# NGN Digitalisation Action Plan

June 2024

# Welcome to our Digitalisation Action Plan

**This is the June 2024 edition of our Action Plan...**

The consistent theme that has run through our Digitalisation Strategy is Integrated Information Management, a philosophy centred on data, designed to maximise the value, governance and control of our data assets through a simplified enterprise architecture that balances people, process and technology.

As we look to exciting times in our next RIIO period (2026-31), the foundations that we have built: implementing S/4HANA; mastering our data in a single, consistent schema; building our own mobile applications for work management and field data capture; and embedding an in-house digital capability, means that we are uniquely placed to deliver new digital products and services throughout the remainder of RIIO-GD2 and beyond.

In this Digitalisation Action Plan, we will demonstrate our ability to deliver digital projects at scale that strengthen our compliance with Data Best Practice, enhance the experience of data users, and provide real value to end consumers and stakeholders.
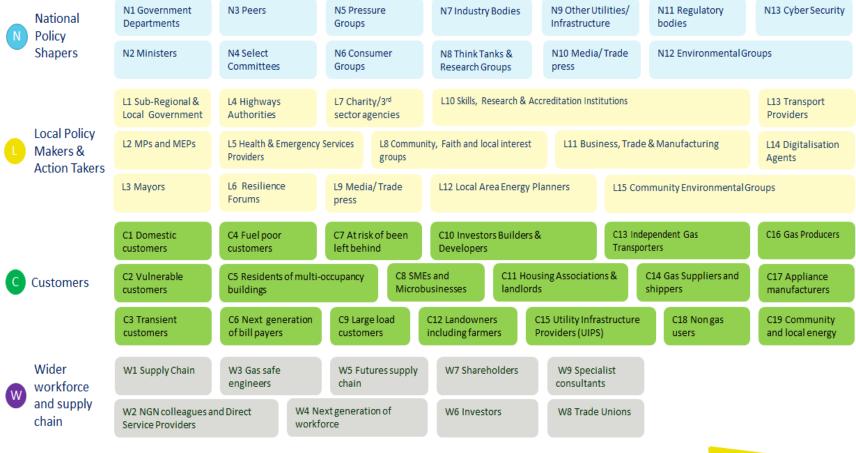
# How we are Engaging with Stakeholders

## Stakeholders are the driving force behind our Digitalisation work…

We passionately believe that digitalisation will improve not only the service that we provide to our stakeholders, but also our relationship with them, the way that we interact, the way that we share data and information, the way that we work together to achieve common goals.

We'll continue to work closely with Stakeholders – Internal and External – to ensure that our Digitalisation Transformation delivers for everyone.

### N — National Policy Shapers

| | | | | | | |
|---|---|---|---|---|---|---|
| N1 Government Departments | N3 Peers | N5 Pressure Groups | N7 Industry Bodies | N9 Other Utilities/ Infrastructure | N11 Regulatory bodies | N13 Cyber Security |
| N2 Ministers | N4 Select Committees | N6 Consumer Groups | N8 Think Tanks & Research Groups | N10 Media/Trade press | N12 Environmental Groups | |

### L — Local Policy Makers & Action Takers

| | | | | |
|---|---|---|---|---|
| L1 Sub-Regional & Local Government | L4 Highways Authorities | L7 Charity/3rd sector agencies | L10 Skills, Research & Accreditation Institutions | L13 Transport Providers |
| L2 MPs and MEPs | L5 Health & Emergency Services Providers | L8 Community, Faith and local interest groups | L11 Business, Trade & Manufacturing | L14 Digitalisation Agents |
| L3 Mayors | L6 Resilience Forums | L9 Media/Trade press | L12 Local Area Energy Planners | L15 Community Environmental Groups |

### C — Customers

| | | | | | |
|---|---|---|---|---|---|
| C1 Domestic customers | C4 Fuel poor customers | C7 At risk of been left behind | C10 Investors Builders & Developers | C13 Independent Gas Transporters | C16 Gas Producers |
| C2 Vulnerable customers | C5 Residents of multi-occupancy buildings | C8 SMEs and Microbusinesses | C11 Housing Associations & landlords | C14 Gas Suppliers and shippers | C17 Appliance manufacturers |
| C3 Transient customers | C6 Next generation of bill payers | C9 Large load customers | C12 Landowners including farmers | C15 Utility Infrastructure Providers (UIPS) | C18 Non gas users / C19 Community and local energy |

