network locations for future pilot activities, helping inform decision-making for the next stages of the programme.

Industry engagement

Throughout Phase 1, monthly update meetings were held with the project Steering Committee, bringing together subject matter experts from organisations including all Gas Distribution Networks, National Gas Transmission, Xoserve, NESO, Ofgem, DESNZ and delivery partners BIP Consulting UK and Correla.

The programme also maintained close engagement with Ofgem, ensuring the Regulator remained informed on key project developments and decision points.

In late 2025, a series of dedicated industry engagement sessions were hosted to present findings, gather feedback and support collaboration across stakeholders. These sessions helped shape project outputs and ensured the emerging solution reflected wider industry requirements.

Engagement to date has demonstrated that RTSM is regarded as a critical enabler for the future transition of the gas network and increased integration of low-carbon gases.

Looking ahead

Work is now under way to assess options for a future RTSM pilot phase. Key considerations include network location, gases to be used, software solutions and pilot duration.

The pilot phase will test the proposed solution on the live network, including modelling software performance, data processing and the accuracy of the proposed billing methodology. This represents a critical next step towards nationwide implementation and the wider delivery of the RTSM programme.

Engagement to date has demonstrated that RTSM is regarded as a critical enabler for the future transition of the gas network and increased integration of low-carbon gases.

Multi-Occupancy Building (MOB) Transition Pathways

MOB Transition Pathways explores how gas networks can build a stronger evidence base for both immediate operational safety and longer-term decarbonisation decisions in some of the UK's most complex building types.

Overview

This featured project brings together two complementary workstreams to address the future of MOBs from both an engineering and strategic perspective. Across Great Britain, these buildings present a unique challenge because they combine ageing internal gas infrastructure, complex ownership arrangements, varied customer needs, and an increasingly fast-moving policy landscape. By combining technical evidence generation with regulatory and governance analysis, the project creates a more complete pathway for decision-making.

There are around 450,000 MOBs across the UK currently connected to the gas network. Many include vulnerable residents, constrained layouts, complex pipework, and systems that have evolved over time rather than being designed as a single integrated asset. This makes them one of the most difficult parts of the network to assess, manage and decarbonise safely.

Future asset integrity

The first sub-workstream focuses on closing critical safety and technical evidence gaps linked to both hydrogen conversion and existing natural gas operations. Building on earlier hydrogen in MOBs work, it responds directly to issues highlighted through the HSE's comprehensive formal assessment, where further evidence was needed before hydrogen conversion could be considered at scale.

Led by ROSEN Group with specialist support from DNV, the work delivers eight interlinked technical streams. These include improved approaches for inspecting pipework, and laboratory testing to understand how temperature cycling may affect long-term system integrity. The project will also update the existing MOBs Quantified Risk Assessment using the latest evidence and modelling methods.

Its value extends beyond future hydrogen decisions. Because many of the issues are equally relevant to today's natural gas network, the outputs will improve current asset management, strengthen inspection practices, and support a more robust evidence base for safe operation in complex buildings.

Regulatory and strategic governance

The second sub-workstream examines how networks can make better strategic choices for MOB decarbonisation in a policy environment that is still evolving. Hydrogen, heat pumps, heat networks, biomethane, and hybrid systems may all play a role, but selecting the wrong pathway too early could lead to stranded assets, poor investment decisions, and slower progress towards net zero.

Delivered with the Power Networks Demonstration Centre at the University of Strathclyde, this work combines desktop research with stakeholder engagement. It maps the legislative, regulatory, and standards landscape across England and Scotland, while also exploring local planning constraints, funding routes, and real-world delivery issues through engagement with regulators, local authorities, housing bodies, and technology providers.

Together, the two sub-workstreams will support clearer management procedures, stronger industry guidance, and a future decision-making framework for MOB decarbonisation. The result is a single project that improves today's operational resilience while helping networks prepare for a coordinated, evidence-led transition to low-carbon heat.

Delivering immediate operational value for today's gas network while strengthening the safety case for tomorrow's energy transition.

MASiP Phase 3

MASiP Phase 3 is advancing a flexible, resilient pipeline system capable of transporting hydrogen – moving from concept into a rigorous programme of qualification testing and demonstrating the evidence needed for future gas network deployment.

Overview

The MASiP programme – Mobile Automated Spiral Intelligent Pipe – is developing a flexible, resilient and future-proof transmission pipeline designed to carry hydrogen and other gases. Building on two earlier phases that identified key technical gaps and developed initial solutions, Phase 3 has applied a rigorous qualification testing programme to characterise the pipe system and validate its performance against established industry standards.

The programme has generated evidence to qualify the MASiP pipeline system for compliance with IGEM and API 15S standards – an essential building block for any future gas network deployment.

Background

Previous phases of the MASiP programme identified three key technical gaps requiring resolution before the system could be considered ready for gas network application:

- A proven repair technique for damaged sections
- The development of tight radius bends
- Intelligent early warning capability for damage and ground movement

Phase 3 was designed to address each of these gaps through a structured testing regime.

Key achievements

Phase 3 has delivered a significant body of qualification evidence:

- Burst tests demonstrating Maximum Operating Pressure (MOP) of 75 barg for hydrogen transport at a safety factor of 0.5 – with a repeated maximum failure pressure exceeding 170 barg.
- Blunt/sharp dent, gouge and wall loss damage testing completed. The Helical Optical Fibre system can identify when damage is occurring and characterise how pipeline integrity is affected.
- Carbon fibre repair technique tested – proving a maximum burst pressure of 170 barg can be achieved following repair.
- A tight-radius bend manufactured using carbon fibre reinforced PE, with two straight lengths of MASiP pipe.
- Small-scale test setup design development and testing to validate early results and assure early damage detection.

Looking ahead

The qualification evidence generated in Phase 3 provides the foundation for future gas network deployment. The MASiP system offers the potential to reduce the cost and disruption of network expansion while incorporating built-in intelligent monitoring – capabilities that will become increasingly important as the network evolves to carry hydrogen and other low-carbon gases.

The programme will continue to build on these results, with future phases expected to progress from qualification into detailed design and, ultimately, live network trial.

MASiP Phase 3 has successfully demonstrated key pipeline performance and integrity capabilities, helping advance resilient hydrogen and biomethane transport systems for future low-carbon gas networks.

Key Project Showcase

Theme 1:
Net zero and the energy system transition

Facilitating and accelerating the transition to net zero greenhouse gas emissions sits at the heart of the energy networks innovation strategy. As the UK moves towards a low-carbon future, networks must play a critical role in enabling the decarbonisation of heat, transport and industry.

At SGN, our innovation activity is focused on developing and demonstrating the technologies and solutions required to support this transition. This includes exploring the role of green gases such as hydrogen and biomethane, alongside identifying practical pathways for their integration into the existing network. Through our projects, we are building the evidence needed to inform policy, support decision-making and enable deployment at scale.

