



Cadent

Your Gas Network

Annual *Environmental* **Report**

2023/24



Welcome to Cadent's third Annual Environmental Report for 2023/24. This covers the reporting period from 1 April 2023 to 31 March 2024 and aims to inform our stakeholders, customers, and members of the public about our environmental performance and progress against RIIO-GD2. RIIO-GD2 is a five-year price control period set by Ofgem, the regulatory period runs from April 2021 to March 2026.

The report is prepared in accordance with Ofgem's RIIO-GD2 Environmental Reporting guidance, and data contained within includes all Cadent's networks, unless a specific network breakdown has been stated.

Keeping people warm, while protecting the planet

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We are Cadent

We are responsible for looking after our gas network so we can continue to deliver safe, reliable, affordable, and low carbon energy for years to come. That means continually exploring innovation in sustainable ways across our Networks, and delivering works in an environmentally conscious manner. We deliver the high quality service that 11 million customers expect and transport gas to keep our communities safe, warm and connected.

Who we are

We play a vital role in the UK's gas supply chain by delivering gas from source to consumer. Although we don't produce, own, or sell the gas that flows through our pipes, our skilled teams work tirelessly to ensure that gas is delivered to every corner of our network, taking care of the environment in the process. We don't repair gas appliances, and the cost of our services is included in customers' gas bills, but our role encompasses comprehensive maintenance, monitoring, and significant investment in infrastructure to enhance resilience and efficiency. Safety is paramount, with robust quality assurance systems in place to protect employees, customers, and the environment.

These efforts are all driven by our RIIO-GD2 commitments:

- **Delivering a quality experience for all of our customers and stakeholders** – We promise to provide a service experience of the highest quality to all of our customers, tailored specifically to their needs.
- **Providing a resilient network to keep the energy flowing** – We are focused on delivering a resilient network to keep the energy flowing safely and reliably to all of our customers.

- **Tackling climate change and improving the environment** – We are committed to meeting the Net Zero challenge and supporting the transition to a resilient energy system.
- **Trusted to act for our communities** – We are strengthening our reputation through the actions we take, ensuring our service is transparent, valued, and trusted.
- **Turning insight into action** – We use stakeholder insights to prioritise the actions we take across our business.

Underpinned by our values

Our values guide every decision and action we take to ensure integrity, safety and sustainability in all aspects of our work.

We work together

We drive performance

We take responsibility

We shape the future

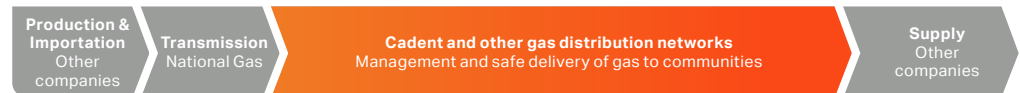
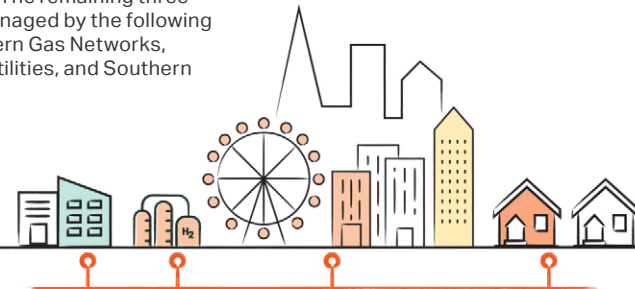


What we do

We place a strong emphasis on innovation to drive future investment, exploring new technologies and methodologies as we continuously strive to improve network efficiency, sustainability, and resilience.

Additionally, National Gas transmission owns and operates the high-pressure national gas network (National Transmission System) that transport gas quick and safely to wherever it's needed in Britain.

We work as one of four Gas Distribution Networks (GDNs). The remaining three are owned and managed by the following companies Northern Gas Networks, Wales and West Utilities, and Southern Gas Networks.



We are Cadent continued

Our networks

We look after over 131,000km of pipeline and almost 50% of Great Britain's gas customers. We deliver our services from 28 operating areas across 4 networks, each with its own geographical and social requirements.

North West

Sitting between the Pennines and the West Coast, encompassing Ambleside in Cumbria at its northernmost tip, and Whitchurch in the south. The gas distributed in the North West network is used by 2.7m homes, businesses, and for industrial purposes; this is far higher than any other gas distribution network in Great Britain.