### W — Wider workforce and supply chain

| | | | | |
|---|---|---|---|---|
| W1 Supply Chain | W3 Gas safe engineers | W5 Futures supply chain | W7 Shareholders | W9 Specialist consultants |
| W2 NGN colleagues and Direct Service Providers | W4 Next generation of workforce | W6 Investors | W8 Trade Unions | |

# Process Optimisation Programme

**Northern Gas Networks**

## Optimising our processes through automation

### Stakeholders

- NGN Colleagues
- Local Authorities

### Tags

- Efficiency
- Data Quality

### What is it?

This year we ran the Automate+ programme, which focussed on implementing Robotic Process Automation to replace manual, repetitive tasks. However, what we learnt quickly was that RPA is just the tip of the iceberg when it comes to the exciting possibilities the technology we have at our fingertips can bring.

Building on the solid digital foundations we have put in place with S/4HANA and other complementary technologies, we will optimise solutions across all our back office processes, whilst also introducing innovative, bot-based solutions to solve problems around quality assurance, material logistics,

### Why are we doing it?

Optimising processes will free up time, allowing our colleagues to concentrate on value-adding activities. It will also mitigate the risk of human error as our data is processed, increasing data quality and enhancing the value of our data.

"Giving our colleagues the time and space to do amazing things…"

"Working to ensure our data is right first time, every time…"

### Project Milestones:

**Phase One**: Requirements gathering and introducing programme governance & controls. **(Nov '23 – Jun '24)**

| To Start | In Progress | Complete |

**Phase Two**: Delivery of solutions. **(Feb '24 – Dec '24)**

| To Start | In Progress | Complete |

**Phase Three**: Embed as a 'Business As Usual' capability. **(Jan '25 – Aug '25)**

| To Start | In Progress | Complete |

### What's happening in the next 6 months:
We will continue producing new and innovative process improvement solutions.

we are the network

# Information Lifecycle Management

## Looking after our data

### Stakeholders

- Data Users
- NGN Colleagues

### Tags

- Open Data
- Data Quality
- Data Best Practice
- Efficiency

"Making sure the right data is available in the right way…"

### What is it?

**SAP Information Lifecycle Management**
We will implement SAP Lifecycle Management (ILM) across our SAP estate, providing us with the ability to manage complex data assets at scale.

**Automated Data Retention & Archiving**
ILM automatically archives data assets based on retention policies that are built in to the solution. Workflow ensures that data owners are kept informed on the status of all the data assets they own.

**Optimised Real-time data access**
By maintaining robust archiving we ensure that the right data is available at the right level of accessibility, be that real-time access or batch upload. ILM provides us with the facility to access archived data assets should they be required.

**Enhancing our GDPR services**
ILM provides the ability to tag and search personal data assets to assist with Data Subject Access Request and other Individual Rights.

### Why are we doing it?

Automated data retention and access management not only increases the efficiency and effectiveness of the internal processes that run on the data, they also support compliance with Data Best Practice guidelines and help to ensure an optimised open data experience for Data Users.

"Helping us to manage all our data assets in a consistent and governed way…"

### Project Milestones:

**Phase One**: Preparation, analysis, stakeholder engagement and strategic planning. **(May '23 – Sept '23)**

- To Start
- In Progress
- **Complete**

**Phase Two**: Configuration of SAP Information Lifecycle Management. **(Oct '23 – Feb '24)**

- To Start
- In Progress
- **Complete**

**Phase Three**: Monitoring & Improvement. **(Mar '24 – May '24)**

- To Start
- In Progress
- **Complete**

### What's happening in the next 6 months:

We will spend some time monitoring the data archiving routines to ensure that everything is fully embedded. We have learnt a great deal from this project, which only covers our SAP data, including some limitations in what data we can archive, and when we can archive it, that means we will not achieve all the benefits we originally envisaged. This learning will be invaluable as we consider a further phase on the lifecycle management of unstructured data outside of SAP.