As we move towards RIIO-GD3, the focus is increasingly on translating this evidence into action – ensuring that innovation delivers tangible outcomes and supports the delivery of a net zero energy system.

Biomethane Islands

Innovation Registration Number: NIA2_SGN0072

Background

The Biomethane Islands project assessed the feasibility of isolating distinct areas of our Scotland network and supplying them wholly with biomethane in an end-to-end, sustainable system. The project explored key factors required for the successful deployment of the concept, highlighting areas of opportunity to ensure that the maximum potential of biomethane as an enduring decarbonisation solution can be realised.

The problem we are trying to solve

By the early 2030s SGN has ambitions to power up to one million households and businesses with biomethane. However, complex technical and regulatory barriers are in place that limit biomethane's full potential and the current Green Gas Support Scheme (GGSS) won't fund new biomethane plants commissioned after 2030. To help achieve SGN's goal, innovative ways to increase biomethane production volumes and embed supply are required. Biomethane Islands sought to tackle this challenge by testing the island concept – three networks of differing size and configuration were selected across SGN's Scotland network as case studies. Working with a diverse consortium of industry experts, we undertook an in-depth analysis of all aspects key to the success of the concept including the availability of suitable feedstocks, land requirements, production optimisation, gas storage, waste management, market frameworks and financeability.

Our solution

This project has delivered a comprehensive business case for the development of Biomethane Islands across Scotland. The outputs highlight that for the three Scottish regions explored, there is an attractive business case for Biomethane Islands provided that certain technical and regulatory pre-conditions can be met. Our findings have highlighted areas of opportunity and required change and the project has outputted recommendations of next steps to realise Biomethane Islands across the region. SGN will continue to develop this research and aims to develop a blueprint to enable Biomethane Islands to be replicated nationwide.

Our partners on this activity

- Alder BioInsights
- Axis P.E.D
- Green Giraffe Advisory
- University of Surrey

Links to more information on this innovation project

portal.futureenergynetworks.org.uk/content/projects/NIA2_SGN0072

Key Project Showcase

Biomethane feedstock mapping and strategic growth planning study

Innovation Registration Number: NIA2_SGN0090

Background

As the UK accelerates efforts to decarbonise, interest in anaerobic digestion (AD), and biomethane in particular, has grown significantly. Policy support, including the GGSS, is driving the development of new biomethane plants. Many of these facilities are focused on processing waste and residual feedstocks, such as food waste and by-products from industrial food processing, often at relatively large scales of around 60 GWh per year.

The problem we are trying to solve

To date most AD facilities have been constructed in proximity to the gas grid, where grid infrastructure is already present and capacity exists. This reduces upfront connection costs and improves the case for investment. However, it often necessitates the transportation of the feedstocks needed for AD which is costly.

The costs of feedstocks themselves have also escalated in recent years. Anticipated increases in food waste feedstocks have been slow to materialise, crop yields have been impacted by extreme weather events and input costs (fuel and fertiliser) have been volatile. These combined factors can make process and commercial stability difficult to achieve for AD facilities and result in assets running significantly below capacity.

Our solution

This study aims to rethink the conventional AD business model, looking at building future AD capacity closer to where feedstocks are produced and developing offtake capacity accordingly. Considering the optimum location of AD from a feedstock perspective mitigates one of the largest operational risks for biomethane producers.

A GB-wide analysis of biomethane feedstock arisings is being undertaken, including location, determination of quality and composition of each feedstock type. Feedstock hotspots and alignment with the grid will be combined to consider how and where sustainable biomethane growth can best be achieved.

Our partner on this activity

- Alder BioInsights

Links to more information on this innovation project

portal.futureenergynetworks.org.uk/content/projects/NIA2_SGN0090

Catalysing Biomethane Growth in the UK

Innovation Registration Number: NIA2_SGN0105

Background

The AD industry is sizeable in the UK. However, upgrading capacity for grid injection remains below its technical and economic potential and continues to lag behind European peers. Biomethane growth has slowed due to fragmented policy and regulatory frameworks, uncertainty over long-term support mechanisms, including the GGSS ending in 2028, and the absence of a clear, enduring national strategy. This misalignment reduces investor confidence and constrains project development.

The problem we are trying to solve

To unlock biomethane's full potential, policy clarity and regulatory alignment are required to create stable investment conditions. Biomethane is a renewable gas that can be stored, dispatched when needed, and produced domestically. It can help meet demand for heat, flexible power, and industrial energy while making use of existing gas infrastructure and limiting impacts on consumers during the energy transition. A detailed review of the UK's biomethane policy and regulatory framework is therefore being undertaken to provide a clear foundation for reform that enables sustainable biomethane sector growth. By benchmarking international best practice and aligning stakeholder perspectives, the project will strengthen policy coherence, improve regulatory clarity and increase investor confidence. This will help to remove structural barriers currently constraining production and grid injection, supporting accelerated deployment of domestically produced renewable gas.

Our solution

This project will generate new insights into international best practice and successful biomethane policy frameworks, enabling UK gas networks to better understand the mechanisms that have driven scale-up in other jurisdictions. By identifying transferable approaches and translating them into evidence-based propositions for regulatory reform, the project will support more informed policy engagement and help create the conditions required for sustainable biomethane growth in the UK. By supporting domestic production of renewable gas, the project will contribute to UK net zero ambitions and enhance energy security by reducing reliance on imports.

Our partner on this activity

- Blunomy

Links to more information on this innovation project

portal.futureenergynetworks.org.uk/content/projects/NIA2_SGN0105

This project is building the evidence base to strengthen regulatory clarity, improve investor confidence and unlock sustainable, large-scale, biomethane growth across the UK.

Key Project Showcase

Theme 2:
Data and digitalisation

Data and digitalisation are key enablers of a smarter, more effective and responsive energy system. The innovation strategy highlights the importance of harnessing digital tools and data-driven insights to address system challenges and improve decision-making.

Our innovation programme is advancing the use of real-time data, digital platforms and advanced analytics to enhance visibility and control of the network. By improving how data is captured, shared and utilised, we are enabling more proactive asset management, faster response to network issues and more timely planning.

This digital-first approach also supports greater transparency and collaboration across the energy sector. As we enter RIIO-GD3, digitalisation will continue to underpin innovation, enabling scalable solutions that support system resilience and improve outcomes for customers.

Asset Compatibility Assessment Tool for Transmission

Innovation Registration Number: NIA2_SGN0077

Background

This project looked to extend the methodology developed under the H21 Hydrogen Ready Components projects to encompass the assessment of assets operating >7 barg. The scope included transmission assets up to 94 barg and focused on their compatibility with 100% hydrogen. Assets in the scope covered both above and below ground assets, including valves, regulators, slam shuts, relief valves and pig traps. Assets excluded include pipelines, compressors and cast iron components.