2.7m

homes and businesses

1,581

colleagues

West Midlands

The only network without a coastline, landlocked amidst neighbouring networks – North West, Eastern and Wales, and West. The network is based in the UK's second-largest metropolitan area of Birmingham and incorporates major cities, large towns, and smaller urban areas.

1.9m

homes and businesses

1,053

colleagues

North London

The network has the largest population of high-rise multi-occupancy buildings in the UK. Whilst it is stacked high, it is also dug deep with many layers of buried infrastructure going back hundreds of years. The network extends from Central London, covering north of the River Thames, to High Wycombe in the West and Southend-on-Sea in the East.

2.2m

homes and businesses

1,537

colleagues

Eastern: East Midlands and East of England

Serving customers across the Eastern region; from Humberside down through Lincolnshire, Norfolk, and Suffolk. The networks also serve the cities of Sheffield in the North, Derby, Nottingham, Leicestershire in the East Midlands, and Cambridge in the South, as well as the northern part of the M25 corridor.

4m

homes and businesses

2,307

colleagues



Leading the way

We've made great progress throughout 2023/24 against our Environmental Action Plan, and protecting the planet is something that we're still firmly committed to.

Leading the way

We deliver an essential service every day to over 11 million homes and businesses in the UK. We understand the impact that our operations and activities have on the environment and climate.

The basis of our environmental focus is documented in our Environmental Action Plan (EAP). This is made up of 30 actions under the following headings:

- › Decarbonising our business operations (11 actions).
- › Reducing our environmental impact (5 actions).
- › Facilitating the low-emissions energy system transition (14 actions).

As we deliver against these 30 actions, we've also worked on developing in other areas of the business, this includes our regional hydrogen development programmes and working closely with supply chain partners.

Future Energy Networks

We are continuing to work closely with Government, industry, and communities to establish great progress in our hydrogen trials across the UK and are pleased to see these going well, particularly around making positive steps with helping to decarbonise industrial and transportation use.

Our regional hydrogen programmes (HyNet, East Coast Hydrogen, Capital Hydrogen, East Midlands Hydrogen, and Hydrogen Valley) are focused on decarbonising industry, facilitating the development of hydrogen production to enable heavy industry, gas-fired power generation, and heavy transport sites to transition away from natural gas and other fossil fuels, with the initial stages of these programmes supported by funding from Ofgem in RIIO-GD2; securing the country's industrial future for years to come.

We know there is no single solution to how we fuel our greener society, and we will need a range of energy options. Our growing biomethane connections are a key part of our strategy to evolve decarbonisation across our network. There are many sources of waste intended for landfill, however this waste can be reused to make biomethane to provide heat for homes and businesses.

So far, our network is connected to 44 biomethane production sites and we are looking to increase these to support the UK's Net Zero targets. We want to give consumers choice in how they power and heat their homes and that is the foundation on which we build our future.

Greener Society

Following the publication of our social and sustainability ambition, Force for Good, and with the Greener Society framework formalised, we are progressing on track against the targets set. This shows we are continuing to take action to become a force for good.

We've made important steps forward so our operational teams have improved spaces to work, and teams can collaborate in a better environment. With our increased investment into property, fleet, and technology over the last twelve months, we have already built several brand-new facilities and continue to do so. Our new fleet including over 400 new electric vans is now on the road and over 93% of our fleet is now electric or hybrid.



Steve Fraser
Chief Executive Officer

We are working on reducing our material resource consumption including single-use plastics, PE pipe, and first-use aggregate, as well as improving our waste management and enhancing plans that maintain and restore biodiversity in the areas where we operate.

We are proud to have hosted several external Biodiversity Benchmark workshops this year to support our environmental action plan commitment to key site environmental enhancement plans and progressing with biodiversity net gain.

Leading the way continued

Positive Action

This year we celebrated recognition with the Carbon Trust's Route to Net Zero Standard, the only certification that recognises an organisation's progress on the journey to Net Zero and climate leadership. Achieving this certification is no small undertaking and follows a rigorous assessment and audit process against defined criteria, with the Carbon Trust assessing Cadent as 'working towards' the first tier of certification recognised as 'Taking Action'.

