

Our Digitalisation Action Plan

Stakeholder update December 2024

Cadent

Your Gas Network

Our Digitalisation Themes

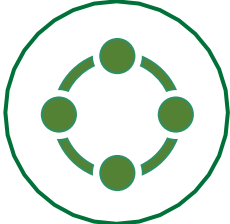
Our Digitalisation Action Plan reflects the progress we have made in our digitalisation journey throughout the second half of 2024.

This document provides details on steps we are taking towards fulfilling our RII0-2 commitments in the digitalisation space, and proposed actions which support our proposed RII0-3 investments.

Actions have been classified according to the Digitalisation Themes defined in our Digitalisation Strategy published December 2024.

We welcome this opportunity to provide transparency and increase the visibility of our work to stakeholders.

Our Digitalisation Themes



Interoperability











Data & Digital Literacy



Open Data








Index of our initiatives

Key	
	On track - No identified risks
	Cancelled / on hold - Significant dependency/ learning from previous milestone
	Dependency identified and mitigated
	Completed


Page Number	Initiative title	Digitalisation Themes			
		Interoperability	Data & Digital Literacy	Open Data	Status
6	Transforming our people services				In Progress
7	Evolution of mature Smart Network				Cancelled
8	Using Data to improve our Safety				Completed
9	Using Data to improve our Sustainability				In Progress
10	Better Supporting Our Customers in Vulnerable Situations				Completed
11	Empowering Customer Self-Survey Through Technology				Completed









Index of our initiatives

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Page Number	Initiative name	Digitalisation Themes			
		Interoperability	Data & Digital Literacy	Open Data	Status
12	Energy Data Catalogue				Planned
13	Open Data Portal				In Progress
14	Future Energy Explorer Pilot				Planned
15	Biomethane Smart Control				In Progress
16	Advanced Emission Detection				In Progress
17	SIF Project – Digital Platform for Leakage Analytics				In Progress
18	Short Term Forecasting Model				Completed

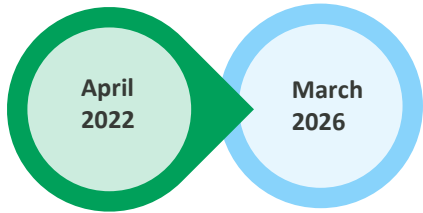
Index of our initiatives

Key	
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	Completed

Page Number	Initiative name	RIIO-3 Digitalisation Themes			
		Interoperability	Data & Digitalisation Literacy	Open Data	Status
19	Open Data Triage				Not Started
20	Data Sharing Licence – Common “Shared” Data Licence				In Progress
21	Digital Spine of the Energy System				Not Started
22	Standards for Gas Data				In Progress
23	Expanding Target Data Architecture				Not Started
24	Asset Investment Portfolio Management				In Progress

Transforming our people services

Investing in HR Transformation Technologies



Digitalisation Themes



Stakeholders who will benefit

Customer Service

Supply Chain

Network Planning

Field Engineers

Service we provide today

December 2024 update

Historically, HR Systems were fragmented, leading to a poor user experience. This action point relates to the integration of HR systems and services, providing a single system version of truth, and enabling greater functionality and ease of operation for users.

What we have done so far

Launch of system to manage: Employee Central, Recruitment, Onboarding, Employee and Manager self-service is now live for all employees.

Streamlining and integration: Employee data across HR (Human Resources) and S.H.E (Safety, Health and Environment) solutions.

LinkedIn Learning Launched: An online educational platform offering a vast library of video courses taught by industry experts to help individuals enhance their professional skills.

Cloud based Document Management solution

Future Implementations

Employee Relations Case Management: The HR IT team is reviewing processes to utilise new systems and processes. This has led to a delay in the implementation of this functionality.

Next Phase

Cloud based time management tracking solutions: for field staff and migration of time tracking to the cloud.

Payroll system: implementation for remaining employee groups. Complete deployment to unify all staff on a single platform for employee data management.

Service in the future

What we will have in place

As part of the further improvement, we are delivering:

- Online tool to manage Employee Relations cases;
- Self-service access for colleagues in relation to their HR records, through one application
- Reporting solution to increase employee productivity and increase data driven decision making;
- Automation of the processes for our HR teams;
- Dedicated solution for delivering our People Strategy and Talent Management processes.

How the service will be accessed:

Our HR solutions will be available to Cadent Employees via all devices via a URL link from the intranet and a mobile app.

Project milestones

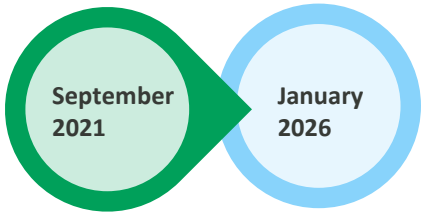
Milestone	Success Measure	Delivery Date	Status
Payroll management solution – pilot employee group	Pilot Employee groups migrated	August 2025	In Progress
LinkedIn Learning made available to all employees	LinkedIn Learning implemented	September 2024	Completed
Online learning & talent system improvements	Improved employee learning experience	March 2026	In Progress
Cloud based document management solution	Improved contracting and filing solution for the back-office team	December 2024	Completed
Employee Relations Case Management solution requirements gathering	Defining requirements to configure a secure and auditable employee relations case management solution using existing solutions	September 2025	Planned

Risks/Mitigations

Employee Relations solution implementation has been delayed until requirements have been finalised.

Evolution of mature Smart Network

More granular data can lead to significant operating efficiencies and asset reliability improvements, providing opportunities for us to improve asset reliability for our stakeholders



Digitalisation Themes



Stakeholders who will benefit

Government Authorities and Policy Makers

Network Planning

Energy Industry and Other Utilities

Service we provide today

December 2024 update

The commitment to invest in hydrogen networks and hydrogen blending, brings complexity in operation and billing that our current network is not designed for. Hence, we need to obtain greater insight in the demands from our 11 million customers.

Currently we have approximately 1,000 loggers which are placed across various strategic points in our network that inform our network modelling tools used to create network designs and operating strategies. There is a growing need to collect more information and adopt new types of solutions and devices deployed.