The problem we are trying to solve

To ensure a cost-effective conversion from natural gas to hydrogen, existing transmission network assets must be repurposed in the first instance. Hydrogen can affect material properties, and therefore a thorough evaluation of existing network components is required. A variety of materials are utilised in transmission networks of various age, condition and function which presents a challenge when identifying what can be safely repurposed and what requires replacement. A robust engineering tool to develop an assessment criterion for network assets to be repurposed is required. The project aimed to produce a new scoring system for all assets and materials in the transmission system, which may be repurposed to carry 100% hydrogen. This will facilitate the identification of assets that may be incompatible with hydrogen, which could pose a risk in the energy system transition.

Our solution

A methodology and tool were previously developed to assess the material compatibility of gas distribution assets in 100% hydrogen. The existing tool has proved to be useful in identifying priority materials that require further testing or replacement. The aim of this project is to replicate this methodology for transmission assets, as the network operates at higher pressures and consequentially higher stress levels with different components compared to the distribution network.

The assessment tool will be incorporated into the LTS Futures blueprint for repurposing existing natural gas transmission assets to hydrogen.

Our partner on this activity

- HSE Science Division

Links to more information on this innovation project

portal.futureenergynetworks.org.uk/content/projects/NIA2_SGN0077

The assessment tool will be incorporated into the LTS Futures blueprint for repurposing existing natural gas transmission assets to hydrogen.

Key Project Showcase

Riser Data Intelligence

Innovation Registration Number: NIA2_SGN0109

Background

We have a statutory responsibility to manage MOB risk across our network, yet data on these assets is held inconsistently across disconnected systems. In addition, all iron pipes within 30m of buildings must be replaced by 2032, with connected MOBs requiring remediation at the same time. This project creates a single consolidated platform to map, classify and prioritise these assets, shifting SGN from reactive to proactive planning.

The problem we are trying to solve

SGN currently holds MOB data across several separate datasets, none of which are fully consistent or complete without each other. Early analysis has already identified buildings that qualify as MOBs but are missing entirely from existing records. Without a reliable, consolidated view, SGN cannot accurately determine which buildings contain risers, which fall within 30m of iron pipes, or how to sequence replacement work most effectively.

This data gap has direct financial consequences. The ability to target investment precisely based on actual asset risk, building characteristics and proximity to high-priority pipes is essential. Without it, SGN is forced into reactive, costlier interventions and cannot make informed assessments of where alternative energy solutions may be more appropriate than infrastructure replacement.

Our solution

Delivered in partnership with Deloitte, the project uses data cleansing, geo-spatial analysis and machine learning to build a cloud-hosted MOB platform in two phases. The first phase maps all MOB assets across SGN's network by combining internal pipe, riser and meter data with external sources including Ordnance Survey mapping, building height data and energy performance certificates. The second phase develops a risk and transition profiling model with interactive dashboards, initially validated across two priority areas before being scaled across the full network.

Our partner on this activity

- Deloitte LLP

Links to more information on this innovation project

portal.futureenergynetworks.org.uk/content/projects/NIA2_SGN0109

All iron pipes within 30m of buildings must be replaced by 2032, with connected MOBs requiring remediation at the same time.

Forecaster for Embedded Generation (FEmGE)

Innovation Registration Number: NIA2_SGN0081

Background

Gas networks play a fundamental role in supporting electricity system stability, with gas peaking plants providing rapid response balancing capacity to absorb the variability of an increasingly renewable electricity grid. The FEmGE project set out to determine the amount of embedded generation in the SGN and NGN networks with the aim to create a forecaster that could determine the amount of gas demand from these plants.

The problem we are trying to solve

FEmGE set out to address several issues: gas booking deficits, lower gas storage levels (unanticipated demand from embedded generators leads to lower gas storage levels) and pressure drops (due to sudden ramping up of generators).

FEmGE uncovered three main challenges:

1. Lack of granular historic or live data. In addition, the existing gas data does not have sufficient resolution – no plant of interest shares hourly resolution gas demand. And existing gas data is not sufficiently timely.
2. Inability to match electricity and gas identifiers of gas plants. Also, several plants can be aggregated together and there is no public record of which plants these units are composed of.
3. Unpredictability of the Balancing Mechanism (BM). A significant proportion of embedded gas generation gas demand is due to actions taken in the BM, which again is difficult to predict as it has a commercial aspect to it.

Our solution

A key output of this project has been a unique machine learning (ML) model and Spark, a web-based forecasting platform for gas demand using NESO (National Energy System Operator) data resolved by imbalance zone (note: a geographic area of the electricity system where supply and demand are balanced separately by the system operator).

Another key output is uncovering all the players and main issues with current data affecting the project's ability to create a fully functioning forecaster. Finally, setting the stage for the next phase.

Our partners on this activity

- LCP Delta
- NGN

Links to more information on this innovation project

portal.futureenergynetworks.org.uk/content/projects/NIA2_SGN0081

This project sets out to determine the amount of embedded generation in the SGN and NGN networks with the aim to create a forecaster that could determine the amount of gas demand from these plants.

Key Project Showcase

Theme 3: **Flexibility and market evolution**

A more flexible energy system is essential to supporting the growth of low-carbon technologies and managing changing patterns of supply and demand. The innovation strategy emphasises the need for market-based solutions that unlock flexibility and enable new ways of operating the network.

At SGN, we are exploring how innovation can support the development of more flexible and responsive networks. This includes understanding how different energy vectors can interact, as well as identifying opportunities to optimise network operation through smarter use of assets and demand.

By contributing to the development of new approaches and market frameworks, we are helping to ensure that the energy system can adapt to future challenges. Looking ahead, enabling flexibility will be critical to delivering a cost-effective and efficient transition to net zero.

Flexible Gas Transition Plant – Phase 1 Feasibility Study

Innovation Registration Number: NIA2_SGN0087

Background

The Flexible Gas Transition Plant (FGTP) feasibility study project looked at developing a gas transition and capacity management solution to enable the potential sequential conversion or decommissioning of sectors of the gas network. This concept will not only support any possible hydrogen transition and decommissioning sequencing but could also offer a solution to manage unpredictable outages in upstream gas production, such as biomethane plant interruptions, and maintenance events or emergency incidents.

The problem we are trying to solve

Some future end state scenarios assume converting entire grids in one go but this approach results in impractically large resource impacts, unrealistic hydrogen production/ supply rates, and an unacceptable time off gas for consumers. This challenge is also mirrored when considering decommissioning. Sectorisation isolation allows instead for a safe sector-by-sector approach, ensuring the gradual conversion of existing Natural Gas connections over to hydrogen, or managing the disconnection process should customers opt for alternative solutions as a means of decarbonising their energy supply. Without utilisation of an FGTP this would require costly network alterations and upgrades to create sectors within grids of about 2,500 connections, using valve installations and a dual supply of hydrogen and Natural Gas to each sector within the grid by laying new parallel pipelines and new pressure regulating installations (PRIs).

Our solution

The first phase of this project determined an outline design, identified use cases for the FGTP technology, undertook Cost-Benefit Analyses (CBAs) of different transition scenarios, and planned a way forward for further work. For the scenarios identified, deployment of an FGTP would result in a cost saving of more than 90% when compared to building a parallel pipeline network. Future phases will determine the exact design, build a prototype for testing, and then conduct an online live trial depending on the success of earlier phases.

