

SGN Digital Strategy Action Plan



June 2023



Our digital vision

Our stakeholders

Our roadmap

Our digital commitments

Our digital and data roadmap

Our digital vision

At SGN our digital and technology goals are to ensure that our customers and our network are safer, greener and more efficient because of what we do.

We are both excited and passionate about driving the digital agenda and playing a part in tackling the climate emergency that we all face, whilst enabling operational efficiency and better customer value.

Our digital transformation framework provides the fundamental building blocks required to deliver large scale digital change as summarised to the right.



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Our stakeholders

We have a series of well-established feedback forums involving a broad cross-section of stakeholder groups which provide us with insights relating to our business plans and priorities for RIIO-GD2.



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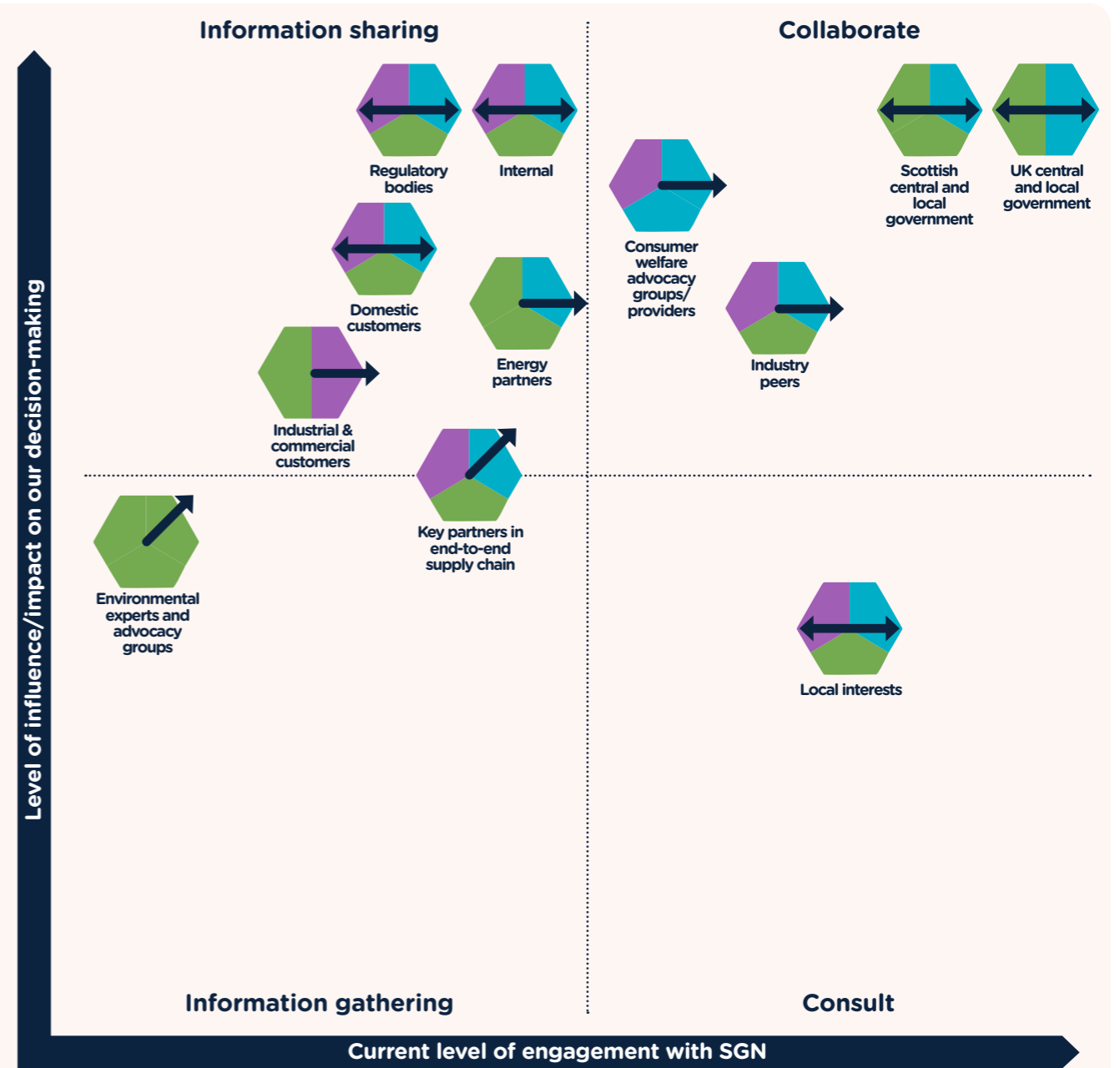
Our digital and data roadmap

Our stakeholders

The chart shows how we systematically map our stakeholders according to their influence and impact on our decision-making in relation to our business plan commitments.

We use our stakeholder mapping to assess the status of our engagement, to understand where we need to increase appropriate engagement and to identify and close any gaps.