The delivery date for the installation of street level pressure sensors has changed to enable us to leverage the first data insights from the DPLA . This can identify the optimal locations and this prioritisation reinforces that of such data driven decisions to enhance the effectiveness and accuracy of the sensor network ultimately leading to better performance and resource allocation.

Project milestones

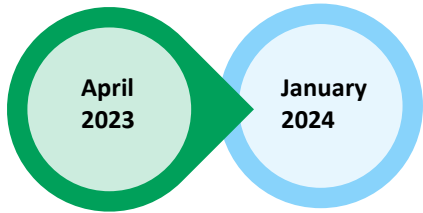
Milestone	Success Measure	Delivery Date	Status
Installation of Street Level pressure sensors across selected areas of our network	Successful installation and collection of sensor data	TBD	Cancelled

Risks/Mitigations

This action related to the delivery of network pressure monitoring. Greater value for the adoption of this technology has been identified in the [Biomethane Smart Control](#) action and effort has been switched to this work.

Using Data to improve our Safety

Implementing a new Incident Management System (IMS)



Digitalisation Themes



Stakeholders who will benefit

Regulatory Reporting

Supply Chain

Field Engineers

Service we provide today

December 2024 update

A self-service system to record all incidents and hazards is available to all employees, contractors and third parties. The solution enables the line managers and our safety team to analyse the records, take appropriate action, investigate the cause and take proactive action to prevent repeat incidents. Having a holistic view of our safety data enables us to better protect our people, our assets and the communities we serve.

The current system provides interactive dashboards with informative data, future trends and analysis to drive action. This enables data manipulation and stratification down to levels where action and improvements can be identified and communicated. Improvements have been delivered to collate and streamline the data collection across the business; however, this is labour intensive, and work is progressing to automate this from the source.

Project milestones

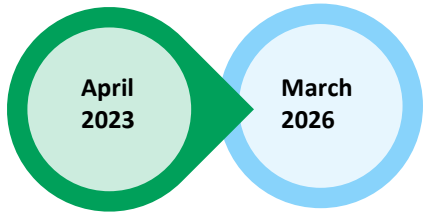
Milestone	Success Measure	Delivery Date	Status
Outcome analysis	Post implementation review nearing completion. Final validation of the data and automation of the process.	(IMS) January 2024	Completed

Risks/Mitigations

None

Using Data to improve our Sustainability

Implementing a new Environment Reporting System (ERS)



Digitalisation Themes



Stakeholders who will benefit

Regulatory Reporting

Business Customers

Supply Chain

Field Engineers

Energy Industry and Other Utilities

Low Carbon Connecting Parties

Service we provide today

December 2024 update

The Environmental database and Action Sustainability solutions allows us to report and measure our Green House Gas emissions in line with the UK's net zero targets. The current system provides interactive dashboards with informative data, future trends and analysis to drive action; however, this is labour intensive, and work is progressing to automate this from the source. This system is a key enabler to deliver our environmental commitments throughout RIIO-2 and beyond, and support delivery Regulatory Reporting Process and the Annual Environmental Report [Annual Environmental Report 2024 \(cadentgas.com\)](https://www.cadentgas.com).

Additionally, we are engaging with its main IT suppliers to encourage data gathering, establish monitoring frequency, reporting metrics and where available, document net zero initiatives. We have mandated the membership and engagement of our vendors with our Sustainability School, offering education and certification which will count towards tender scoring in the future.

We are also investigating the evidence for renewable energy claims with respect to carbon credits, carbon offsetting, green energy purchase agreements and Renewable Energy Guarantees of Origin (REGO) certificates. We have successfully incorporated Sustainability and Equity, Diversity & Inclusion (ED&I) into our Pre-Qualification Questionnaires (PQQs) with a substantial 10% weighting. This will be used in all procurement events in IT.

Service in the future

The automated dashboards will show our energy consumption and greenhouse gas emissions and how we are reducing our emissions to meet the UK's net zero targets. The calculator model will provide a framework and model to collate and calculate our Scope 1, 2 & 3 emissions

We estimate that by 2028 we will have re-tendered 90% of our IT estate using the new PQQ, which advances us towards setting the minimum standards that all IT suppliers will need to meet to qualify for future tenders. We anticipate this being a mix of the use of certificated carbon offsetting initiatives as well as Green Power Purchase Agreements, with an emphasis on "reduction and removal first". We will also develop a tiered threshold framework that is inclusive of SME suppliers who have may have more limited means of accessing renewable energy initiatives.

Project milestones

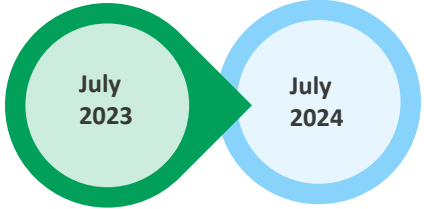
Milestone	Success Measure	Delivery Date	Status
ERS system outcome analysis	Post implementation review and validation of the data and automation of the process.	March 2026	In Progress
Sustainability targets integrated into Supply Chain	Sustainability and Equity, Diversity & Inclusion (ED&I) incorporated into our Pre-Qualification Questionnaires (PQQs) with a substantial 10% weighting	October 2024	Complete

Risks/Mitigations

We are reviewing the best course to automate and streamline the capture of data to be displayed on real-time, interactive dashboards. The current process will continue and supports the requirements..

Better Supporting Our Customers in Vulnerable Situations

Fully embedding the Priority Services Register (PSR) to support on-site decisions on additional welfare to support customer in vulnerable situations when temporarily off gas



Digitalisation Themes



Stakeholders who will benefit

Field Engineers

Customers in Vulnerable Situations

Supply Chain

Service we provide today

December 2024 update

Phase 1 & 2

Engineers required access to multiple applications to gain a complete view of customer vulnerability, with the PSR not embedded across all. The Additional Welfare Decision Tool (AWDT) sat alongside the PSR, making it more difficult for front line engineers to combine the data to ensure that the optimal welfare decision package was chosen each time.

This project has implemented improvements to increase consistency of our safeguarding services to customers, standardisation of support measures we provide relating to customer need and traceability of the support equipment we make available to customers when in a vulnerable situation due to our works.