Our partner on this activity

- ROSEN

Links to more information on this innovation project

portal.futureenergynetworks.org.uk/content/projects/NIA2_SGN0087

The FGTP offers a practical, cost-effective solution for navigating the full complexity of the gas network transition.

Key Project Showcase

BioFlex

Innovation Registration Number: NIA2_SGN0117

Background

Community ownership of electrical assets, particularly in renewable generation such as solar and wind, is a well-established and widely adopted model. In contrast, this approach has seen far more limited uptake in the biomethane sector, where higher capital costs, operational complexity, and less developed market mechanisms have constrained development. Through BioFlex we are exploring whether this constraint to community ownership of biomethane production facilities can be overcome.

The problem we are trying to solve

The UK has significant potential for biomethane production, particularly within rural and agricultural settings where smaller AD facilities could contribute to local energy supply. However, current market and network arrangements are optimised for large, centralised injection, creating structural barriers for smaller producers. High upfront and connection costs, difficulty accessing finance and the regulatory and administrative burden of developing AD facilities can all be barriers to market for smaller producers.

Access to green gas as a route to decarbonisation is an attractive option for rural communities as they often face constraints in adopting low-carbon heating solutions. Housing stock is generally older and less energy efficient which complicates retrofitting. Rural households also tend to have lower than average incomes which can make the capital costs of low-carbon technology prohibitive.

Our solution

BioFlex is exploring the feasibility of local biomethane markets, enabling small farm and community AD producers to sell green gas directly to nearby households and micro-businesses through the existing SGN network.

The project will generate a clearer understanding of the commercial viability, system integration challenges, and policy requirements for decentralised biomethane production. It will also identify scalable business models, highlight stakeholder needs, and provide a roadmap of practical next steps to support the development of resilient, community-based biomethane systems.

Our partner on this activity

- Centre for Energy Equality

Links to more information on this innovation project

portal.futureenergynetworks.org.uk/content/projects/NIA2_SGN0117

This project will generate a clearer understanding of the commercial viability, system integration challenges, and policy requirements for decentralised biomethane production.

Standardising Grid Entry Unit

Innovation Registration Number: NIA2_SGN0099

Background

The UK's biomethane sector faces challenges due to the diverse and non-standardised grid entry requirements across different Gas Distribution Networks (GDNs). This variability leads to increased costs, complexity, and lead times for biomethane projects, hindering the industry's growth and effectiveness. There are a limited number of players in the sector and lead times are increasing with the lack of standardisation contributing to this issue. This challenge facing the industry is only likely to increase as more biomethane injection facilities are constructed and with the possibility of hydrogen blending becoming a reality.

The problem we are trying to solve

The opportunity lies in the standardisation of grid entry units used for biomethane injection into the UK's gas grid. Currently, these units are developed and manufactured with varying requirements across different networks, leading to increased costs and complexity. Since the networks are essentially the same, this lack of standardisation is ineffective and creates logistical challenges, such as extended lead times.

Additionally, with the increasing potential for hydrogen blending into the gas grid, the need for similar (or identical) units for hydrogen injection further exacerbates the current issues. Standardising the specifications, including flow and pressure ranges, would allow manufacturers to streamline production, reduce costs, and meet demand more effectively.

Our solution

The outcome of this proposed research study led by SGN in partnership with Cadent will be a report with an additional summarised strategic PowerPoint presentation. The report will:

- Describe the current GEU process across associated GDNs highlighting areas of opportunity. It will also evaluate best practice across global market benchmarking opportunities for improvement.
- Research and evaluate emerging technology that could impact step change improvements in the biomethane injection process.
- Develop a unified, optimal standard design specification that improves safety, sustainability and effectiveness across the design, construction, operation and ongoing maintenance for grid entry units.
- Approve a unified standard design from the GDNs taking into consideration as-is process and best practice across global market that will decrease cost and lead time for green gas injection.

Our partners on this activity

- Bohr
- IGEM

Links to more information on this innovation project

portal.futureenergynetworks.org.uk/content/projects/NIA2_SGN0099

This project aims to standardise grid entry units for biomethane and future hydrogen connections, helping reduce costs, simplify installation, and improve effectiveness across the UK gas network.

Key Project Showcase

Theme 4: Optimised assets and practices

Optimising the performance of existing assets and operational practices is a key priority in delivering a safe, effective and sustainable energy network. The innovation strategy highlights the role of new technologies and approaches in improving how networks are managed and maintained.

Our innovation activity focuses on enhancing asset performance, improving operational effectiveness, safety and reducing environmental impact. This includes the use of advanced monitoring technologies, data-driven insights and new maintenance approaches to extend asset life and improve reliability.

By embedding innovation into day-to-day operations, we are ensuring that improvements are not only demonstrated but also delivered at scale. As we move into RIIO-GD3, this focus on optimisation will support more effective networks that deliver better outcomes for customers.

Hazardous Areas Impact Mitigations (HAIMs)

Innovation Registration Number:
NIA2_SGN0051/NIA2_SGN0102

Background

The IGEM/SR/25 hydrogen supplement revealed significant differences in the dispersion distances between natural gas and hydrogen, potentially extending hazardous areas beyond current site perimeters. Phase 1 of the project undertook workshop experiments but did not allow for the effect of wind on the releases and only explored ideal vent types. To enable a fair and wider comparison, the releases would need to incorporate wind and explore additional vent types.

The problem we are trying to solve

In the gas industry, venting of natural gas is controlled by the IGEM standard IGE/SR/23, with the classification of hazardous areas being detailed in IGEM/SR/25. When considering the differences in flammability limit and gas characteristics with respect to hydrogen, these operational practices needed reviewed and amended to be fit for purpose.

The results of small-scale tests carried out in Phase 1 were colourmaps generated by the recorded data providing a representative shape and magnitude of the gas plume. The results showed that in every case, the real-world results are significantly different to those stated in the tables in the IGEM/SR/25 hydrogen supplement for both the horizontal and vertical dispersion distances. These results have led to the development of the testing programme for Phase 2.

Our solution

This project investigated the impact of wind on releases by undertaking larger scale tests outside with variable wind speeds. Capped (non-ideal) vents and other fixtures and fittings were also incorporated into the test programme. In parallel, three industry-standard modelling packages were assessed to provide comparison with SR/25 data tables. The results showed that there were potential updates that could be made to the SR/25 hydrogen supplement to incorporate the findings from the HAIM work, remove some overly conservative assumptions and reduce the compounded effect of the rounding up of values.