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# Escape Forecasting Tool

**Northern Gas Networks**

## Making informed decisions based on data analytics

### Stakeholders

- Network Companies
- Customers
- NGN Colleagues

### Tags

- Efficiency
- Reliability
- Safety

### What is it?

Our 24/7/365 Emergency Service protects customers lives and property in the North of England, with our First Call Engineers responding to around 65,000 public reported emergencies each year.

We are using data to forecast when and where emergency calls will be received, based on the weather, the geography and the location of our pipes. We'll use predictive models to come up with the forecast, machine-learning to continuously improve the accuracy of the models, and our world-class visualisation tools to produce the information our operational colleagues need in the best format for them, be that interactive dashboards or automated email notifications.

This is building on the work on water ingress we published in our June 2023 Action Plan.

### Why are we doing it?

If we have a better idea of when and where emergencies are likely to be reported, we can make sure that we have engineers in the right place at the right time to respond. This means they could get there quicker, reducing their carbon footprint by minimising travel. It also means we will be more confident that we have resilience going into winter.

*"Using analytics to make better decisions for our customers…"*

*"Helping to maintain our emergency response…"*

### Project Milestones:

Phase One: Data mapping, model design, creation and training. **(Dec '23 – Mar '24)**

| To Start | In Progress | Complete |
|---|---|---|

Phase Two: Operational MVP in all of our 9 geographic areas. **(Apr '24 – Jun '24)**

| To Start | In Progress | Complete |
|---|---|---|

Phase Three: Assessment and next steps. **(Jun '24 – Sep '24)**

| To Start | In Progress | Complete |
|---|---|---|

### What's happening in the next 6 months:

We'll continue to monitor the accuracy of the forecasts over the summer months, prior to the winter.

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# National Energy Research Village

**Northern Gas Networks**

## Encouraging Innovation in the Energy Sector

### Stakeholders

- Data Users
- Customers
- Start Ups
- Academia

### Tags

- Open Data
- Reliability
- Data Best Practice
- Net Zero

### What is it?

The National Energy Research Village is a unique research and development facility located in our Low Thornley site just west of Newcastle. We're building nine homes from different building eras to research different technologies for decarbonising home energy use.

The village consists of three 1910 terraced homes, two semi-detached 1930s houses, a 1950s bungalow, two flats from the 1970s and a detached home from the 1990s, to represent millions of UK homes. They will be used as a test bed for different technologies to understand which energy solutions are best suited to decarbonise different housing stock and how energy use can be reduced.

The homes will be packed full of sensors, with the data available on a data-sharing platform for partners to use.

### Why are we doing it?

The data generated by the NERV could be of extreme importance as we move to a Net Zero society, and we need to make sure that we can get that data to the right people at the right time. Some of the data may be completely open, some of it may be shared through agreement, all of it will be maintained and managed.

*"A world class facility for R&D of energy innovations…"*

*"Providing vital real-world testing capabilities…"*

### Project Milestones:

**Phase One**: Stakeholder engagement and requirements gathering. **(Aug '22 – Sep '23)**

| To Start | In Progress | Complete |

**Phase Two**: Fitting the sensors and linking them to a data management system. **(Oct '23 – Nov '23)**

| To Start | In Progress | Complete |

**Phase Three**: Build a data historian and connect to Analytics Platform. **(Dec '23 – Mar '24)**

| To Start | In Progress | Complete |

### What's happening in the next 6 months:

With the infrastructure now in place, we can start to work with partners to achieve the full potential of this exciting and unique development.

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# Built Over Mains Analysis Tool

**Northern Gas Networks**

## Making informed decisions based on data analytics

### Stakeholders

- Network Companies
- Customers
- NGN Colleagues
- HSE

### Tags

- Efficiency
- Reliability
- Data Quality
- Safety

"Introducing an innovative approach…"

### What is it?

We are partnering with Ordnance Survey to unlock the power of our geospatial asset data and have been working on an analytical model to visualise where on our network there could be gas main pipes that have had buildings or other structures constructed over them. The model has been refined to ensure that we can identify false positives like bus-stops etc, giving us the ability to properly assess where a site visit may be required.