We encapsulated the guidance and knowledge within a single application that allows our engineers to leverage this information easily and consistently to best assist our customers impacted by our works when in an off-gas situation. AWDT has been integrated with logistics providers so once a need is identified within the application the required items are ordered, tracked and monitored as part of the process.

Fully automated safeguarding support tailored to the needs of our customers. API (Application Programming Interface) integration with existing applications and future providers enables automation, traceability and security in the delivery of our support PSR customers, or those in a vulnerable situation. The AWDT work started in July 2023 with the initial increment being delivered across Networks as Phase 1 and Phase 2 delivered July 2024.

How the service is accessed

The service is accessed via a Web based User Interface by our Field Force & Customer teams as well as supporting organisations (e.g. National Energy Action & British Red Cross). This is currently built on a low-code platform by Business users meaning users can design and build themselves rather than place a formal request via the IT team.

Future Developments

Integration of this solution into our target architecture will take place in an additional phase of this project in 2026 but further assessment of this will be required.

This technology will have to remain in place for longer than originally anticipated. Due to the end of life of our current scheduling solution, integration with our target architecture will take place post 2026 and the existing solution will persist until this point. We will make sure that our contracts and support models remain in place for the current solution so that customers are not impacted.

Project milestones

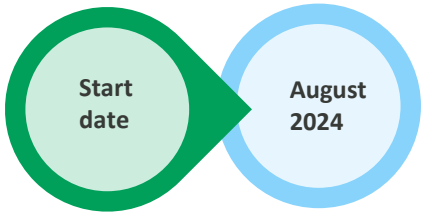
Milestone	Success Measure	Delivery Date	Status
Deliver Additional Welfare Tool to all networks (Phase 1)	Phase 1 progress continued although reviewing user feedback from the field force regarding the UI and making improvements	July 2024	Complete
Enhance Additional Welfare Tool to provide delivery of services (Phase 2)	This work was completed by the end of July as per the plan	July 2024	Complete

Risks/Mitigations

None

Empowering Customer Self-Survey Through Technology

Using guided video capture to enable customer self-survey for new gas connections



Digitalisation Themes



Stakeholders who will benefit

Energy Industry and Other Utilities

Field Engineers

Domestic Customers

Service we provide today

December 2024 update

The customers who requested a new gas connection were asked to be present at the time when our surveyors conduct an assessment (a survey visit) of the requirements for any new connection. These visits must be arranged with significant notice and there was no option for our customers to 'self-survey' in their own time, avoiding the potential inconvenience of a survey visit.

What we have done so far

Our new connections process is made available to our customers currently via telephone or email.

Together with a technology partner, we developed a trial of a self-survey video capture application for use instead of a visit from a surveyor to the property for self-selected customers within the West Midlands network.

What has been put in place

A guided video survey tool for new gas connections that has been developed and trialled with both our customers and our engineers and allows our customer to self-serve if so desired. As the trial was successful, Cadent has committed to the supplier after a tender process.

How the service is accessed

When customers engage with our contact centre and this is a suitable solution for their needs, an individual link to our video capture service is provided via text allowing them to submit the recording to us. Additionally, there is the opportunity to support the customer via a live video call should they need more assistance.

Project milestones

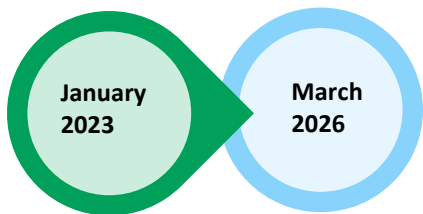
Milestone	Success Measure	Delivery Date	Status
Video capture application rollout	Implementation of a permanent solution	August 2024	Complete

Risks/Mitigations

We have committed to this supplier for 3 years. We will look to integrate into our core enterprise architecture which will be taking place post 2026. We will make sure that our contracts and support models remain in place for the current solution so that customers are not impacted

Energy Data Catalogue

Digital tool to support visibility and accessibility of our Data Assets.



Digitalisation Themes



Stakeholders who will benefit

Energy Industry and Other Utilities

Government Authorities and Policy Makers

Reporting Specialist

Service we provide today

Our Energy Data Catalogue containing the Data Assets that we currently make available to external Data Users can be accessed via Cadent [Open Data Portal](#).

In parallel, we are progressing with establishing a connection between our system of records and a data management tool. Our aim is to automate collection of our internal metadata and focus within our internal data community to standardise the descriptions and definition of the data.

As of December 2024 update:

- We have successfully completed a pilot aimed to prove technical feasibility of connection between our system of record and data management tool to extract a selected sample of metadata.

Service in the future

Our ambition is to evolve and mature our Energy Data Catalogue to incorporate a wider set of Cadent Data Assets and make the Data Catalogue accessible to our Stakeholders and colleagues through the following means:

- Our internal colleagues are going to have access to our internal Data Catalogue that will support our efforts in standardisation and unification of our critical data
- Our external Data Users are going to benefit from the Data Catalogue incorporated within our Open Data Portal and evolution of this Data Catalogue will be synchronised with the released of new Data Assts within the portal.

Project milestones

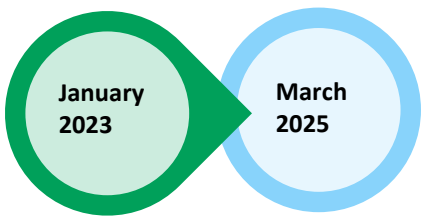
Milestone	Success Measure	Delivery Date	Status
Cadent Energy Data Catalogue MVP	First iteration of Data Catalogue available for Data Users through Open Data Portal	October 2024	Completed
Establish connection between pilot core system and data management tool	Extract of raw metadata is accessible, and metadata is visible to a metadata analyst.	December 2024	Completed
Plain English names and description	Pilot systems and warehouses connected Scanning and retrieval of data from systems. Data enriched by internal data community with Plain English descriptions	April 2025	Planned
Expanding the connection from pilot phase to selected data domain source.	Use of data management tool to ingest source data and populate energy data catalogue	March 2025	Planned

Risks/Mitigations

There are no risks identified at this stage for upcoming milestones. Future updates on Data Catalogue available to our stakeholders will be reported through Open Data Portal initiative updates.