Our partners on this activity

- Cadent
- DNV Services UK Limited
- IGEM
- National Gas Transmission (NGT)
- Northern Gas Networks (NGN)
- Steer Energy
- Wales and West Utilities (WWU)

Links to more information on this innovation project

smarter.energynetworks.org/projects/nia2_sgn0051

Key Project Showcase

BISEP® – Live trial with LTS Futures (Phase 2)

Innovation Registration Number: NIA2_SGN0052

Background

Flow stopping is a procedure widely used in the industry for both planned and emergency response. We took the opportunity to extend the deliverables of the LTS Futures live trial by including hot-tap and flow stopping operations. This was achieved using the BISEP® delivered by STATS Group. In 2023 a series of off site testing was completed to demonstrate safe delivery and technical assurance of the operation and deployment of the tool.

The problem we are trying to solve

To deploy current tooling into a hydrogen environment, it was outlined early that additional safety parameters would be required. The objective was to demonstrate the operation and deployment of a BISEP® flow stopping tool under live field trial conditions within these additional parameters, proving that the tool works to a satisfactory level; thus providing to the industry a high integrity line-stopping tool approved for use in 100% hydrogen.

The flow stopping process, after the fitting of the grouted tee, consists of four separate phases. The deployment of the following tools in order are:

- Hot tapping-drilling cutter
- Swarf Management Tool (SMT)
- BISEP®
- Completion plug (CP)

Our solution

The key success metrics were the safe deployment of the hot tapping equipment, the SMT, the BISEP® head and the CP in 100% hydrogen during the live trial, and the safety assurance of STATS adapted procedure in a hydrogen environment. To achieve this, STATS conducted two internal tests at Kintore using inert gas and a final FAT in Spadeadam using hydrogen, after which a go/no-go decision point was reached.

One of the key success metrics was the sealing of the CP, which is the final piece of kit fitted to the hot tap fitting, and which is left in situ after the works are completed.

Key technical challenges included the horizontal deployment of all equipment due to shallow depth of cover on the LTS pipeline, which led to the development of a new SMT by STATS.

The project concluded that flow stopping in hydrogen service using the BISEP® can be conducted safely, provided certain procedural and operational requirements are observed.

Our partners on this activity

- PIE – Pipeline Integrity Engineers
- STATS Group

Links to more information on this innovation project

smarter.energynetworks.org/projects/nia2_sgn0052

Maximising the use of a decommissioned network

Innovation Registration Number: NIA2_SGN0094

Background

As the UK transitions to low-carbon energy future, it is possible that a significant proportion of pipelines which currently carry natural gas will be utilised to transport hydrogen, biomethane, synthetic methane and carbon dioxide. It is also possible, however, that pipeline assets in some areas may become stranded.

To maximise the value and future-proof existing gas pipeline assets it is necessary to explore pathways for adapting decommissioned gas infrastructure to support alternative uses.

The problem we are trying to solve

Existing gas network assets have received significant investment. They are structurally sound and have decades of service life left. Making use of this longevity avoids the carbon footprint of decommissioning and reconstructing new networks and reduces waste. Repurposing also reduces the need for new land use with associated planning challenges. Utilising existing infrastructure allows for faster deployment, avoids the disruption associated with building new networks and is also cheaper than building from scratch.

Beyond repurposing pipes to transport hydrogen and carbon dioxide, there has, however, been little research into opportunities to make alternative use of the UK's gas pipeline assets that in some areas may otherwise become stranded during the energy transition.

Our solution

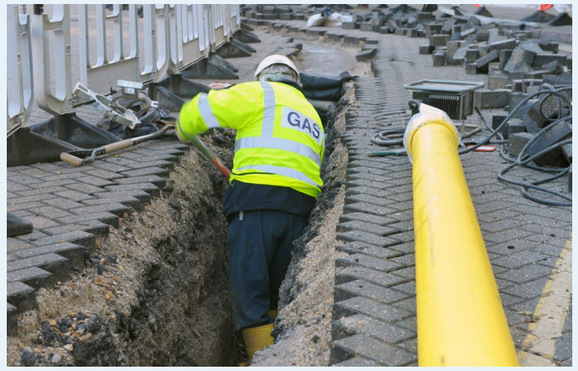
This project methodically explored how decommissioned gas infrastructure could be repurposed by cataloguing its components, brainstorming potential new uses, and short-listing technically feasible options. It quantified costs and benefits for each option and assessed the operational, regulatory, and sustainability implications, ultimately highlighting the most desirable pathways and how to overcome any barriers. The study demonstrated that there are attractive options for repurposing. It concluded that economic cases and deliverability rely on avoided civil works, easement variation, and the decommissioning treatment chosen.

Our partner on this activity

- Blunomy

Links to more information on this innovation project

portal.futureenergynetworks.org.uk/content/projects/NIA2_SGN0094



The study concluded that economic cases and deliverability rely on avoided civil works, easement variation, and the decommissioning treatment chosen.

Key Project Showcase

Theme 5: **Supporting consumers in vulnerable situations**

Ensuring that all customers are supported through the energy transition is a fundamental principle of the innovation strategy. Particular focus is placed on understanding and addressing the needs of consumers in vulnerable situations.

At SGN, we are committed to placing customers at the centre of our innovation activity. Our projects explore how new technologies, services and approaches can better support vulnerable customers, helping to ensure that no one is left behind as the energy system evolves.

Through collaboration with partners and stakeholders, we are developing solutions that improve accessibility, affordability and engagement. As we transition into RIIO-GD3, maintaining a strong focus on fairness and inclusivity will remain central to delivering meaningful outcomes for all customers.

Accessible CO alarm (Phase 2)

Innovation Registration Number: NIA2_SGN0083

Background

Carbon monoxide is a silent and potentially fatal gas that cannot be seen, smelled or tasted. Traditional carbon monoxide alarms rely on a loud sound to alert people to danger, but this approach is not always effective for vulnerable customers. This project is developing a more accessible alarm system that uses spoken voice alerts and smartphone notifications to ensure that warnings are clearer, easier to understand and reach more people.

The problem we are trying to solve

Carbon monoxide poisoning remains a serious safety risk in homes across the United Kingdom. While alarms are widely available, many existing devices are not designed with accessibility in mind. Vulnerable customers, including older people and those with visual, hearing or cognitive impairments, may struggle to recognise or interpret standard alarm sounds. This can lead to confusion, delayed responses or missed warnings during a critical safety event.

Research carried out during the first phase of the project highlighted a clear gap in the market for alarms that provide clearer and more understandable alerts. Participants explained that traditional alarms can be difficult to interpret, especially when the sound could also represent a fault or low battery warning. Without clear information, users may not know whether they need to evacuate or simply change the battery, increasing the risk of harm during a real incident.