This certification is a public commitment to the delivery of our Net Zero ambitions – in addition to the audit itself – it also demonstrates a level of independent assurance of data standards, governance, policies, and targets. We are already making significant progress in developing exciting new technology for leakage detection, such as a mobile detection fleet including vehicles, robots, and drones. Other network measurement tools are also being tested to replace the historical method of calculation of leakage with an accurate, real-time measurement-based system.

We're looking forward to another busy, but exciting year progressing our plans across environmental and sustainability projects. To successfully achieve our plans, we're focused on what this means for our operations, technologies, communities, and colleagues to help drive industry-leading environmental performance and benefits for today and to sustain our future.



We are proud to be awarded 'Sector leader' status from The Global Real Estate Sustainability Benchmark (GRESB) for our Environmental, Social and Governance (ESG) performance. We scored 100/100, in an international ESG league table which demonstrates our drive and ambitions to reduce methane emissions by more than the UK's 30 percent target by 2030."



Our environmental responsibilities

Throughout our business of maintaining and upgrading our gas network in support of the UK's Net Zero target by 2050, we are significantly aware of the environmental impacts, and the opportunities to enhance the environment. We work hard to ensure we maintain continuous momentum on our Environmental Action Plan which outlines our ambitions to decarbonise our business, operations, reduce our environmental impact, and facilitate a low-carbon future.

Our Environmental Policy

Our Environmental Policy states our commitments to tackling climate change, preserving natural resources, protecting and enhancing biodiversity, and actively working to reduce our environmental impact.

We aim for high standards of environmental management, working to actively engage employees to do the right thing and make a difference in the communities we serve. Our Environmental Management System is externally audited to ISO 14001:2015 running alongside a rigorous internal audit programme to ensure we maintain compliance and continually improve our procedures and system.

[Environment Policy](#)

Our Environmental Strategy

We have a five-year business strategy document that describes the details behind our Environmental Action Plan and our commitments over the RIIO-GD2 price control period. Our Environmental Action plan aims to drive the transition to Net Zero whilst improving the natural world in support of our Greener Society pillar within our sustainability framework.

[Read more about our greener society goals here](#)

The Sustainable Development Goals (UN SDGs)

The 17 UN SDGs show us what a sustainable future looks like. They provide a framework for businesses to work together with the Government and other partners to tackle climate change and figure inequality on a global scale.

[Read more about the SDGs here](#)

Our mission aligns with the ideals set out in the SDGs. We recently conducted a double materiality assessment to ensure we prioritise the environmental, social, and governance issues related to our operations within our business. We undertook a series of workshops and engagement activities to drive clarity, purpose, and relevance into our sustainability strategy. The results developed a set of double materiality matrices that weighed the importance of an SDG to stakeholders against our ability to impact or be impacted by the topic. We used the results to develop SDGs of high impact and high importance to form the foundation of our Force for Good strategy and the basis of corporate reporting.

These cover topics including:

- › Good health and well-being.
- › Affordable and clean energy.
- › Industry, innovation, and infrastructure improvements.
- › Climate action.

The Support the Goals rating assesses our external statements in supporting any of the goals listed against meeting up to five defined criteria. We maintained our five-star rating in defining our priority goals, declaring measurable targets, sharing how we are taking action to support the goals, sharing performance data, and educating our suppliers about the goals.

[Further information on how we are supporting Sustainability Goal 7 can be found here](#)

[Further information on how Cadent is working towards the SDG can be found here](#)



Our environmental responsibilities continued

Sustainability Benchmarking

We regularly assess our sustainability maturity by benchmarking ourselves against our peers, through several internationally recognised benchmarks. This provides a transparent view to our stakeholders and allows us to develop action plans to drive improvements.

We have been assessed against three leading Environmental, Social, and Governance (ESG) benchmarks in 2023/24. These include The Global Real Estate Sustainability Benchmark (GRESB), Sustainalytics, and Morgan Stanley Capital International (MSCI). Results are currently not finalised for 2023/24 but are expected to follow the very positive results of 2022/23, reflecting our commitment to ESG and creating a positive social impact. We were particularly proud to be awarded 'Sector leader' status by GRESB in our previous submission in which we were able to demonstrate strengths in key areas:

- › The majority of our fleet is now zero-emission vehicles – either electric or hybrid.
- › Less than 3% of our waste went to landfill the previous year.
- › 45 biomethane plants are now connected to our network.
- › We have and continue to procure 100% renewable energy.