Open Data Portal

Digital service to make our data available to stakeholders



Digitalisation Themes



Stakeholders who will benefit

Energy Industry and Other Utilities

Government Authorities and Policy Makers

Low Carbon Connecting Parties

Network Planning

Service we provide today

December 2024 update

We have delivered our Open Data Portal.

Our new Open Data Portal allows users to:

- Browse our interactive Data Catalogue and the metadata associated with the Data Assets
- Directly view Open Data Assets as tables, charts and maps
- Allow Data Users access to more sensitive Data Assets through this portal through more capable access management functions
- Download Data Assets in a variety of formats, or selected parts of Data Assets via API
- Directly contact us through an integrated form to request new data assets or to raise queries about Data Assets

Importantly, with the metric gathering embedded in the platform we'll be able to better understand the Data Assets which Data Users interact with the most and can tailor our delivery of future Data Assets to meet these needs.

With the delivery of a self-service data portal, Data User needs are met faster, and more resource is available to continue to develop new Data Assets for publication. To view Cadent's new Open Data Portal please visit <https://cadentgas.opendatasoft.com/>

Service in the future

Development will be split into two sections:

Capability of the Open Data Portal

- Automated data refresh of appropriate Data Assets, to allow Data Users to access current Data Assets with confidence.

Additional Data Assets published to the Open Data Portal

- Previously developed Data Assets may require considerable redevelopment to enable them to be uploaded to the Open Data Portal in a way which enables them to take advantage of the functionality of the portal.
- New Data Assets will be developed, including planned delivery of Demand data which will represent the flow of data on the network over time.

Project milestones

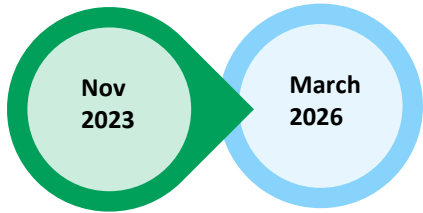
Milestone	Success Measure	Delivery Date	Status
Product configuration	Integration of the selected product within Cadent ecosystem	October 2024	Completed
Open Portal Go-Live	Launch of Open Portal	November 2024	Completed
Capability Development of Open Data Portal – Data User Experience	Reconfiguration of website pages to offer an improved user experience	December 2024	Completed
Capability Development of Open Data Portal – Shared Data	Embed access control measures to allow data triaged as “shared” to be delivered through the self-service portal	December 2024	Completed
Data related to flow of gas on Cadent network	New entries added to the Open Data Portal	March 2025	In Progress
Capability Development – automation of data asset updates	POC for one Data Asset to be updated automatically	March 2025	In Progress

Risks/Mitigations

There are no risks identified at this stage for upcoming milestones.

Future Energy Explorer Pilot

Laying the foundations for scenario analysis of energy future



Digitalisation Themes



Stakeholders who will benefit

Government Authorities and Policy Makers

Network Planning

Energy Industry and Other Utilities

Business Customers

Low Carbon Connecting Parties

Regulatory Reporting

Cadent Gas Ltd 2024

Service we provide today

December 2024 update

We are required to have a deep understanding of the future energy requirements of the UK as a responsible energy provider and ability to adapt out infrastructure to meet evolving Stakeholder needs.

Traditional energy modelling often relies on generalised assumptions and lacks the granularity to assess viability of potential energy pathways.

We have addressed this challenge by piloting a digital solution called Future Energy Explorer that utilises granular data, including property types, energy efficiency ratings, customer affluence and local infrastructure to create a detailed, localised scenarios for consumers within our network.

Currently the Future Energy Explorer is used to support our Future Energy Specialist in:

- **System Transformation & Network Modelling** –providing insightful data into the National Energy System Operator (NESO) and Regional Strategic Energy Planners (RESP)
- **Hydrogen Demand Modelling** – Internal demand model that supports the production of our own hydrogen and net zero scenarios.
- **Local Area Energy Planning (LAEP)** –to support Local Authorities (LA) and Regional Bodies in developing their Local Area Energy plans.

Service in the future

What we will have in place

This pilot has successfully concluded and provides valuable learnings and interest across our Asset Investment community. Our ambition is to invest further in this digital tool and prepare the path for incorporating this new digital tools in our target data architecture, enriching the set of digital tool available to our colleagues in conversation with Stakeholders across the energy sector on viable future energy pathways.

How the service will be accessed

While the outputs of the work can be already shared directly with appropriate stakeholders our ambition is to enrich the offering, we currently have on our Open Data Portal and automate generation and provisioning of underlying data.

Project milestones

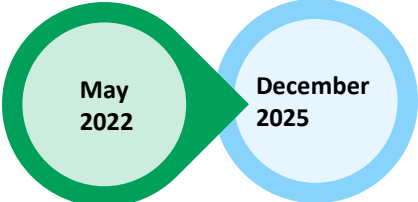
Milestone	Success Measure	Delivery Date	Status
Development phase of a digital scenario modelling tool and associated data platform	The information and logic provided by Cadent to the developer required further development, resulting in a delay. Acceptance criteria have been amended and agreed	July 2024	Complete
Prepare a conceptual design of Future Energy Explored within our target architecture.	Conceptual architecture diagram prepared and approved	September 2024	Complete
Create a high-level solution design.	Agree a high-level design on target data architecture	April 2025	Planned

Risks/Mitigations

None identified at this moment.

Biomethane Smart Control

Modelling and monitoring the network to allow the integration of Biomethane



May 2022

December 2025

Digitalisation Themes



Stakeholders who will benefit

Government Authorities and Policy Makers

Network Planning

Energy Industry and Other Utilities

Low Carbon Connecting Customers

Service we provide today

December 2024 update

Biomethane is a green gas but has to be integrated carefully into the gas distribution networks. To incorporate the addition of gas at different pressure requires careful monitoring of the network and excellent modelling to understand the implications downstream. Pressures need to be kept low enough for Biomethane producers to inject gas to the network, but high enough to ensure security of supply for our offtake customers.