Our solution

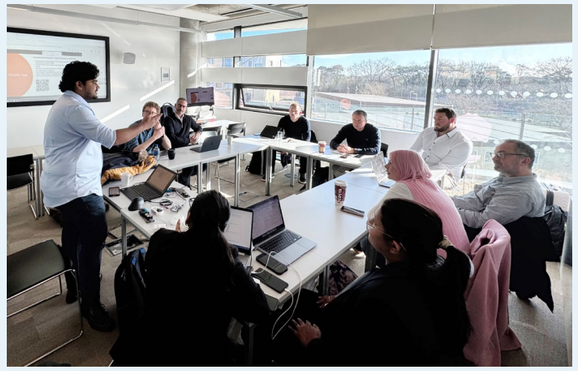
This project is developing an accessible carbon monoxide alarm that combines spoken voice alerts with smartphone notifications. The device clearly announces the type of alert, such as carbon monoxide detected, low battery or device fault, helping users understand the situation quickly. A connected mobile application allows alerts to be received on a smartphone and shared with trusted contacts if needed. By combining voice alerts, connected technology and accessible design, the system aims to make carbon monoxide safety clearer, more reliable and more inclusive for vulnerable households.

Our partners on this activity

- Bournemouth University
- FireBlitz Extinguisher Limited
- Policy Connect

Links to more information on this innovation project

smarter.energynetworks.org/projects/nia2_sgn0083



This project is developing a more accessible carbon monoxide alarm system, using voice alerts and smartphone notifications to improve safety and support vulnerable households during emergencies.

Key Project Showcase

Fairer Warmth Hub

Innovation Registration Number: NIA2_SGN0073

Background

The Fairer Warmth Hub (FWH) is a place-based, technology-agnostic initiative designed to support a just and inclusive transition to net zero. Building on SIF Discovery and Alpha phases, it brings together digital tools, community centres, and trained local Champions to support households, small businesses, and vulnerable consumers. It improves stakeholder coordination, reduces miscommunication, and helps communities engage confidently in local energy transition decisions. The NIA project will expand the tools to customers, including those in vulnerable situations, as well as small businesses, social healthcare providers and schools.

The problem we are trying to solve

The FWH project addresses key barriers to a just and inclusive energy transition by tackling structural, social, and process-related challenges. Consumer priorities for simplicity and affordability are often misaligned with policy and network objectives, making equitable delivery difficult. Vulnerable and digitally excluded groups often lack tailored support, limiting meaningful participation. Existing engagement and consultation processes are often manual, costly, and not well suited to local needs. Resources are fragmented, which makes it harder for communities and organisations to plan and deliver coherent transition pathways.

Our solution

The FWH project will create an enduring, inclusive model for the energy transition by refining its tools, testing them through demonstrators, and preparing for scale-up to deliver measurable financial, social, and environmental benefits. Delivered across six work packages over two phases, the project establishes strong governance and sustainable funding models, develops and tailors digital tools for key community settings, delivers place-based demonstrators for local stakeholders, and plans expansion to over 500 communities, with robust project management, coordination, and risk control throughout delivery.

Our partner on this activity

- Centre for Energy Equality

Links to more information on this innovation project

linkedin.com/posts/sgn_fairer-warmth-partner-forum-activity-7382034746391941120-3yRP

portal.futureenergynetworks.org.uk/content/projects/NIA2_SGN0073

Empowering local communities and vulnerable consumers to actively shape a fair, affordable, and inclusive transition to net zero.

LISTEN – Local Insights Supporting Transparent Energy Networks

Innovation Registration Number: NIA2_SGN0097

Background

The UK's transition to a low-carbon energy system faces growing resistance from local communities. Barriers to successful infrastructure projects are no longer purely technical or economic – they are increasingly social and place-based, requiring tailored engagement approaches that traditional methods cannot provide.

The problem we are trying to solve

The UK's energy transition is constrained by infrastructure, engagement, and planning challenges. Ageing networks limit decarbonisation capacity, and communities often perceive energy developments as imposed, leading to low participation in formal consultations. Late-stage objections risk delay and delivery failure. There is a growing need for proactive, data-driven tools to capture public sentiment early, enabling more inclusive decision-making across the transition.

Our solution

SGN's LISTEN project develops a scalable, data-led tool to build social consent for the energy transition.

Funded by the NIA and delivered by the Centre for Energy Equality and Cluso, it brings together four core elements:

- Multi-Source Data Capture: Synthesising local news, social media, planning documents, and community events for a holistic view of local feeling
- Voice-Enabled Surveys: Capturing authentic community sentiment with AI analysis assessing tone, confidence, and emotion
- Regional Dashboards: Visualising insights by geography, topic, and demographics to inform planning and engagement strategies
- Tailored Recommendations: Providing SGN with actionable insights aligned with Ofgem's fairness and consumer-centric priorities

These elements will give SGN richer, timely insights on current and future infrastructure plans, enabling faster response to community issues and improving future planning. LISTEN outputs integrate into SGN's ongoing workflows for more tailored, responsive engagement.

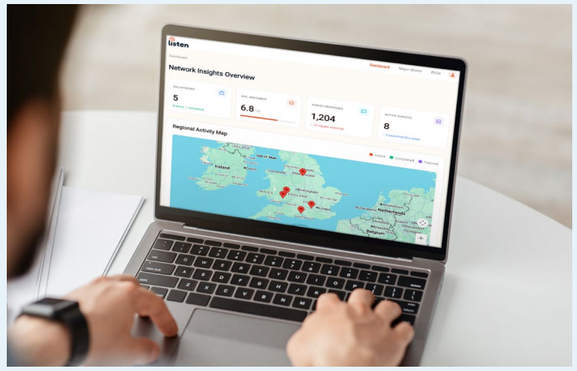
LISTEN will help energy networks plan and build with communities and not just for them.

Our partners on this activity

- Center for Energy Equality
- Cluso

Links to more information on this innovation project

portal.futureenergynetworks.org.uk/content/projects/NIA2_SGN0097



The LISTEN project develops a scalable, data-led tool to build social consent for the energy transition.

Key Project Showcase

Theme 6: Whole energy system

Delivering net zero requires a coordinated, whole energy system approach that considers the interactions between gas, electricity and other energy vectors. The innovation strategy emphasises the importance of joined-up thinking across sectors to deliver an effective and integrated energy system.

Our innovation programme supports this by working collaboratively across the energy sector to explore how different technologies and networks can operate together. This includes contributing to system-wide planning, sharing insights and ensuring that the role of gas is considered alongside other energy solutions.

By taking a whole-system perspective, we are helping to identify the most effective and efficient pathways to net zero. As we move into RIIO-GD3, this approach will be critical in ensuring that innovation delivers coordinated, scalable solutions across the energy system.

Sustainable Vehicle Transport

Innovation Registration Number: NIA2_SGN0095

Background

The Sustainable Vehicle Transport project is a feasibility study led by SGN and delivered by DNV to explore the use of green gas refuelling to decarbonise our fleet operations. It focuses on supplying biomethane via the existing gas network in the form of bio-CNG, with considerations for a future hydrogen option. This will support SGN's net zero ambitions and assess alternative long-term uses of the gas network.

The problem we are trying to solve

Transport remains one of the UK's highest emitting sectors contributing to around 26% of total carbon emissions with vans (LCVs), HGVs, and buses responsible for a significant share. While electrification is effective for passenger cars, it presents challenges for larger vehicles due to range constraints, payload impacts and onboard power requirements. This is particularly relevant for SGN's operational fleet, which relies heavily on LCVs for daily operations.