The modelling utilises our asset data and building data, characteristics and status from Ordnance Survey, producing a powerful, accurate and up-to date analytical tool to help us maintain the integrity of our network and the safety of our colleagues and customers.

"Maintaining the integrity of our network …"

### Why are we doing it?

We want to use data to make better decisions, accurate modelling can reduce the number of site visits we make, reducing both our carbon footprint and the cost to survey. It will allow us to target areas of focus, and as it is constantly updated with new OS data on new builds and changing statuses, it will remain accurate and relevant.

### Project Milestones:

Phase One: Proof of Concept developed in a defined geographic area. **(Aug '23 – Dec '23)**

| To Start | In Progress | **Complete** |

Phase Two: Rollout production model to cover whole network **(Jan '24 – Nov '24)**

| To Start | **In Progress** | Complete |

### What's happening in the next 6 months:

We will scale it up to cover the whole network, whilst continuing to refine and train the model to further improve accuracy.

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# Open Data Interoperability

**Building the foundations of Open Energy Data**

## Stakeholders

- Network Companies
- Customers
- NGN Colleagues
- Data Users
- NESO

## Tags

- Open Data
- Data Quality
- Data Best Practice
- Net Zero
- Efficiency
- Reliability

### What is it?

We're collaborating with the other Gas Distribution Networks to build consistent formatting and taxonomy into the data that we share with others.

We are taking an iterative approach to introduce benefits as soon as possible. As a group we will initially review the geospatial pipe data that we publish, agreeing a minimum set of requirements around format, content and naming conventions, that will ensure that a data user will be able to combine the datasets from different GDNs with little or no transformation required. Once this has been agreed, we will move on to the next dataset, building a data standards library that can be utilised by all networks to ensure consistency and interoperability in gas network data.

*"Working together to improve open data…"*

*"Sharing best practice…"*

### Why are we doing it?

Data Interoperability is vital to the success of Open Energy, without it data sharing will be inefficient and ineffective, and a whole systems energy system will be impossible. The work on Open Data Interoperability is just the start of a long process, but it is an important step towards a net zero energy future.

## Project Milestones:

**Phase One**: Scoping and resource management. **(Nov '23 – Dec '23)**

| To Start | In Progress | Complete |

**Phase Two**: Geospatial data review and recommendations report. **(Dec '23 – Mar '24)**

| To Start | In Progress | Complete |

**Phase Three**: Capacity/demand management data review and recommendations report **(Jul '24 – Dec '24)**
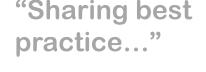
| To Start | In Progress | Complete |

### What's happening in the next 6 months:

We will continue to collaborate with the other Gas Distribution Networks and National Gas to progress this extremely important work.

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# Building Data User Personas

## Ensuring Information Liberation for all

### Stakeholders

- Network Companies
- Customers
- NGN Colleagues
- Data Users
- NESO

### Tags

- Open Data
- Data Quality
- Data Best Practice
- Net Zero
- Efficiency
- Reliability

### What is it?

Working with one of our specialist Engagement & Insight Partners, we will develop a range of stakeholder personas to better understand the diverse data and information needs of key stakeholder groups. We will then use insights gained to set out a roadmap for embedding personas such that they inform strategic decision-making around both data and digitalisation. We will consider the full range of data and digitalisation needs, not only for the present but also for the future. Therefore, in developing the personas, we will account for the full range of current digital services that provide data and information, and those likely to evolve in the future. It is vital that our Digitalisation Strategy, and the personas that support its development and delivery, incorporate new technologies, methodologies, and Innovations.

### "Open Data is people…"

### Why are we doing it?

We want to provide the best service to all our customers, and this is equally true for those customers who want to use our data, be they colleagues, stakeholders, government agencies or industry experts. Data Best Practice is not just an obligation for us, it is without question the right thing to do, and the development of Data User Personas will allow us to make sure that our data products and services are the best they could possibly be for those who need them.