Under the OptiNet initiative we collaborated with a smart energy technology company and Wales & West Utilities to understand how intelligent control and compressor technology can be used to maximise flows from Biomethane Sites. Commissioning the assets on site starts in November 2024, with testing and integration into the network starting January 2025. OptiNet will be the first in grid compressor in the UK to reverse the flow of gas back up the pressure tiers creating capacity for green gas injection.

We now have sites within East Anglia and the East Midlands that actively monitor the pressure of the network to support the injection of Biomethane. We now have the technology to fit smart pressure control to our high-pressure transmission network with the first of these looking to be deployed December 2025.

Service in the future

What we will have in place

To enable the most effective deployment of compressors our digital systems modelling the network need to grow with us. The learning we will take from Optinet and subsequent testing through December 2024 will give us must needed insight to shape our system needs.

The project milestones show the development of the improved capture of data to monitor the network, which will also feed the modelling required, and the control of the pressure of the network to enable the injection of biomethane without impacting downstream customers.

More details are available at: [Biomethane - Cadent Gas Ltd](#). On Cadent networks today we have 45 entry connections with the ability at maximum capacity to heat the equivalent of over 300,000 homes.

Project milestones

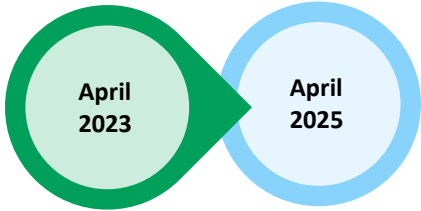
Milestone	Success Measure	Delivery Date	Status
Installation of monitoring equipment – measurement of pressure	Installation of pressure monitoring equipment at biomethane injection sites candidates	August 2025	In Progress
Installation of monitoring equipment – measurement of flow	Installation of gas flow monitoring equipment at biomethane injection site candidates	October 2025	In progress
Installation of control equipment – control of pressure	Installation of gas pressure control equipment at biomethane injection site candidates	December 2025	In Progress

Risks/Mitigations

None

Advanced Emission Detection

Previously – Leakage Detection – Emissions Reduction Optimisation



Digitalisation Themes



Stakeholders who will benefit

Government Authorities and Policy Makers

Energy Industry and Other Utilities

Supply Chain

Network Planning

Service we provide today

December 2024 update

We are piloting a solution (Advanced Leak Detection, currently provided by Picarro) that offers an innovative set of technologies presenting a major opportunity to locate and quantify actual emissions, their sources and inform the optimisation of our emissions reduction plan. This is driven by a forthcoming mandated requirement from the HSE, expected 2026.

Our solution collects methane and ethane concentrations, Global Positioning System (GPS) and windspeed data from vehicle mounted sensors and uses an algorithm developed through machine learning to support an asset model showing emissions across our network.

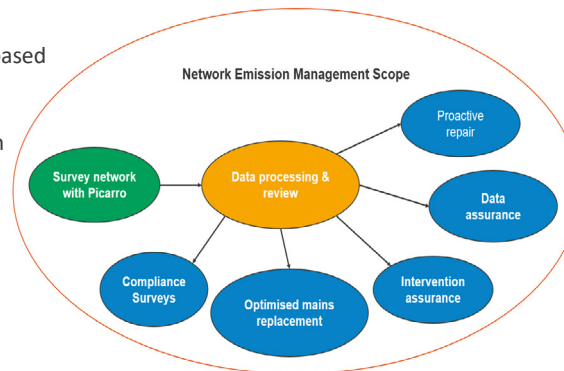
We have used this technology so far in our North London and West Midland networks.

Service in the future

Advanced Leak Detection cars will survey our network proactively, at first with a frequency of once per year to collect a baseline view of emissions, and then with risk-based frequencies.

Leak Indications found above threshold will flow through our work management system to be visited by a First Call Operative (FCO), with remedial actions to follow.

All data collected will be used to prioritise our mains replacement programs, as well as feed into our business planning and other processes (see right).



Project milestones

Milestone	Success Measure	Delivery Date	Status
Scale Up Go/No Go	Decision to scale the technology across all Cadent networks. Based on the Net Zero Pre-construction Work and Small Net Zero Projects reopener outcome	February 2025	In Progress
Detailed Benefits Case Definition	Retrospective analysis of optimising mains replacement and conducting proactive repairs. This will occur once we have surveyed some areas in Fulham 3 times	December 2024	Completed

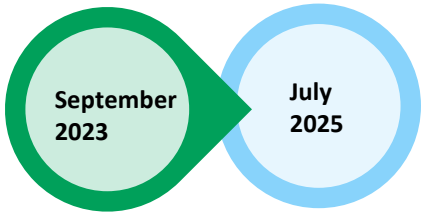
Risks/Mitigations

Scale-up will require system changes to the Proactive Escape process of allocating the work to our Field Force Engineers. Presently working with the Authority to agree start date to deliver value earlier.

Presently reviewing how this technology has been used internationally to derive best practice for its implementation.

SIF Project – Digital Platform for Leakage Analytics

Reduce gas network leaks and emissions in a cost-effective way



Digitalisation Themes



Stakeholders who will benefit

Energy Industry and Other Utilities

Government Authorities and Policy Makers

Network Planning

Domestic Customers

Business Customers

Regulatory Reporting

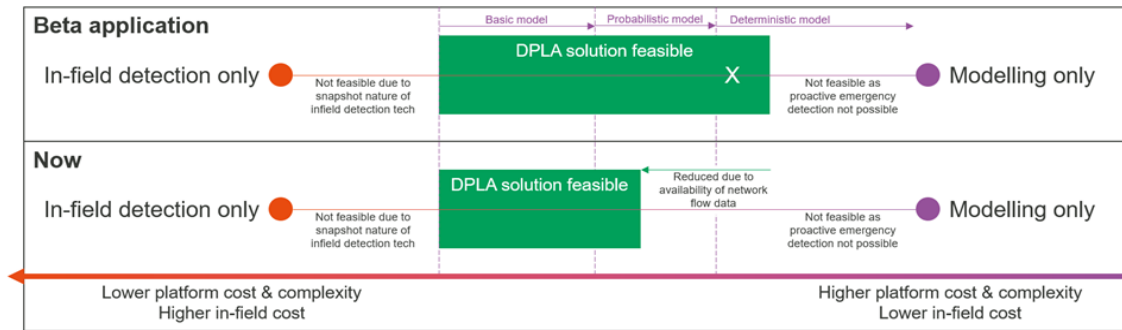
Cadent Gas Ltd 2024

Service we provide today

December 2024 update

The DPLA is an innovative project that utilises digital technology and data to provide an accurate view of gas leakage across Cadent’s network, with potential application for all Gas Distribution Networks in Great Britain. This is expected to enable efficient operational and investment decisions to reduce leakage, improve network safety and reduce customer bills. Drastically reducing leakage across gas infrastructure is a global challenge that must be addressed to achieve the Global Methane Pledge and Net Zero targets by 2030 and 2050, respectively.