We continue to report and review different types of ESG benchmarking, demonstrating to all our drivers our continued push for environmental improvements and the external recognition of our sustainability credentials.

You can read more about our Sustainability credentials and benchmarking scores [here](#)

Fuel a thriving world

Where we help people stay warm and independent in their homes, no matter their personal circumstances

Easier
Warmth



Where the potential to thrive is inclusive, within Cadent, our supply chain and our communities

Fairer
Opportunities



Where we are driving the transition to Net Zero, whilst improving the natural world

Greener
Society



Our environmental responsibilities continued

Cadent's Net Zero Roadmap

We are fully committed to our role in tackling climate change, seeing ourselves as an enabler for decarbonisation, with the future of gas becoming an exciting part of a low-energy emissions solution.

Our Net Zero roadmap illustrates our path to decarbonising our business for future generations, taking into consideration carbon emissions, biodiversity, and waste and facilitating the flow of alternative fossil fuels.

We know that as we grow, our emissions will increase and that's why we're aligned to becoming Net Zero by 2050 based on our 2019/20 baseline, no matter how much our company expands.

The delivery of Net Zero by 2050 requires an unprecedented amount of change, investment, and collaboration. Hydrogen will play an important role as an energy source for industry, transport, power generation, and heating buildings and homes, that's why we're acting now.

Our path to decarbonising our business operations for future generations

Solving the problem means identifying it first. In 2019/20 Cadent emitted 1.66m tonnes of greenhouse gas emissions (Scope 1 and 2).

Our own Net Zero strategy is split into three distinct areas. 1) Decarbonising our business operations, 2) Reducing our environmental impact, 3) Facilitating the low emissions energy system transition. Our Environmental Action Plan states our ambition and targets for our current price control period, R10-GD2.

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The delivery of Net Zero by 2050 requires an unprecedented amount of change, investment and collaboration. Hydrogen will play an important role as an energy source for industry, transport, power generation and heating buildings and homes, that's why we're acting now.

Moving faster

Carbon

- Procure 100% certified renewable energy
- Operate a fully electric company car scheme
- Zero emissions first responder vehicle fleet across all our networks
- Reduce all utility energy consumption by at least 10% by 2024
- Deliver a 15% reduction in business mileage emissions intensity
- Work with our suppliers to extend the measurement of, and continually reduce, Scope 3 indirect emission

Biodiversity

- Baseline biodiversity surveys c1000 sites, create a site by site biodiversity opportunity map
- Demonstrate 30% biodiversity net gain by 2030 across the networks

Construction

- Introduce Net Zero construction sites from 2023

Waste

- Minimise the use of first time aggregate, with less than 10% backfill in the North West and East of England, and 5% in the West Midlands and North London
- Less than 5% of our waste from excavations will be sent to landfill

Shrinkage

- Outperform our reputational shrinkage incentive target

Hydrogen

- Launch a Hydrogen Skills Academy and a hydrogen education programme by 2024
- Put pace into the adoption of hydrogen vehicles from 2025
- Install hydrogen-ready appliances by 2026 or sooner
- Publish plans to demonstrate heat decarbonisation of whole communities by 2025

Scaling up

- We will reduce our methane emission rates by more than the UK's 30% target by 2030
- We will demonstrate hydrogen at scale through a range of initiatives by 2035 such as:
 - Deliver the first scaled hydrogen blending facility from 2025
 - Deliver the UK's first 100% hydrogen pipeline by 2027
- Enable 5GW of hydrogen production in our region by 2030

Delivering our promise

Our ambition is to make hydrogen a safe, fair and reliable choice for consumers.