Key



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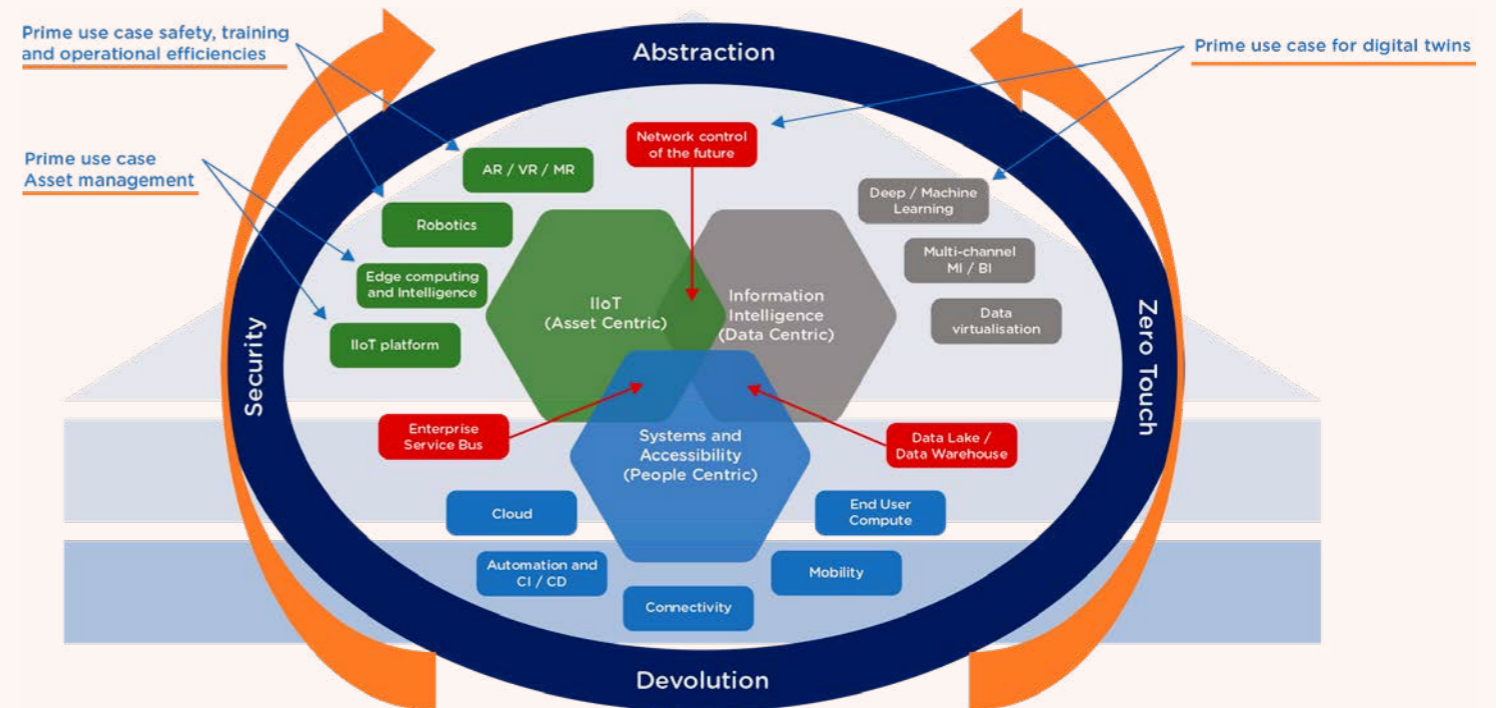
Our digital commitments

Our digital and data roadmap

Our roadmap

Our technology roadmap underpins our vision and strategy and includes capability development in connectivity, exploring and exploiting further industrial Internet of Things (IoT), robotics and artificial/augmented/virtual reality.

Our innovative and collaborative projects highlight the numerous opportunities and benefits associated with digitalisation within the energy networks sector.



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Our digital commitments

As part of our digitalisation strategy, we have made seven commitments as part of our delivery path:

02

We will deliver a digital strategy that provides a direct support to delivering a safe and efficient service, creating a positive impact on the society we serve and delivers a shared future. We will revisit our strategy every two years to ensure these principles are adhered to and continue to align with stakeholder priorities.



03

We will continue to explore and develop new operating models with other organisations, such as the GLA, and the data working group. In 2020/21, we will lead the workstream for the GDN data triage services.

01

We will continue to seek and gather stakeholder feedback on digitalisation requirements and progress the development of these ideas in partnership with our industry peers.



04

We will continue to improve our digital culture by developing digital talent, educating and training our staff in digital skills and ways of working. We will monitor this through our digital readiness and digital skill assessments.



05

We will continuously improve our cyber security capability. We will develop our digital security skills, train our people on cyber risk management and demonstrate this through compliance with our security accreditations and regular assessments.



06

We will continue to deliver new digital solutions and demonstrate active progress against Ofgem's nine principles for digitalisation.

07

We will develop, deliver and demonstrate digital innovation through our approved energy futures programme of work.



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Status descriptions

Pipeline

Initiative has not started and is awaiting appropriate resources and approvals to be scheduled to start.

In progress

Initiative is underway.

Delivery

Initiative has completed in line with its objectives and benefits will be enabled.

Our digital and data roadmap

At a glance

 A full project update can be found by clicking on each project title

Key



Customer vulnerability and experience



Data digitalisation capability development



Environment and net zero



Operational efficiency



Open data



Safety

	Project title	December 2022	June 2023
	ADaPT	In progress	In progress
	Automated Utility Service Mark-out System (AUSMOS)	In progress	In progress
	Biomethane Improved Access Rollout	In progress	In progress
	Centralised entry for green gas	Pipeline	Pipeline
	Connections application process	In progress	In progress
	Cyber security programme RIIO-GD2	In progress	In progress
	Data management programme	In progress	In progress
	DEFGRID	In progress	In progress
	Distribution network information modelling (DNIM)	In progress	In progress
	FYLD Innovation Partnership	In progress	In progress
	H100 Fife	In progress	In progress
	Leakage Management in the Energy System Transition	In progress	Delivery
	Local authority data sharing	In progress	In progress
	Local authority whole systems projects	Pipeline	Pipeline
	Modernisation Programme	-	Pipeline
	National energy system map - PoC	In progress	In progress
	Online planner	Pipeline	Pipeline
	Open Data API	In progress	In progress
	Phoenix IOT demonstrator	In progress	In progress
	Priority Services Register (PSR) Data integration and PSR Data Share	-	In progress
	Real-time networks Ph2	In progress	In progress