### "Helping us do the right thing for all our stakeholders…"

### Project Milestones:

**Phase One**: Desktop literature review of best practices for developing and 'bringing to life' stakeholder personas. **(Jun '24 – Jul '24)**

To Start | In Progress | Complete

**Phase Two**: Whole Systems Thinking and Expert Interviews. **(Jul '24 – Aug '24)**

To Start | In Progress | Complete

**Phase Three**: Persona Design and Embedding. **(Aug '24 – Sep '24)**

To Start | In Progress | Complete

### What's happening in the next 6 months:

This will be a relatively short piece of work, and we are planning to have the personas complete, embedded and published by the next Action Plan.

Northern Gas Networks

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# Open Data Portal TNG

## Building a full Open Energy Data experience

### Stakeholders

- Network Companies
- Customers
- NGN Colleagues
- Data Users
- NESO

### Tags

- Open Data
- Data Quality
- Data Best Practice
- Net Zero
- Efficiency
- Reliability

### What is it?

We will work to iteratively improve the functionality of our portal, automating the update of key data assets and building a limited access 'Shared Data' area.

Using the learnings from our Data Personas review we will ramp up our Open Energy offerings, expanding our Open Data Portal, to include an API library and a smart visualisation interface (with geospatial visualisation functionality). As part of our commitment to making the best use of the most innovative technologies, we will explore a more automated Data request and triage process utilising conversational AI.

### Why are we doing it?

Our Open Data Portal has been live for almost a year now, and is growing in popularity. We have learnt so much during that time and we want to use all that valuable experience to improve the portal, and to add new products and services that will enhance the functionality and boost the benefits of our data.

"Working hard to expand the Data Assets available to Users…"

"Committed to continual improvement in Open Energy Data…"

### Project Milestones:

Phase One: Improvements to the Portal. **(May '24 – Mar '26)**

| To Start | In Progress | Complete |
|----------|-------------|----------|

Phase Two: Expansion of the Portal. **(Apr '26 – Oct '26)**

| To Start | In Progress | Complete |
|----------|-------------|----------|

Phase Three: Innovative solutions using Artificial Intelligence **(Nov '26 – Dec '27)**

| To Start | In Progress | Complete |
|----------|-------------|----------|

### What's happening in the next 6 months:

The iterative improvements to the portal continues as we finalise the future strategic architecture and secure the funding that we will need to move into phase 2

we are the network

# Data Sharing Preparation

## Building the foundations of Energy Data Sharing

### Stakeholders

- Network Companies
- Customers
- NGN Colleagues
- Data Users
- NESO

### Tags

- Open Data
- Data Quality
- Data Best Practice
- Net Zero
- Efficiency
- Resilience

### What is it?

We will carry out a programme of work to classify our data assets. As part of this work we will implement technology that will automate the Data Classification process and integrate with our ERP.

To be able to manage the flow of data in and out of our network as efficiently as possible, we will implement an Enterprise Data Services solution to act as a Data Broker, Quality Assurance and Exchange, and we will make sure that it is fully and securely integrated with our S/4HANA ERP & SCADA.

Building on this work, we will then be able to implement a Data Preparation Node in line with requirements of the Data Sharing Infrastructure, working with industry partners to ensure a consistent architecture that allows the free sharing of energy data.

*"Digitising the flow of data…"*

### Why are we doing it?

With the evolution of Data Sharing Infrastructure in RIIO-GD3, we need to carry out important preparatory work on how we manage our data so we can make sure that any DSI is a success. As we move into a brave new world of shared energy data and whole systems energy management, good data management becomes the lynchpin of the entire sector.