Additionally, the future role of the gas network is changing as domestic heat demand could decline. There is currently limited evidence on whether existing gas infrastructure can viably support low-carbon transport fuels at scale. Without this knowledge, SGN risks missing an opportunity to decarbonise its fleet, demonstrate a credible future role for gas networks beyond heat, and provide transferable learning to the wider GB energy system.

Our solution

The project is delivering a structured feasibility study assessing green gas refuelling from our network. It will develop optimal bio-CNG refuelling station designs, evaluate SGN fleet use cases, and compare costs and emissions across diesel, electric, bio-CNG, and hydrogen options. The study is also exploring the potential for future hydrogen refuelling linked to existing SGN trial sites and will produce a clear roadmap toward a live depot trial. This evidence will support informed investment decisions and help greater utilisation of low carbon gases in our network.

Our partner on this activity

- DNV

Links to more information on this innovation project

portal.futureenergynetworks.org.uk/content/projects/NIA2_SGN0095

Exploring the viability of the existing gas network to deliver green gas refuelling, providing a vital roadmap to decarbonise heavy commercial fleets.

Key Project Showcase

Decentralised System Resilience

Innovation Registration Number: NIA2_SGN0075

Background

Opportunities for gas networks to support resilience and balancing in decentralised electricity systems were explored in this research project.

Decentralised energy networks are becoming increasingly common across the globe as individuals, communities and organisations turn to decentralisation to reduce bills and increase energy security. Maintaining the balance between supply and demand in these systems is, however, likely to present substantial challenges, some of which may be addressed using gas.

The problem we are trying to solve

The UK's energy landscape is undergoing a transformative shift towards a decentralised system, driven by the need to meet net zero targets, enhance energy resilience, and reduce costs. This transition will see a significant increase in smaller-scale, locally situated energy assets such as private commercial networks, virtual power plants (VPPs), and microgrid communities. These systems will play a critical role in addressing the challenges of rising energy demand, grid reinforcement costs, and the integration of renewable energy sources. As decentralisation accelerates, it will reshape the roles of key stakeholders, including GDNs which have a unique opportunity to support this transition.

Our solution

Gas networks are well-positioned to provide critical resilience and balancing solutions within decentralised systems. Opportunities include supplying dispatchable power to address intermittency in renewable generation, supporting high-demand private networks with base load electricity, and providing backup power for critical infrastructure and microgrids. Additionally, GDNs can play a vital role in alleviating grid constraints and supporting distributed energy resources during periods of high demand. These contributions will not only enhance the stability of decentralised systems but also create new revenue streams for gas networks as the demand for natural gas evolves.

Our partner on this activity

- White Space Strategy

Links to more information on this innovation project

portal.futureenergynetworks.org.uk/content/projects/NIA2_SGN0075

Exploring how gas networks can provide critical backup power and balancing solutions to ensure stability as the UK transitions to local, decentralised energy systems.

Unlocking the role of nuclear in low-carbon hydrogen and heating

Innovation Registration Number: NIA2_SGN0091

Background

This project aims to explore and substantiate the case for nuclear to provide for the energy requirements of low-carbon hydrogen and heat networks within SGN's southern regions. These are regions where renewable energy potential is relatively low, and projected hydrogen demand will need to be met by imported hydrogen unless hydrogen production methods can be increased and diversified.

The problem we are trying to solve

Nuclear energy is seeing a resurgence in the UK, with strong cross-party agreement on the need for a fleet of new nuclear power stations. Reforms to enable this fleet to be built in new locations have recently been announced by the UK government, which enables regional nuclear deployment and hydrogen generation to be considered in new ways.

Several studies have established that nuclear energy is a valuable energy source to support hydrogen production. Previous work has also shown that heat networks energised by nuclear could dominate the heat network market and expand the use of heat networks beyond the current target level.

However, there is currently limited understanding of how Nuclear Enabled Hydrogen (NEH), district heating and existing gas infrastructure could be integrated. The most effective nuclear-hydrogen configurations also need to be determined, alongside an evaluation of where they could realistically be deployed.

Our solution

Sites suitable for NEH and nuclear district heating systems in SGN's southern regions will be defined during this project. The level of NEH and district heating energy which can be delivered by nuclear will be determined.

This project will deepen understanding of the role that NEH and nuclear energised heat networks could play in whole-system energy transition, complementing renewables, supporting the development of hydrogen economies and increasing energy diversity. The outcomes will help gas networks to understand opportunities for optimised infrastructure investment and strategic asset use.

Our partner on this activity

- Equilibrion Ltd

Links to more information on this innovation project

portal.futureenergynetworks.org.uk/content/projects/NIA2_SGN0091

Evaluating how nuclear energy can be integrated with existing gas infrastructure to support regional hydrogen production and low-carbon district heating networks.

Price Control Deliverables

The Gas Escape Reduction Project is moving ahead on schedule, supporting a full rollout of new equipment and methods across Scotland and southern England.

Overview

High Volume Gas Escapes (HVGEs), although uncommon, pose a significant risk to individuals and infrastructure in their vicinity. Third-party damage is a common cause, and situations must be rectified within a short timeframe quickly and safely. Disruption to customers during an escape is a serious concern, particularly for those reliant on gas for heating.

This initiative focuses on reducing gas emissions through advanced tools and techniques, while improving safety for field operatives managing gas escapes. Central to this work are two innovations: the Gas Stent and the High-Volume Gas Escape Toolbox (HVGET). Together, these offer safer, more effective alternatives that maintain gas supply to downstream customers during an emergency response.

Gas Stent

The Gas Stent is an innovative solution designed to remotely control high-volume gas escapes while maintaining flow to customers during repair activities. Building on earlier phases and successful field trials, the technology deploys an inflatable stent internally within the pipeline, positioned precisely at the point of escape using integrated camera systems. Once deployed, the stent reduces escaping gas, allowing safe external repair from outside the highest risk zone.

Key capabilities include:

- Applicability across metallic (4″–12″) and PE (90–355mm) networks
- Operation on LP and MP systems (up to 2 bar)
- Remote deployment up to 25–30m
- Significant reduction in excavation size, response time and environmental impact

HVGET

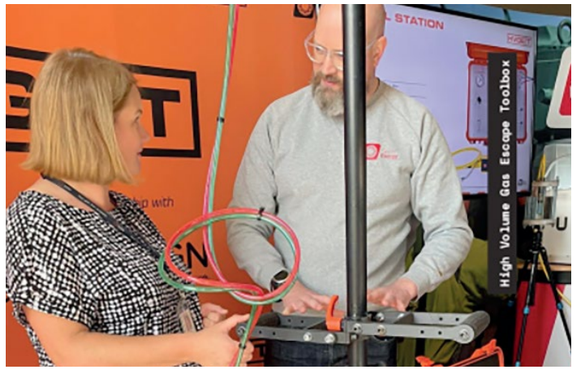
The HVGET was developed over several phases with input from across SGN. It provides a temporary solution while a permanent fix is put in place. The HVGET follows a permit to work process and requires working in the red zone, but allows for safe resolution of the escape when conditions allow. It comprises three tools: the Bung, Bosie and the Frog, along with a pneumatic control box.