	Project title	December 2022	June 2023
	Remote pressure control and management	In progress	In progress
	Satellite infrastructure modelling (SIM)	In progress	In progress
	SIF - Gas System of the Future Digital Twin	In progress	In progress
	SIF - Digital Platform for Leakage Analysis. Discovery, Alpha and Beta	In progress	In progress
	SIF - Intelligent Gas Grid. Discovery, Alpha and Beta	In progress	In progress
	SIF - Predictive Safety Interventions	In progress	In progress
	SIF - Velocity Design with Hydrogen. Discovery, Alpha and Beta	In progress	In progress
	Stakeholder and Data User Engagement Programme	-	In progress
	Track my engineer	In progress	In progress
	Virtual surveyor (Vyn)	In progress	Delivery
	Wayleaves and easements	In progress	Delivery



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ADaPT

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Status



Project start date

April 2021

Anticipated project end date

March 2026

Key

-  Data digitalisation capability development

Overview

SGN has invested in establishing its analytics capability through recruitment and development of skilled and talented individuals. Last year we launched our new enterprise analytics data platform (ADaPT). This capability is being continuously developed throughout GD2.

December 2022 update

SGN has been developing dashboards to enable business colleagues to gain operational insights utilising the ADaPT platform.

Benefits

Building this capability is a fundamental enabler to wider digitalisation and unlocking the benefits to stakeholder and organisations external to SGN.

June 2023 update

We have been continuing work to ingest and transform a number of data sources into our Adapt data lake platform.

In addition, we have created visualisations and dashboards for stakeholders at all levels of the business to enable them to make decisions in a more effective manner.



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Automated Utility Service Mark-out System (AUSMOS)

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Status



Project start date

July 2021

Anticipated project end date

October 2023

Key

- Customer vulnerability and experience
- Environment and net zero
- Operational efficiency
- Safety

Overview

Following the development of RRES (Robotic Roadworks and Excavation System) and its below ground sensor package which uses AI and ML to interpret the data, the AUSMOS project represents an opportunity to transfer the learning from those technologies and package them into a semi-autonomous robotic unit. This unit would scan the area of interest, interpret the information and mark-out utility types and locations.

December 2022 update

With the AUSMOS prototype now developed and tested, the system aims to move from laboratory testing to more rigorous field trials. During the trials, the performance of the prototype will be reviewed with design improvements added.

Benefits

Benefits include reduction in impact to the public and highway users as well as a reduction in injuries and fatalities due to asset strikes. System looks to prevent damage to utility networks whilst reducing size of excavation and carbon footprint. With the near real-time data processing and visualization of the results we aim to reduce the repair and associated costs from asset strikes and ensure immediate and accurate recording of assets.

June 2023 update

Rigorous field trials have commenced. Eight field trials on various environments have been completed. The data gathered is being compared with actual measurements collected on site, and the algorithm is being adjusted as the system is learning.

Trials will continue over the next three months where the system will be assessed against British Standard PAS 128 to ensure the system is fit for purpose before commercialising the final design.



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Biomethane Improved Access Rollout

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Status



Project start date

April 2022

Anticipated project end date

March 2026

Key

 Environment and net zero

Overview

As part of the SGN Biomethane PCD SGN is undertaking a site-specific project to reduce the volumes of propane required to be blended with biomethane to meet Gas (Calculation of Thermal Energy) Regulations requirements for calorific value (CV). As part of this project SGN have liaised with Xoserve to develop a site-specific billing solution for three large consumers.

December 2022 update

To date a significant amount of work has been undertaken by SGN in conjunction with Xoserve to develop a billing solution. SGN have also been in detailed discussions with the biomethane production facility to develop the engineering solution to control and manage propane management at the site. SGN have also been in consultation with Ofgem and the three customers regarding the site-specific changes required to facilitate this project.

Benefits

Once implemented, the project will provide benefits by reducing volumes of propane required to enter biomethane into SGN's network at this site location. These benefits materialise decreased fossil fuel CO2 emissions associated with the gas burnt at customer's premises. The overall societal benefit will include increased volumes of gas in the total system derived from GB gas production and lower CO2 emissions from fossil fuel gas. The project will also enhance the financial viability of biomethane production by reducing costs associated with blending propane into the biomethane produced. The billing solution developed with Xoserve may also provide a basis for other GDNs with similar biomethane sites and network configurations to utilise this innovative billing solution.

June 2023 update

Six biomethane sites in Scotland and four in Southern have been identified for propane management solutions. A commercial tender for conceptual designs has been instigated, with returns expected May 2023.

Early engagement with technology providers has taken place to develop a tender scope document covering conceptual designs for smart control of biomethane in the network, including, control of network pressures and enhancing biomethane flow rates.



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Centralised entry for green gas

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Status





Project start date

**Q1
2023**

Anticipated project end date

**Q4
2023**

Key

-  Customer vulnerability and experience
-  Environment and net zero

Overview

Feasibility studies for all four mainland Scottish Independent Undertakings (SIUs) as test beds for blends of hydrogen up to 100%. Opportunity to monitor real network operation with real customers with collection of data aiding further hydrogen projects.

December 2022 update

Preparing and drafting of ITP for feasibility studies to take place at different locations with stakeholders within these locations being engaged. Feasibility to assess the potential conversion from natural gas to 100% hydrogen to decarbonise the networks.

Benefits

Looking at the most economical way to decarbonise the gas network currently serving the SIU towns.

June 2023 update

The feasibility study has been paused awaiting DESNZ policy decision on gas blending.



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Connections application process

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Status



Project start date

January 2021

Anticipated project end date

Q3 2023

Key

Customer vulnerability and experience

Overview

Taking on board feedback from our customers we are updating the online application process for Connections Customers.

December 2022 update

Since implementing online application forms for new connections and alterations, we have seen a 13% increase in the number of customers completing their application 'first time', along with receiving fewer non-standard quotations. This shows that we have helped simplify the process and reduced effort which is what our customers ask for. We have also measured the Ofgem returns for customers who applied using the website following the changes and have seen scores increase an average of 0.67 combined.