*"Getting ready for a Data Sharing Infrastructure…"*

### Project Milestones:

Phase One: Scoping and strategic planning. **(Nov '24 – May '25)**

| To Start | In Progress | Complete |

Phase Two: Automated Data Classification. **(Jun '25 – Nov '25)**

| To Start | In Progress | Complete |

Phase Three: Enterprise Data Services & Data Preparation Node. **(Apr '26 – Dec '28)**

| To Start | In Progress | Complete |

### What's happening in the next 6 months:

We will continue to work with Ofgem and other industry partners to finalise the DSI technological requirements and governance principles

# Artificial Intelligence Review (AIR)

**Northern Gas Networks**

## Intoducing Artificial Intelligence into our ways of working

### Stakeholders

- Network Companies
- Customers
- NGN Colleagues
- Data Users
- NESO

### Tags

- Open Data
- Data Quality
- Data Best Practice
- Net Zero
- Efficiency
- Reliability

### What is it?

We will explore the use of Microsoft Co-Pilot as a tool to enhance back-office efficiency: through our Process Optimisation Programme we are establishing a small user group to gain valuable insight on how Co-Pilot can be used effectively, prior to a rollout at scale. We're also applying bespoke AI solutions for industry-specific issues we're building a Conversational AI, using graph analytics, to assist our engineers to find the information they need from our library of industry standards and best-practice.

Based on what we learn from this initial work, we will start to scale up the safe and responsible use of Artificial Intelligence in RIIO-GD3

### "Using AI safely and responsibly…"

### "Making the most of this exciting and disruptive technology…"

### Why are we doing it?

We know that Artificial Intelligence will play an important role in the energy sector of the future and we're keen to explore how we can make the best use of it. We are starting out small, making sure that we fully understand the benefits and risks of using AI so that we can provide the best products and services to our customers and colleagues

### Project Milestones:

Phase One: Co-Pilot Trial and Standards Searchbot. **(May '24 – Dec '24)**

| To Start | In Progress | Complete |
|----------|-------------|----------|

Phase Two: Findings review and next steps. **(Dec '24 – May '25)**

| To Start | In Progress | Complete |
|----------|-------------|----------|

### What's happening in the next 6 months:

We're working with a controlled group of colleagues to trial the many uses of Co-Pilot.

**we are the network**

# Changes from our last Action Plan...

**An update on initiatives featured in previous Action Plans**

| Initiative | What's happened... | Status |
|---|---|---|
| Automate+ | Our Automation Programme has been redefined as the Process Optimisation Programme | Complete |
| Asset Data Intelligence | A fully automated AI solution to monitor the quality of our critical asset data is now integrated into our SAP system | Complete |
| Pressure Systems Database | All data cleansing and migration activities are complete, but we're assessing how best to upgrade the user interface | On Hold |
| Water Ingress Predictive Model | A predictive model using the latest graph analytics techniques is now available for our operational colleagues to use. | Complete |
| Load-Shedding Application | A fully digital solution for this critical process has been built and is in use. | Complete |
| Chatbots | We now have chatbots embedded into our internet and intranet sites to facilitate navigation and enquiries | Complete |
| Open Data Platform | Our Open Data Portal is now live and in use. Datasets including asset geospatial data, Public Reported Escapes, Biomethane volumes, Carbon Monoxide events and Customer Satisfaction survey results are available to download via our interactive portal. | Complete |

You can find copies of previous Digitalisation Action Plans on our Open Data Portal...

**Enter Here**

...or paste the following into your browser if you prefer - https://northerngasopendataportal.co.uk/

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# Changes from our last Action Plan...

**Northern Gas Networks**

**An update on initiatives featured in previous Action Plans**

| Initiative | What's happened… | Status |
|---|---|---|
| Asbestos Management | All our asbestos records are now logged in S/4HANA, with Maintenance Plans attached to them. Automated reporting gives our Health & Safety team instant access to all aspects of asbestos management | Complete |
| CRM Upgrade | We have successfully moved our Customer Relationship Management to Microsoft Dynamics, providing a new platform for our interactions with our customers, that we can use to develop further digitalisation of our customer service during RIIO-GD3. | Complete |

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# Contact us...

**We would really appreciate your feedback on our Digitalisation Action Plan**

This Action Plan should inform and bring value to you. If there is any clarification, question or comment regarding this plan, we would love to hear from you. Please get in touch with us via one of the communication channels listed below.

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