The project has pivoted away from the deterministic hydraulic model to a lower complexity and lower cost pathway to remain feasible. Within the new feasibility window (shown below) there are several low-cost scenarios, some of which retain an element of hydraulic modelling but with less data processing, relying on probabilistic models instead of deterministic. These options still bring a benefit of smaller ongoing in-field leak detection programmes, which reduce ongoing costs, and therefore should still be explored.



Service in the future

The DPLA will provide a step change to move from the static approach to a data driven one to dynamically detect and report methane leaks to a much greater level of accuracy and granularity to enable networks to act far more proactively. The current Shrinkage and Leakage Model (SLM) has been in place for 20 years and is based on legacy data and studies from 1994-2022 and has remained as a static approach since.

What we will have in place:

We are planning to develop a prototype demonstrating for how data, analytics and models can be used to identify and locate gas leaks in the gas distribution network. The core functionality of the DPLA is data-driven leakage modelling, unlocking proactive leak detection capabilities, combined with testing the application of novel gas sensor technologies, to inform better targeting of the deployment and arrangement of our in-field specialised sensors thereby streamlining 'network sensorisation' costs.

Shaping the future network, the DPLA's mission is to reduce carbon emissions, realise customer benefits and improve safety in a cost-effective manner.

Project milestones

Milestone	Success Measure	Delivery Date	Status
Data model validation	Data model is built, tested and produce adequate outputs and performance	February 2025	In Progress
MVP Goes live	Solution is deployed for North London and East of England networks	July 2025	In Progress

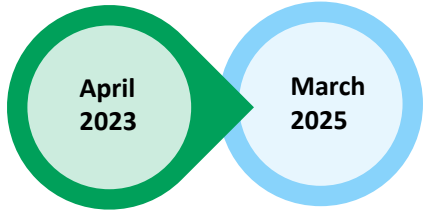
Risks/Mitigations

There is a risk that, due to unforeseen circumstances within Cadent and/or DPLA on technical preparation, delivery and roll-out, the success of DPLA will be constrained by the limited reach of system, performance and roll-out testing, resulting in material project delays and/or impacts to the quality of the deployed solution.

There is also a risk that, due to the innovative nature of the DPLA project, a significant number of solution and delivery assumptions are being made which may need to be revisited once the final Low-Cost model blend is known.

Short Term Forecasting Model - Pilot

Forecasting Emergency Workload



Digitalisation Themes



Stakeholders who will benefit

- Field Engineers
- Network Planning
- Domestic Customers

Service we provide today

December 2024 update

There is a requirement to forecast reactive emergency work to ensure the right amount of field force engineers are available to protect customers and manage emergency standards of service. This is a manual process, where forecasts based on weather projections and the workload volumes recorded over the last three years are created, then split over location to give a forecasted resource requirement for demand management.

The existing forecasting process can be very variable with a 25%+ on-day variance which means that either Cadent makes too many resources available incurring avoidable cost or there is a shortage of resources which might result in failure to attend gas emergencies within required Service Level Agreements (SLAs).

This pilot has tested more advanced modelling tools to provide workload forecasts and resource requirements to maintain standards at least seven days in advance.

With this proof of concept complete, a subsequent project will now migrate this pilot solution into our preferred cloud environment for further development. Hour-by-hour regional forecasts and refining the modelling solution will ensure greater accuracy and operational efficiency to support our Operational workforce.

This pilot action has been closed.

Project milestones

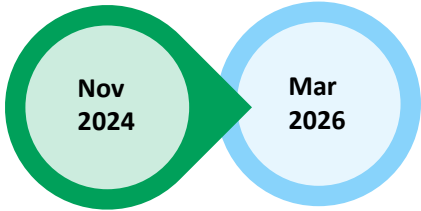
Milestone	Success Measure	Delivery Date	Status
Delivery of a pilot Short Term Forecasting Model Pilot	Functional short term forecasting model has been developed	January 2024	Completed
Hour-By-Bour & regional forecast	Deploy forecasts at dept level by hour	October 2024	Cancelled
Testing and refinement of forecasting model	Continual testing and refinement of forecasts to ensure greater accuracy and operational efficiency	March 2025	Cancelled

Risks/Mitigations

None

Open Data Triage

Collaboration with energy networks to revise the Data Triage Playbook



Digitalisation Themes



Stakeholders who will benefit

Reporting Specialist

Energy Industry and Other Utilities

Government Authorities and Policy Makers

Service we provide today

This is a new action added to the Digitalisation Strategy Action Plan in December 2024.

Overview

The [ENA Data Triage Playbook](#) was developed through a collaboration of the UK energy networks and consequentially endorsed by the Data & Digitalisation Steering Group (DDSG) of the Energy Networks Association (ENA) and later Ofgem in 2021. This provided an agreed methodology for undertaking Open Data Triage, based on Data Best Practice (DBP) Principles and Supporting Information. Since then, understanding of this function have developed and it is important to revisit this to ensure it remains relevant and effective.

The Data Triage Playbook is a collaborative output which provides the collective view of how the DBP Principles relating to Open Data Triage should be managed. This serves as the foundation for Cadent's Data Triage processes and procedures.

Service in the future

Participation in the development of a new Data Triage Playbook:

Cadent will participate in the process to review and update the Data Triage Playbook

The objective of this initiative is to propose a common methodology for Open Data Triage across all energy networks in the UK, in efforts to simplify Data User experience when engaging with energy data.