Benefits

We are user testing the improvements with real customers to gather meaningful feedback to improve the customer journey.

Customer and stakeholder feedback has indicated this is a priority consideration.

June 2023 update

We have continued to monitor customer applications since the website improvements in July 22 and can now see 90% of our online connections customers complete their application first time in comparison to 78% previously. We have also seen the satisfaction question around 'Ease of application' included in our customer survey has increase by 0.22, which clearly demonstrates the benefit in the development work implemented.

Further development work is underway, focused on the content and layout designs on our website to improve where, when and how we provide customer information. User testing has been carried out to make sure the development work is aligned to customer needs.



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Cyber security programme

RIIO-GD2

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Status



Project start date

April 2021

Anticipated project end date

March 2026

Key

 Environment and net zero

 Safety

Overview

As part of SGN's, and our industry's, ongoing commitment to appropriately manage risk to the energy network from cyber-attacks, our cyber programme will continue throughout RIIO-GD2 with the delivery of a number of projects.

December 2022 update

The Cyber Security programme continues to deliver projects in line with agreed priorities with Ofgem.

Benefits

Underpins SGN's vision statement of 'Keeping our customers safe and warm' by leading the way in energy delivery and managing the cyber security risks associated with operating critical national infrastructure.

June 2023 update

The Cyber Security programme continues to deliver projects in line with agreed priorities with Ofgem.



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Data management programme

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Status



Project start date

April 2022

Anticipated project end date

March 2026

Key

- Data digitalisation capability development
- Environment and net zero

Overview

SGN has invested in Talend data management platform to ensure we continue to be compliant with Data Best Practice Guidelines and can also support evolving requirements for our energy data through appropriate application of data governance and management process frameworks.

This programme will be ongoing throughout GD2 as we continue to mature our capabilities in this area (people, process, data & technology).

December 2022 update

SGN technically implemented the Talend data platform in June 2022 and is progressing with a number of initial use-cases to develop our data governance and management capabilities.

Benefits

With the increased requirements around energy data to enable net zero solutions and insights, it is imperative that SGN has robust data governance and management framework in place to ensure its data is utilised safely and appropriately, in appropriate state and its value understood in context of the outcomes it needs to deliver.

June 2023 update

SGN's Enterprise Data Management team are continuing to build foundational data governance and management capabilities, aligning them with Data Best Practice Guidelines.

Talend Data Management platform is enabling the management of our enterprise data as we continue to consume more data sources.

Investment also continues in our people and processes as we mature this capability.



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DEFGRID

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Status



Project start date

April 2022

Anticipated project end date

April 2025

Key

- Customer vulnerability and experience
- Data digitalisation capability development
- Operational efficiency

Overview

This project seeks to deliver an Industrial Internet of Things (IIoT) demonstrator in the utility industry, which sees the use of DSbD technologies to deliver ground-breaking security solutions within SGN. To address challenges from increasingly sophisticated cyber threats on distributed and connected CNI assets, this project will extend the compile target of the existing secure-by-design Phoenix software platform to the DSbD solution.

December 2022 update

Work has progressed to develop the demonstrator which will be applied to the UK CNI utility domain with one test installation followed by two field trials to showcase the DSbD 'capability enabled hardware' within the utility sector.

Benefits

Our solution will be considerably more cost effective than upgrade paths and would increase site resilience through fast, effective and secure (re)deployment and management of control at the edge. This would benefit utility customers through fewer interruptions and fewer customer minutes lost.

June 2023 update

Development work on the demonstrator is progressing.



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Distribution network information modelling (DNIM)

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Status



Project start date

April 2022

Anticipated project end date

April 2024

Key

- Customer vulnerability and experience
- Data digitalisation capability development
- Environment and net zero
- Operational efficiency

Overview

The DNIM project seeks to address this legacy asset records issue by creating technologies that enables automated, periodic and cost-effective internal mapping and feature analysis of the gas distribution network from all inlets to all outlets. The system will utilise an in-line tetherless robot which uses AI to accurately determine the location, makeup and features of gas distribution pipelines and associated buried assets. This creates a building information modelling (BIM) based digital twin that can be appended with live network associated data.

December 2022 update

With the completion of the feasibility study, the DNIM project has developed early-stage prototypes. These prototypes which have been designed to autonomously navigate themselves through the network, have been through laboratory testing to ensure the system is fit for purpose.

Software and hardware are beginning to be developed.

DNIM will not only benefit current operations, but will also prepare the network for green gas transportation in a cost effective manner for our gas customer.

Benefits

Benefits to our stakeholders include accurately identifying the location of existing buried assets to reduce numerous practical problems including overruns in cost and time, as well as introducing safety risks for employees and contractors and subsequently additional disruption to road users and members of the public, particularly in busy urban areas like London.

June 2023 update

With the completion of the feasibility study, the DNIM project is continuing to develop early-stage prototypes.

Work is continuing to design, build, shop test and field trial a novel autonomous robotic system.



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FYLD Innovation Partnership

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Status



Project start date

February 2022

Anticipated project end date

February 2025

Key

-  Data digitalisation capability development
-  Operational efficiency
-  Safety

Overview

SGN have agreed a three year innovation partnership with technology platform FYLD. This allows SGN to develop further features enabling data-driven decisions in real-time. This digital and mobile platform uses speech and image recognition as well as AI and ML technologies.

December 2022 update

A roadmap of opportunities has been developed. First use cases already in progress are Hand Arm Vibration Syndrome (HAVS) monitoring and daily vehicle inspections to allow real-time intervention by managers and safety professionals.

Benefits

This leads to enhanced safety management, productivity and quality assurance. FYLD was designed and developed by SGN in partnership with a digital venture company and is available on the open market for other customers.

June 2023 update

Hand Arm Vibration Syndrome (HAVS) feature released end of May 2023. Daily vehicle inspections to allow real-time intervention by managers and safety professionals to follow in July 2023. Enhancement of both features to continue throughout Summer 2023.