By 2050 we will reach

Net Zero

— Path to Net Zero by 2050
 - - - - - Business as usual operations
 * All targets by 2026 unless stated

2026

2026

2030

2036

2050

Meaningful carbon offsetting of residual business carbon footprint (excluding shrinkage)

Net Zero emissions (excluding shrinkage)

43% reduction in Scope 1 & 2 emissions (including shrinkage)

R10-3 Price Control starts

R10-4 Price Control starts

R10-5 Price Control starts

Key environmental performance indicators







Key performance indicators on our Environmental Action Plans



	Environmental Impact and KPI	2023/24 Performance	More information
Contribution to energy system decarbonisation	Annual addition of low carbon and renewable energy capacity connected to the network.	19,431 scm/h	Page 19
	Annual investment in ongoing innovation activities that are primarily supporting decarbonisation and/or protecting the environment.	£13.7m (on innovation across the Future of gas programme activities). This does not include HyNet phase II costs, as these are under other funding mechanisms (i.e. not innovation funded).	Page 20
Climate Change impacts	Long-term greenhouse gas reduction target, aligned with a science-based target methodology.	SBTi -42.5% reduction against emission baseline by 2036.	Page 22
	Annual change in business carbon footprint (excluding shrinkage) in comparison to RIIO-GD2 target.	0.6% reduction in Scope 1, 2 and 3 emissions (excluding Shrinkage) compared to 2022/23.	Page 22
	Annual change in total shrinkage.	2.9% reduction compared to 2022/23 (35,814.25 tCO ₂ e reduction).	Page 27
Resource use and waste	Annual total waste (office, network depots, mains replacement).	671,245.00 Tonnes.	Page 34
	Waste disposal routes (office, network depots, mains replacement).	0% of total waste reused. 97.74% of total waste recycled. 0.17% of total waste 'other recovery' (including diverted from landfill by incineration). 2.10% of total waste landfilled.	Page 34
Sustainable Procurement	The proportion of suppliers meeting our environmental supplier code or equivalent.	91% by spend value.	Page 33
Local Environment	Annual investment in schemes to enhance or restore local environmental quality.	£0m	Page 36
	Land areas being treated in schemes to enhance or restore local environmental quality.	28 feasibility baseline surveys carried out: 12.45 (Ha) and 45098.19 (M2).	Page 36
	Net change in biodiversity units from network development projects granted planned consent in 2023/24.	None reported in 2023/24 (3 projects currently undergoing planning consent with 10% BNG required in 2024/25).	Page 39
	Number of reportable environmental incidents to the Environment Agency or Local Authority.	0	Page 40



Environmental Action Plan commitments

Our Environmental Action Plan explains how we will take responsibility and limit the environmental impact of our networks, and business operations. It also supports how we will plan for a Net Zero future during the RIIO-GD2 price control period.

Table 1 – Status update on EAP commitments

EAP Commitment	Description and the expected benefit	Target year	EAP commentary	RAG Indicators	Status update
Part 1: Decarbonising our business					
1. Accreditation of environmental goals	We will regularly review our longer-term targets beyond RIIO-GD2 and pursue accreditation of our goals and programmes from the Science Based- Targets initiative.	2025/26	<ul style="list-style-type: none"> Regularly review and report internally and externally our Business carbon Footprint against the SBTi target for Cadent. Work with The Carbon Trust to review and monitor Cadent's Net Zero pathway based on the SBTi target. 		SBTi have made a decision to pause current and future commitments that Cadent was a part of. In the meantime, Cadent has pursued external certification of goals via The Carbon Trust's Route to Net Zero standard, and certifying emissions to the Greenhouse accounting standard ISO14064-3. In March 2020, the SBTi announced a review of their methods for the gas and oil industry.
2. Shrinkage reduction	We will achieve and strive to outperform our reputational shrinkage incentive target for RIIO-GD2. We will report on progress and the specific actions we have taken to achieve this in our Annual Environmental Report.	2025/26	<ul style="list-style-type: none"> Pressure maintenance and Monoethylene glycol (MEG) leads are maintaining performance and a focus on two key areas for shrinkage reduction. 		Performance against reputational output incentive targets is on track for outperformance based on current performance forecasts.
3. Theft of gas	As one of the components of shrinkage, we will maximise the benefits to customers and stakeholders from the theft of incentives, and our ambition is to recover at least £8m over the RIIO-GD2 period.	2025/26	<ul style="list-style-type: none"> Implement additional MPRN management team to aid proactive detection of theft of gas through investigation of wider industry reporting. Proactive investigations, for theft, now being conducted. Set up gas working group, led by Cadent with the other GDNs, Crimestoppers, Gas Suppliers and Xoserve. 		Currently recovered £3.75 million pounds in revenue from theft. 3824 reports of theft investigated since April 21 of which 2442 cases of theft stopped. 382 theft cases currently being investigated. c30,000 MPRNs being investigated as potential theft with an opportunity to recover costs of unbilled gas.
4. Energy efficiency	We will reduce all utility energy consumption by at least 10% by 2024.	2023/24	<ul style="list-style-type: none"> Based on a baseline from 2019/20 Cadent has reduced our overall gas and electricity consumption by 38.6%. 		Action achieved.
5. Renewable energy	We will procure 100% certificated renewable energy to meet our energy needs by 2026.	2025/26	<ul style="list-style-type: none"> In 2023/24 we maintained that both our gas and electricity procured contracts are 100% renewable energy sources, supported by Renewable Energy Guarantees of Origin (REGO) and Renewable Gas Guarantee of Origins (RGGO) certification. 		Action achieved.
6. Business Mileage	We will deliver a 15% reduction in our business mileage emissions intensity through RIIO-GD2.	2025/26	<ul style="list-style-type: none"> To date we are at a 42.3% reduction from the 2019/20 baseline year. 		Action achieved.