The updated Data Triage Playbook will be used to review our internal data governance practices and will inform any necessary changes.

Project milestones

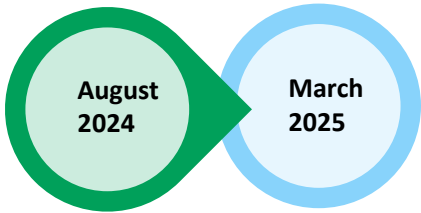
Milestone	Success Measure	Delivery Date	Status
Participate in collaborative sessions to capture required content	Participation in Data Triage Playbook update process	March 2025	Not Started
Participate in review of proposed changes to Data Triage Playbook and feedback sessions as a stakeholder	Collaborative review and feedback to proposed changes to reach finalised redraft of Data Triage Playbook	April 2025	Not Started

Risks/Mitigations

This initiative is collectively led by ENA. We are under discussions on the most appropriate participation in the initiative from gas networks recognising that the importance of this initiative across all energy networks in the UK.

Data Sharing Licence – Common “Shared Data” Licence

Collaboration with other energy networks to develop a common licence for “shared” data assets



Digitalisation Themes



Stakeholders who will benefit

Individual and Business Customers

Safeguarding Organisations

Government Authorities and Policy Makers

Energy Industry and Other Utilities

Industrial Customers

Cadent Gas Ltd 2024

Service we provide today

This is a new action added to the Digitalisation Strategy Action Plan in December 2024

Overview

To enable a consistent experience for Data Users, energy networks agreed through the Energy Network Association (ENA) sub-group for data sharing licencing to use CC-BY 4.0 or OGL 3.0 for the delivery of Data Assets triaged as “Open”.

For Data Assets triaged as “Shared”, energy networks presently use their own Data Sharing Agreements, which adds complexity for Data Users seeking similar Data Assets from multiple sources.

Development of the Common “Shared Data” Licence is proposed through the ENA DDSG, and appointment of a third-party to develop this is presently going through a tender process.

Service in the future

By collaborating to identify and document common requirements, it is possible to appoint a third-party with specific expertise to create a new data licence which can be used consistently by all energy networks for Data Assets triaged as “Shared”.

This action is to support the development and implementation of a common data licence for “shared” Data Assets, which may be through the delivery of consistent terms to be used in a corporate Data Sharing Agreement, or through the development of a stand-alone data license which is adopted in its entirety.

With the consistent implementation of a common data licence for “shared” Data Assets, Data Users will benefit from a consistent experience similar to that implemented for “Open” Data Assets.

Project milestones

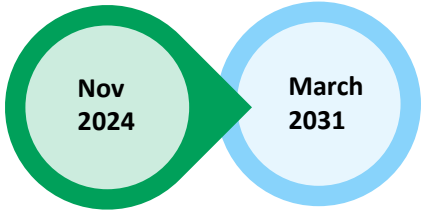
Milestone	Success Measure	Delivery Date	Status
Scope of tender agreed through ENA DDSG sub-group	Scope of tender agreed and documented	September 2024	Completed
Request to tender issued	Tender issued for third parties	October 2024	Completed
Responses reviewed and third-party service providers appointed	Approval that proposed service meets tender requirements and third-party appointed	December 2024	In progress
Delivery of Common data sharing licence for “shared” data and adoption by Cadent	Common “shared” data licence created and adopted	March 2025	Planned

Risks/Mitigations

This initiative is collectively led by ENA. We are under discussions on the most appropriate participation in the initiative from gas networks recognising that the importance of this initiative across all energy networks in the UK.

Digital Spine of the Energy System

Developing the infrastructure to participate in the proposed energy ecosystem support Future Energy endeavours



Digitalisation Themes



Stakeholders who will benefit

Government Authorities and Policy Makers

Energy Industry and Other Utilities

Service we provide today

This is a new action added to the Digitalisation Strategy Action Plan in December 2024

Overview

In 2023 Ofgem published a roadmap to an energy Data Sharing Infrastructure (DSI) to enable the transfer of information critical to develop pathways to Net Zero. In 2024 Ofgem published a consultation for the development of an interim governance framework in support of DSI and the appointment of a Co-ordinator for the oversight and delivery of this governance.

The DSI is a decentralised approach to data sharing but will require Cadent to develop an interface and staging area to send and receive data in support of the Future Systems and Network Regulation Decision (2023).

It is critical that Use Cases for gas data are agreed, prioritised and collaboration undertaken to create [Gas Data Standards](#) which are compatible between Gas Networks to guide the development of data for the DSI.

Service in the future

Development will fall into two sections:

The capability, platforms and systems to support interaction with the DSI

Cadent will need to develop the capability to send and receive data in an agreed format through the DSI. This will require a dedicated Data Sharing Node and integration of this with the target architecture to prepare and deliver data under the DSI process.

Use Cases and alignment of data in support of these:

Cadent and the other Gas Networks are proactively engaging with NESO in their capacity as interim DSI Co-Ordinator to develop use cases for the DSI.

Subsequently, Data Assets to serve these use cases will be reviewed and developed, potentially to a common model.

Project milestones

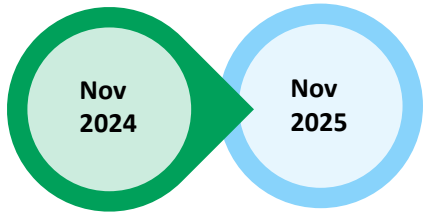
Milestone	Success Measure	Delivery Date	Status
Identify potential Gas Data Use Cases for proposal to NESO	Use cases are agreed across all Gas Networks	March 2025	In Progress

Risks/Mitigations

To avoid truncation of lead times for development of this critical capability, Cadent is engaging with other Gas Networks to develop options for Use Cases for DSI which will be proposed to NESO. NESO will have the decision on which, if any of these Use Case(s) will be prioritised for delivery.