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H100 Fife

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Status



Project start date

April 2020

Anticipated project end date

March 2027

Key

 Environment and net zero

Overview

H100 Fife is a Network Innovation Competition (NIC) winner and will incorporate methods and technologies to manage, run and operate a hydrogen network in Fife – a world first. The project will explore, develop and demonstrate opportunities to utilise network data in ways that are not undertaken today.

[Here](#) is a link to the H100 Fife project website.

December 2022 update

Detailed design of H100 Fife site completed in June 2022. Procurement of main works contractor (MWC) is underway who will contract and commission H100 site.

Workshops for resilience and emergency services/third party utilities workshops underway.

Scope for delivery partner and appliance manufacturers being finalised.

H100 launch event for customer commitment completed.

Benefits

Switching carbon-emitting natural gas for hydrogen, which doesn't produce carbon when it burns, is one of the ways that we can keep homes and businesses warm and safe while making ground in the fight against the climate emergency.

June 2023 update

Hydrogen demonstration facility is currently under construction which will be complete in September 2023.

The hydrogen distribution network design has been finalised.

364 customers have registered for the project (as of 17/05/23), exceeding Ofgem's minimum participation requirement of 270 registrations. We are on track to have the first customer on hydrogen in September 2024.



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Leakage Management in the Energy System Transition

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Status



Project start date

July 2022

Anticipated project end date

March 2023

Key

 Environment and net zero

Overview

Project proposes to undertake a sensitivity analysis of the LRMM, review natural gas leakage rates of above ground installations (AGIs), review SGN's cathodic protection (CP) records, review the CISBOT programme and its impact and assess assumptions around asset records of cast iron and spun iron. Elements to be factored into a CBA to determine cost-effective next steps, maximising the reduction of leakage and emissions. Project proposes to assess application of LRMM to the energy transition system and future of hydrogen gas network.

December 2022 update

All work packages are progressing as expected, with outputs to be reported and disseminated at project closure in March 2023.

Benefits

This project has the potential to identify areas of improvement in the way leakage is estimated, reflecting improvements in the network. This project has the potential reduce methane leakage, providing financial and environmental benefits. This project will also consider how the leakage of hydrogen from future converted gas networks can be accurately monitored, allowing it to be reduced and minimised.

June 2023 update

Draft report under review. Final report outputs with project codes expected by June 2026.



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Local authority data sharing

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Status



Project start date

Ongoing

Anticipated project end date

Ongoing

Key

- Customer vulnerability and experience
- Environment and net zero
- Operational efficiency
- Open data
- Safety

Overview

SGN has long been sharing data on its assets, infrastructure planning and proposed works with local authority and government organisations within our operating footprint in order to support their planning processes and cross-infrastructure coordination efforts.

December 2022 update

We are continuing to share our data with Local Authorities in our footprint on a quarterly basis.

In Scotland, this is achieved through a central GIS sharing platform that is maintained by the Improvement Service for Scotland www.improvementservice.org.uk/

In Southern, SGN work with our Local Authorities on an individual basis.

Benefits

By sharing this information, SGN is aiding a number of areas: the improved coordination between utility companies to reduce customer impact from their work. Local authority development plans in understanding infrastructure availability and needs.

Helping to streamline the green energy planning process by engaging with local authorities and green developers, giving them sight of the existing gas infrastructure.

Customer and stakeholder feedback has indicated this is a priority consideration.

June 2023 update

We are continuing to share our GIS data with Local Authorities in our footprint on a quarterly basis.

As we continue on our pathway to open up energy data we have been actively engaging stakeholders across a wide range of sectors and have facilitated over 30 requests for data.



Local authority whole systems projects

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Status



Project start date

Regional studies have various start dates

Anticipated project end date

Regional studies will have various end dates

Key

 Environment and net zero

Overview

This feasibility study recognises the need for regional studies to provide opportunity in local government/ authority areas. Data collection on a local scale will be used to evaluate the options of transitioning from natural gas to hydrogen. Local demand data, building efficiency and other data sets will be needed.

December 2022 update

Regional studies including Isle of Wight, Capital Hydrogen & Edinburgh Study are ongoing to support this work. Regional studies include large range of stakeholder engagement.

Benefits

Feasibility study to evidence potential net zero pathway to support the heat policy decision in 2026. This provides the blueprint evidence case to provide a potential energy pathway for gas in the form of hydrogen.

June 2023 update

Isle of Wight, Capital Hydrogen, Edinburgh regional study now complete. Outstanding regional studies include Tayside and H2 Sussex due for conclusion and awaiting final reports.



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Modernisation Programme

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Status



Project start date

Dependent on project approval

Anticipated project end date

Dependent on project approval

Key

- Data digitalisation capability development
- Operational efficiency

Overview

Under the SGN-wide theme of 'Modernisation', we are holistically redefining our core business processes and the technology that enables them. This will lead to a fundamental review of our technology platforms, data structures, and the technologies that integrate them and enable our people.

June 2023 update

New initiative.

Benefits

This is an exciting opportunity to revisit the foundational elements of our IT estate, which will support the rebuilding of our current manual processes as modern, digital and automated processes



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National energy system map - PoC

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Status



Project start date

June 2021

Anticipated project end date

June 2023

Key

 Open data

Overview

This is a proof-of-concept initiative to develop a national, geographical representation of both electricity and gas networks. SGN is working proactively with our energy peers to identify a common set of structures for sharing information between local networks will be instrumental to creating an enduring whole systems approach during GD2. This work will be focussed on the operational planning level across GDN, DNO and others, to develop a clear understanding of how both gas and electricity networks develop and respond to operational plans (covering a 24-72-hour period) and will identify the data which would be usefully shared to improve system operation.