- The Bung (3/4″, 1″ metallic and 20mm, 25mm, 30mm and 40mm PE) is designed to be inserted into a hole from a severed standpipe or main like an ‘engineered stick’
- The Bosie (4″, 5″, 6″ metallic and 90mm, 125mm and 180mm PE) is pneumatic and has a clamp-like jaw that deploys on the damaged area closing across the escape
- The Frog (4″, 5″, 6″ metallic and 90mm, 125mm and 180mm PE) is also pneumatic, will be inserted into the damage and then a cup will deploy over the damage, silencing the escape

All these are temporary repairs and will require supervision while in situ.

What’s next

The delivery of Price Control Deliverables is complete, with equipment produced and distributed to stores across our Scotland and Southern networks. The current focus is on supporting operational teams as the Gas Stent and HVGET move into business-as-usual use, addressing any queries that arise during this transition. Over the coming months, operational integration will continue, embedding both capabilities fully across the network.



Looking ahead

The work described across this summary reflects a year of genuine progress – projects completing, evidence accumulating, and innovation embedding into how SGN operates day to day.

Reflecting on RIIO-GD2

As we close the RIIO-GD2 price control period, innovation remains central to how SGN will respond to the opportunities and challenges of the energy transition. Over the last five years, our innovation portfolio has generated valuable evidence, developed new capabilities and strengthened partnerships across industry, academia, government and the wider energy sector.

Throughout this report, we have highlighted projects that are improving network safety, supporting customers, enabling low-carbon gases, harnessing digital technologies and exploring the future role of energy networks. While many of these projects have delivered significant outcomes in their own right, their greatest value lies in the evidence, learning and capability they provide for the future.

Looking to RIIO-GD3

As we enter RIIO-GD3, our focus will increasingly shift from exploration towards deployment and adoption. We will continue to build on the foundations established during RIIO-GD2, accelerating the implementation of proven solutions and ensuring innovation delivers tangible benefits for customers, communities and the wider energy system.

Working together

Collaboration will remain at the heart of our approach. The challenges facing the energy sector cannot be solved by a single organisation, and our continued work alongside fellow network operators, government, regulators, technology providers, academia and industry partners will be critical in delivering successful outcomes. The strong relationships developed through our innovation programme provide a platform for continued progress and shared learning across the sector.

The future energy system

The future energy system will require new technologies, new ways of working and greater coordination across gas, electricity and emerging energy vectors. Through our RIIO-GD3 Innovation Strategy, we will continue to target innovation where it can deliver the greatest value, focusing on reducing environmental impact, enabling whole-system solutions, supporting vulnerable customers, accelerating digitalisation and facilitating the growth of low-carbon gases.

Our commitment

While the challenges ahead remain significant, so do the opportunities. SGN remains committed to delivering innovation that supports a safe, resilient and sustainable energy future, ensuring our network continues to serve customers today while preparing for the needs of tomorrow.

Glossary of key terms

AD – Anaerobic Digestion
AI – Artificial Intelligence
API –American Petroleum Institute
BI – Biomethane Island
Bio-CNG – Biomethane Compressed Natural Gas
BIP – Blending Implementation Programme
BM – Balancing Mechanism
CBA – Cost-Benefit Analysis
CCUS – Carbon Capture, Utilisation and Storage
CFA – Comprehensive Formal Assessment
CFD – Computational Fluid Dynamics
CO– Carbon Monoxide
CP – Completion Plug
CV – Calorific Value
DESNZ – Department for Energy Security and Net Zero
DNO – Distribution Network Operator
ENA – Energy Networks Association
FAT – Factory Acceptance Test
FEED – Front End Engineering Design
FEmGE – Forecaster for Embedded Generation
FEN – Future Energy Networks
FENIP – Future Energy Networks Innovation Process
FGTP – Flexible Gas Transition Plant
FWH – Fairer Warmth Hub
FY – Financial Year
FYLD – Digital, mobile platform, using speech and image recognition
GB – Great Britain
GDN – Gas Distribution Network
GEU – Grid Entry Unit
GGA – Green Gas Access
GGSS – Green Gas Support Scheme
GIGG – Gas Innovation Governance Group
HAIM – Hazardous Areas Impact Mitigation
HEAT – Hydrogen Evidence and Transition
HGV – Heavy Goods Vehicle
HSE – Health and Safety Executive
HVGE – High Volume Gas Escape
HVGET – High Volume Gas Escape Toolkit
I&C – Industry and Commerce
IGEM – Institute of Gas Engineers and Managers
IGG – Intelligent Gas Grid
IoT – Internet of Things
IT – Information Technology
LCV – Large Commercial Vehicle
LISTEN – Local Insights Supporting Transparent Energy Networks
LNG – Liquefied Natural Gas
LoA – Letter of Assistance
LP – Low Pressure
LPG – Liquefied Petroleum Gas
LTS – Local Transmission System
MASiP – Mobile Automated Spiral intelligent Pipe
ML – Machine Learning
MOB – Multi-Occupancy Building
MOP – Maximum Operating Pressure
MP – Medium Pressure
NEH – Nuclear Enabled Hydrogen
NESO – National Energy System Operator
NGN – Northern Gas Network
NGT – National Gas Transmission
NIA – Network Innovation Allowance
NTS – National Transmission System
Ofgem – Office of Gas and Electricity Markets Ofgem is responsible for regulating the gas and electricity markets in the UK to ensure customer' interests are protected
PE – Polyethylene
PRI – Pressure Regulating Installation
PSI – Predictive Safety Intervention
RIIO-GD1 – The regulatory price control period that ran from 1 April 2013 to 31 March 2021; the first that used the RIIO framework for setting allowances
RIIO-GD2 – The regulatory price control period that ran from 1 April 2021 to 31 March 2026
RIIO-GD3 – The regulatory price control period that will run from 1 April 2026 to 31 March 2031
RTSM – Real-Time Settlement Methodology
SIF – Strategic Innovation Fund
SIUs – Scottish Independent Undertakings
SME – Small and Medium-sized Enterprise
SMT – Swarf Management Tool
STEM – Science, Technology, Engineering and Mathematics
TRLs – Technology Readiness Levels
UIOL – Use It or Lose It
UK – United Kingdom
UKRI – UK Research and Innovation
VPP – Virtual Power Plant
WWU – Wales & West Utilities

Designed and produced by Thunderbolt Projects

If you smell gas or are worried about gas safety you can call the **National Gas Emergency Number** on **0800 111 999**

Carbon monoxide (CO) can kill.
For more information visit **sgn.co.uk/help-and-advice**

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