Standards for Gas Data

Collaboration with other Gas Networks to develop a Common Information Model



Digitalisation Themes



Stakeholders who will benefit

Individual and Business Customers

Government Authorities and Policy Makers

Low Carbon Connecting Parties

Energy Industry and Other Utilities

Service we provide today

This is a new action added to the Digitalisation Strategy Action Plan in December 2024

Overview

All Gas Networks have underground assets. The Data Assets relating to these underground assets are the most commonly accessed through the Open Data Portal. Due to system development and implementation following the decentralisation of the Gas Networks, the manner in which these data are held differs substantially between gas network companies. To enable interoperable Data Assets, the Gas Networks have collaborated on an analysis of what a minimum viable data set to represent these data may be, and the differences in how they are held with an aim to develop output for each network which can be freely combined with similar Data Assets from other Gas Networks.

Service in the future

Two critical outputs will be delivered through this activity:

- 1) The development of a standard which defines how Underground Asset data should be provided, with each Gas Network having a mapping document to describe the transformations and source fields required to populate this.
- 2) The process of aligning the data between Gas Networks is complex and will be undertaken in an incremental approach depending on highest priority for the Data Asset in question. This activity will provide key learnings for future alignment of data between Gas Networks, which in turn may provide support to other initiatives such as [DSI](#).

Further common standards for Data Assets will be developed driven by identified needs such as the Use Cases for DSI.

Project milestones

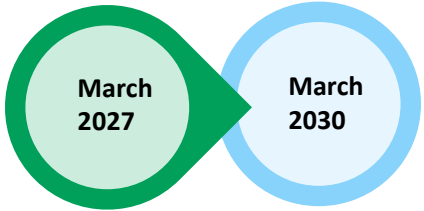
Milestone	Success Measure	Delivery Date	Status
Provision of Underground Asset Metadata	Gas Networks provide Metadata and supporting information relating to Underground Assets	November 2024	Complete
Review and analysis of Metadata	Subject Matter Experts (SME) review and align data from different networks to create a common understanding of terms	December 2024	Complete
Development of an Underground Asset Data standard	Gas network data SMEs create a standard describing the construction of a data asset which will be interoperable between Gas Networks	December 2024	In Progress
Creation of sample data to demonstrate interoperability	Sample data are created and tested to ensure functionality	February 2025	Not Started

Risks/Mitigations

None presently

Expanding Target Data Architecture

Sustain performance and optimise operational efficiency through new data capabilities



Digitalisation Themes



Stakeholders who will benefit

Field Engineer

Future Energy Specialist

Energy Operations Specialist

Asset Investment Specialist

Service we provide today

This is a new action added to the Digitalisation Strategy Action Plan in December 2024.

Overview

This action aims to introduce new capabilities in our organisation building on the foundations created in RIIO-2.

The anticipated outcomes are:

- The ability to present gas assets in a 3D design or engineering scheme with supporting information relating to the location, condition, risks & hazards
- The ability to calculate “what if?” analysis to stress test outcomes and to develop efficient strategies
- To create links between physical gas assets and OT devices to improve data availability for staff and to enable historical sensor data to be available for analysis

Activities taking place now in support of this relate to adoption of reusable API library, and third-party data ingestion standards.

Service in the future

Delivery will be through a number of Proof of Concepts:

- That the Energy Operations team are able to display 3D design of a gas asset and understand location, condition and risk
- That the Investment teams are able to modify scenario parameters and for the model to provide recalculated outcomes with no manual transformation or calculations
- That the Innovation team are able to access and understand historical performance data from OT devices

Project milestones

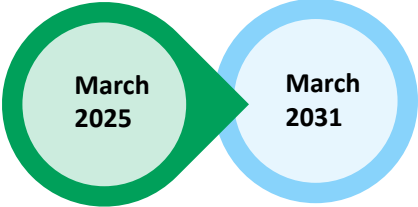
Milestone	Success Measure	Delivery Date	Status
Third Party Data Investment Standards	Assessment of Third Party Data Investment Standards	March 2026	In Progress
Reusable API Library MVP	Creation of a reusable API Library and initial implementation	March 2026	In Progress

Risks/Mitigations

This action point is subject to RIIO-3 investment approval.

Asset Investment Portfolio Management

Digital solutions to visualise asset investment scenarios



Digitalisation Themes



Stakeholders who will benefit

Asset Investment Specialist

Service in the future

This is a new action added to the Digitalisation Strategy Action Plan in December 2024.

Overview
Presently the development of any modelling scenario is manually intensive which restricts efficiency.

With the challenges of climate resilience, Net Zero and whole system planning, there is a need for scenario planning through increasingly sophisticated modelling which can visualise results quickly and with minimal manual intervention.

Activity to undertake discovery of the requirements for delivery will take place prior to the RIIO-3 period as all scenario modelling will require high quality and interoperable asset data as a foundation.

Core asset data will be required as a foundation for the development of Whole System Scenario modelling, Climate Resilience Digital Interface, and this Asset Investment Portfolio Management solution. Development of the different solutions is planned for the RIIO-3 period.

Project milestones

Milestone	Success Measure	Delivery Date	Status
Asset Management Data Discovery	Map out the business processes, high level data elements and how these are transformed into main Asset Investments metrics	June 2025	In Progress

Risks/Mitigations

Our previous Digitalisation Action Plan

June 2024: [Digitalisation Action Plan - June 2024 \(cadentgas.com\)](#)

Dec 2023: [Digitalisation Action Plan - Dec 2023 \(cadentgas.com\)](#)

June 2023: [Digitalisation Action Plan – June 2023 \(cadentgas.com\)](#)

Dec 2022: [Digitalisation Action Plan - Dec 2022 \(cadentgas.com\)](#)

June 2022: [Digitalisation Action Plan - June 2022 \(cadentgas.com\)](#)

Dec 2021: [Digitalisation Action Plan - Dec 2021 \(cadentgas.com\)](#)

Dec 2020: [Digitalisation Action Plan - Dec 2020 \(cadentgas.com\)](#)









Open to You

Open to You

Keeping the conversation flowing

Being open and transparent is part of our culture, we would welcome hearing from our customers and communities to improve the value we deliver. Your comments and suggestions on our Digitalisation Action Plan are valued.

There are multiple ways you can engage with us and share your views and comments

							
Comment on Facebook	Comment on X	Comment on LinkedIn	Comment on Instagram	Comment on TikTok	Email us your feedback	Send us your Feedback by post	Call us on 0800 389 8000