December 2022 update

Phase 1 completed which identified the potential and the need for data sharing. Phase 2 due to start 21st November with conclusion in June 2023. To review and define data sets required and take forward a potential test case.

[Here](#) is a link to the NESM project information.

Benefits

There are regional-based representations of this data. This is the first representation of a UK-wide map of the energy networks. This work will be focussed on the operational planning level across GDN, DNO and others, to develop a clear understanding of how both gas and electricity networks develop and respond to operational plans (covering a 24-72-hour period) and will identify the data which would be usefully shared to improve system operation.

June 2023 update

Phase 2 draft report has been submitted by PNDC for proof reading and approval.



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Online planner

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Status




Project start date

August 2022

Anticipated project end date

Dependent on project approval

Key

 Customer vulnerability and experience

Overview

This would investigate options to provide an online calendar for customers to schedule the date of their connections job.

December 2022 update

There has been a business case produced detailing the option to provide an end-to-end online service for our connections' customers. If approved, this would see customers access an online calendar and schedule a date for their works.

Benefits

Would provide customers the opportunity to interact with our core planning system at a time suitable to them in line with growing customer expectations.

June 2023 update

The business case produced which this initiative aligns to was paused and moved under our business modernisation programme. It will make up part of a wider business plan being produced in Autumn 2023.



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Open Data API

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Status



Project start date

October 2022

Anticipated project end date

Dependent on project approval

Key

-  Data digitalisation capability development
-  Environment and net zero

Overview

SGN is establishing foundational capabilities in publishing Open Data via API solution. This is the first iteration - a minimal viable proposition (MVP) and will start to develop the processes needed to technically develop the mechanisms needed to publish a data set via our website utilising API technology.

December 2022 update

This is a new initiative.

Benefits

This will establish the foundational capabilities to deliver against Data Best Practice Guidelines which point towards Open Data publication as a key enable for developing Net-Zero solutions.

June 2023 update

This initiative has been paused and will be included in broader digitalisation activities.



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Phoenix IOT demonstrator

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Status



Project start date

November 2021

Anticipated project end date

July 2023

Key

-  Data digitalisation capability development
-  Operational efficiency
-  Safety

Overview

This project looks to address these risks by demonstrating an IOT (Internet of Things) solution that allows SGN access to their real-time asset data in a cost-effective manner, whilst building the correct level of security and resilience into CNI (Critical National Infrastructure). This data would comprise of SGN process, infrastructure, and security data and will be provided with the correct level of security and resilience, befitting UK CNI networks. This would create a pathway to delivering the grand ambition of “a self-monitored intelligent network connecting in from anywhere in the world” and enabling the use cases through the use of data analytics, interactive data visualisation, machine learning and other smart technologies.

December 2022 update

Work is continuing to develop a proof of concept which will be trialled on two SGN Above Ground Installation (AGI) sites. Results will determine if the system is appropriate to be fully operationalised and developed for up-scaling and rolled out across the SGN network estate.

Benefits

This platform will deliver a safe, robust and cyber-resilient solution and will demonstrate the following operational capabilities;

- Inherently secure real-time sensor to cloud connectivity for remote operation and bidirectional data exchange.
- Inherently secure connected process automation and control with remote update and management.
- Through the enablement of secure-by-design operational capabilities, reduction in manual intervention and improvement in process optimisation delivering energy efficiency.

June 2023 update

After the successful development of the Phoenix IoT proof of concept, field trials have now commenced. The results of the trials are being gathered and evaluated.

Results will determine if the system is appropriate to be fully operationalised and developed for up-scaling and rolled out across the SGN network estate.



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Priority Services Register (PSR) Data integration and PSR Data Share

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Status



Project start date

**Q1
2023**

Anticipated project end date

**Q4
2024**

Key

- Customer vulnerability and experience

Overview

A part of RIIO-2 licence condition, all GDNs are required to treat customers fairly, have the skills to identify and support vulnerable customers and deliver specific services to customers on the gas suppliers' Priority Services Register. As a GDN we're also assessed on the CSAT we provide PSR customers as part of our reputational ODI. Over recent years there has been a shift away from individual PSR lists across the utility sectors and a move towards open data share. This move has been supported by Ofgem and Ofwat. At the moment to support registration we have data sharing agreements with the regional DNOs to ensure that during incidents we can support PSR customers not currently on the gas suppliers PSR list to fill gaps in data. SGN are on the working groups to improve the data quality and address issues in data sharing.

June 2023 update

New initiative.

Benefits

PSR Customer Satisfaction, as our operational and customer teams have access to up-to-date customer information during all workstream activity and will be able to prioritise the allocation of support for our Vulnerable Customers.

Data security - as the PSR data will be on SGN's systems and will not be emailed or exchanged between organisations.



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Real-time networks Ph2

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Status



Project start date

April 2021

Anticipated project end date

Dependent on project approval

Key

-  Data digitalisation capability development
-  Environment and net zero

Overview

This project is looking at making our distribution network 'smart' by applying weather, gas flow, gas quality and demand sensors across the Medway region of our distribution network.

December 2022 update

The project is in its design phase as we are looking at this as a cross-GDN-venture and the design needs to reflect this.

We are aiming to take the final design and proposal for financial approval early 2023.

Benefits

Evidence potential net zero pathway to support heat policy decision in 2026. Our stakeholders have prioritised the energy system transition to net zero and whole energy systems.

June 2023 update

The project is being reviewed in line with current organisational priorities.



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Remote pressure control and management

[Click here to return to overview.](#)

Status



Project start date

April 2023

Anticipated project end date

March 2024

Key

 Environment and net zero

Overview

Delivering the ability to remotely adjust gas pressures via connected pressure management devices.

December 2022 update

Tender for equipment provision has been completed. SGN staff have begun equipment installation training for this innovative equipment. Planning to install all pressure management equipment at the 265 sites in FY 2023/24.

Benefits

Optimising gas network pressures to be as required by demand at any given time of the day and across the calendar year.

Financial benefit to customers by reducing SGN's Shrinkage costs.

Security of Supply benefit to customers as the system reacts to periods of high demand by increasing system pressures.

Societal benefit to society by reducing system pressures at periods of low demand and thereby reducing overall system Shrinkage.

June 2023 update

Training has been completed for the majority of SGN operatives and it is expected that a significant number of sites will be commissioned within the 2023/24 financial year.

SGN has taken delivery of 50 systems, with the equipment successfully installed and commissioned on six sites in our Southern network. A further 85 systems will be delivered by the end of July 2023.



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Satellite infrastructure modelling (SIM)

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Status





Project start date

April 2022

Anticipated project end date

April 2024

Key

-  Environment and net zero
-  Operational efficiency

Overview

For safety reasons, SGN undertakes multiple and frequent surveys of its pipeline assets by employing helicopters to cover the length and breadth of our network. This initiative is utilising existing satellite networks to take high-resolution images of our pipeline assets which can then be analysed.

December 2022 update

The feasibility study has been completed which assessed the viability of the SIM's scope, including the financial aspect. It was proven that the scope is feasible therefore the project has progressed to the testing phase. Over the next 6 months, specific sites will be selected for satellite imagery testing to determine how successful the system would be in practical terms.

Benefits

This approach will enable operational efficiencies through the more efficient and effective utilisation of satellite surveys. The digitalisation of the outputs from these types of surveys will enable more innovative use of the data collected.

June 2023 update

Trials have commenced where the technology is demonstrating consistent performance in monitoring our pipeline corridors. The utilization of Synthetic Aperture Radar (SAR) and multispectral (optical) satellites is proving to be a game-changer with the capture of high-quality data regardless of the time of day or weather conditions.

As the trials continue, we are eager to continue monitoring the performance of the satellite technology, with the hope of identifying further efficiencies and improvements to our pipeline monitoring process.



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SIF - Gas System of the Future Digital Twin

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Status



Project start date

March 2022

Anticipated project end date

Dependent on project approval

Key

-  Data digitalisation capability development
-  Environment and net zero

Overview

This is a collaborative SIF project that SGN is leading on. The alpha phase will strive to ensure a working green hydrogen digital twin, combined with analytical tools and machine learning, will provide a platform that changes the traditional way of how we look at the analysis of asset condition and performance.

[Here](#) is a link about the Strategic Innovation Fund (SIF).

December 2022 update

The project has successfully completed the Alpha phase with development of a proof-of-concept digital twin to connect models and outputs to enable whole system modelling without disrupting the real world.

Preparations are in progress to put forward proposals for SIF Beta phase approval.

Benefits

It will enable a new generation of advanced predictive analytics and provide a virtual environment where process control and operational solutions are designed and tested before being applied to the live plant, reducing risk when upscaling electrolysis plant design for example.

June 2023 update

Application for SIF Beta Phase approval is in progress; outcome from decision by UKRI will determine next steps.



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SIF - Digital Platform for Leakage Analysis. Discovery, Alpha and Beta

[Click here to return to overview.](#)

Status



Project start date

March 2022

Anticipated project end date

Dependent on project approval

Key

 Environment and net zero

Overview

This project aims to develop a new digital platform to provide more accurate, dynamic gas leakage information.

[Here](#) is a link about the Strategic Innovation Fund (SIF).

December 2022 update

After the successful completion of the discovery phase, this project has progressed to alpha where a proof of concept is being developed.

Benefits

This will enable more efficient investment decisions to reduce leakage and customer bills.

June 2023 update

Alpha stage has been successfully completed. Proposal for SIF Beta has been submitted and recently conducted interviews with assessment panel. Currently awaiting approval from Ofgem.



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SIF - Intelligent Gas Grid. Discovery, Alpha and Beta

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Status



Project start date

March 2022

Anticipated project end date

Dependent on project approval

Key

 Environment and net zero

Overview

This is a collaborative SIF project that SGN is leading on. Using Utonomy's remote control pressure system as the enabling technology, the project idea is to collect and use network data alongside external data such as weather to develop machine-learning and AI applications that optimise network pressures and provide insights on network performance. The applications developed under this project will reduce methane leakage and increase the feed-in capacity of renewable gases including biomethane and hydrogen.

[Here](#) is a link about the Strategic Innovation Fund (SIF).

December 2022 update

With the completion of the discovery stage which designed the conceptual AI solution for each opportunity area, the project has progressed to the alpha phase.

Work has commenced to develop the AI solutions. Testing will be carried out throughout this stage where iterative design improvements will be made.

Once the proof of concept has been completed the plan will be to progress to larger-scale demonstrations during the Beta Phase.

Benefits

The project is aiming to use energy data and AI to reduce methane leakage and increase the feed-in capacity for renewable gases. Once developed the project will lower costs to customers, enhancing network management activities and help to decarbonise the energy supply.

June 2023 update

Alpha stage has been successfully completed. Proposal for SIF Beta has been submitted and recently conducted interviews with assessment panel. Currently awaiting approval from Ofgem.



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SIF - Predictive Safety Interventions

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Status



Project start date

March 2022

Anticipated project end date

Dependent on project approval

Key

-  Environment and net zero
-  Safety

Overview

FYLD will build a machine-learning model to assess how effectively site controls have been deployed and determine which strategies lead to the safest outcomes.

[Here is a link about the Strategic Innovation Fund \(SIF\).](#)

December 2022 update

With completion of the discovery phase, the project has kicked off the alpha phase. The project will build a machine-learning model to assess how effectively site controls have been deployed and determine which strategies lead to the safest outcomes. This model will be used to power an augmented reality proof-of-concept that will demonstrate how interventions can be made in real time - with significant benefits to workers and members of the public.

Benefits

This model will be used to power an augmented reality proof-of-concept that will demonstrate how interventions can be made in real time - with significant benefits to workers and members of the public.

June 2023 update

Project has developed an artificial intelligence model which aims to enable Predictive Safety Interventions. The predictive model has been trained on safety indicator event data, and previous near-miss and injury occurrences, to accurately forecast the likelihood of an injury occurring to a fieldworker. Testing has produced positive results with the next phase to develop this model further, increasing data inputs into the model to include human behaviour factors.



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SIF - Velocity Design with Hydrogen. Discovery, Alpha and Beta

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Status



Project start date

March 2022

Anticipated project end date

Dependent on project approval

Key

 Environment and net zero

Overview

This is a collaborative SIF project that SGN is leading on. The gas velocity constraint(s) for hydrogen, applied at the design stage, need to be identified. The constraint(s) determined will impact directly onto the levels of capital investment required in the transition of the system to accommodate blended and 100% hydrogen.

[Here](#) is a link about the Strategic Innovation Fund (SIF).

December 2022 update

After completion of the discovery stage which confirmed the feasibility of the concept, the alpha stage commenced. The alpha stage has kicked off which aims to extend the data gathering with the other networks and input from IGEN. Assessment will then be made to quantify the impact on potential reinforcement, as well as planning for the larger bench-testing under Beta.

Benefits

To demonstrate how the current gas networks can intelligently and efficiently transition to provide low carbon heating.

June 2023 update

Alpha stage has been successfully completed. Proposal for SIF Beta has been submitted and recently conducted interviews with assessment panel. Currently awaiting approval from Ofgem.

If approved, the project aims to conduct large scale physical testing to assess the velocity model developed in earlier alpha phase. At the end of Beta, it is planned for IGEN to publish updated standards in relation to allowable velocity limits which will inform the heat policy decision-makers and support energy transition to hydrogen.



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Stakeholder and Data User Engagement Programme

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Status



Project start date

**Q1
2023**

Anticipated project end date

**Q1
2024**

Key

-  Customer vulnerability and experience
-  Data digitalisation capability development

Overview

SGN delivers an annual stakeholder engagement plan to ensure its products and services meet our stakeholder needs and we're designing for their future needs.

This includes our data and digitalisation products and services.

June 2023 update

New initiative.

Benefits

Products and services are aligned and continue to be improved/designed for our Stakeholder needs.



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Track my engineer

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Status



Project start date

April 2022

Anticipated project end date

Q3 2023

Key

-  Customer vulnerability and experience
-  Data digitalisation capability development

Overview

Allows customers to track the progress of an engineer visit to complete certain planned work types.

December 2022 update

Through the initial trial period we have had a 60% reduction in customer enquiries for the regions involved along with increased customer satisfaction scores overall, and specifically for the communication question. We also asked customers for their feedback on the text content and they rated this on average 4.46 out of 5. Based on all this feedback we have now extended the pilot and included all regions across both networks and will measure this throughout the winter period.

Benefits

This avoids the customer having to contact SGN to gain a status update on when the engineer is likely to arrive to complete work. It is a convenient solution for customers and allows them to better plan their day around a SGN appointment.

Customer and stakeholder feedback has indicated this is a priority consideration.

June 2023 update

We were able to extend this trial out to include all regions over both networks by Dec 2022. This coincided with one of the busiest operational winters we have experienced, and this initiative helped keep customers informed that we had their job booked on the system and provided regular updates until an engineer was able to attend.

We have one final step agreed to extend this messaging service to all emergency jobs. Due to strategic priorities, this final element has been paused until Autumn 2023.



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Virtual surveyor (Vyn)

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Status



Project start date

April 2022

Anticipated project end date

April 2023

Key

- Customer vulnerability and experience

Overview

A pilot of a new platform to allow customer to self-survey for connections work.

December 2022 update

This pilot is going well. We now have five regions involved across both networks. We have sent 109 survey links to customers and have received 53 back (49%). Of the 53 returned we have been able to save 18 site visits, turning around customer quotes within 24hrs. We are working with the surveyors on how to improve the customers' video capture and what we can obtain via a phone call to reduce further site visits and speed up the front-end process for our customers. We continue to monitor all aspects of this pilot and once all minor issues improve, we will then look to expand and include more regions.

Benefits

Benefits include reduced timescale to provide a customer quotation and improved accuracy of quotation. Face-to-face survey will still be available as required by some customers.

Customer and stakeholder feedback has indicated this is a priority consideration.

June 2023 update

Vyn is now available for all connections customers who apply for a non-standard alteration or who require a post acceptance survey. 48% of the jobs where Vyn is used are 'visits saved' meaning we have enough information to allow the job to progress without having to send a surveyor to site. Where Vyn is used, we have an average customer satisfaction score of 9.61

We are now expanding this facility into customer enquiries via our [website](#).



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Wayleaves and easements

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Status





Project start date

February 2022

Anticipated project end date

March 2023

Key

-  Environment and net zero
-  Operational efficiency

Overview

Elements of our pipeline network lay across private landowners' land and there are legal agreements in place - wayleaves and easements - which detail the conditions to access land for installation or maintenance of the asset. A number of these agreements are paper-based documents, and SGN is undertaking an exercise to digitalise these to make access to the information contained easier to catalogue, access and analyse.

December 2022 update

1025 Servitude and Easement documents have been assessed (Scotland & Southern) to ascertain what restrictions may be encountered when transitioning the network to transport other gasses - particularly H2. Overwhelmingly, the results of the study have been positive.

A further, more detailed, study is underway for the HP & IP networks in the Fife region, this will further our understanding ahead of the 'Town Pilot' bids and will explore the practicalities and cost of adding the S&E detail as a visual layer in our asset maps.

Benefits

By digitalising this information, SGN will be able to analyse the data in connection with its plans to decarbonise its network.

June 2023 update

Project completed and due to be closed. SGN to carry out an internal review with legal teams to establish next steps following outputs of the project.





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