 Progress against the implementation milestone is on track
 Progress is delayed but likely to be achievable before the end of the price control period

 Progress against milestones is at significant risk and highlight likely to be missed
 This action plan is now not applicable/ was not started/ or not funded at the start of the RIIO-GD2 price control

Environmental Action Plan commitments continued

EAP Commitment	Description and the expected benefit	Target year	EAP commentary	RAG Indicators	Status update
7. Vehicle Fleet	We will target a zero emissions first responder vehicle fleet across all our networks by the end of RIIO-GD2.	2025/26	<ul style="list-style-type: none"> 472 vans to date have been issued and we have installed 330 Home chargers for our engineers. 	●	Review to take place and decision on how we proceed with the remained of our first responder fleet.
8. Embedded carbon in pipes and fittings	We are targeting a reduction in the carbon intensity of our pipes and fittings throughout RIIO-GD2, by delivering the recommendations of a report published by 31 March 2021, setting out the opportunities and barriers to reducing the carbon intensity of PE pipe and fittings.	2025/26	<ul style="list-style-type: none"> Embodied PE pipe is measured in our Scope 3 emissions. Reduce carbon by Enabling Logistics, CMOs and LDPs to re-use part-coils. Reduce carbon by recycling waste PE Pipe. 	●	<p>Regular engagement with PE pipe suppliers and the reporting of data through the Carbon Reporting Tool.</p> <p>Suppliers moving to the use of renewable energy for manufacturing, production, and transportation at Cadent e.g.</p> <ul style="list-style-type: none"> Changing lighting to LED and installing movement sensors where safe to do so. Reduced operational compressed air pressure and established monthly compressed air leaks survey monthly.
9. Work with suppliers to reduce emissions	We will work with our suppliers to extend the measurement of, and continually reduce, Scope 3 indirect emissions.	2025/26	<ul style="list-style-type: none"> The Supply Chain Sustainability School is our preferred partner to facilitate engagement. Metrics agreed, and monthly reporting was initiated. Cadent is also Co-chair – of the Climate Action Group on Skills & Learning. The carbon tool is now reportable monthly by general suppliers reporting their carbon emissions via this Tool. 	●	84 suppliers enrolled on the Action Sustainability Tool. Continued progress to plan.
10. Measuring the carbon intensity of major projects	We will develop our methodology to measure and report on the carbon intensity of major construction projects.	2025/26	<ul style="list-style-type: none"> Full Life Cycle Analysis carried out against baseline design and reduced carbon intensity designs. Current Lifecycle Analysis predicts a potential reduction of up to 77.5% of carbon through the 40 year operation life of the site. Concept Design Phase is complete and has demonstrated what can be achieved through the Carbon Life Cycle Assessment (LCA) approach - allowing low carbon decisions to be made at the earliest opportunity. 	●	We will engage a Construction Main Works Contractor to further develop the proposal and explore any additional innovative construction methodologies that have the potential to reduce embedded Carbon further.
11. Carbon offsetting	We will offset all residual unavoidable emissions to become a certified Net Zero company.	N/A	<ul style="list-style-type: none"> Following strategic review and due to lack of maturity of the cost-benefit analysis, this initiative is not being progressed during RIIO-GD2. 	●	N/A

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Environmental Action Plan commitments continued

EAP Commitment	Description and the expected benefit	Target year	EAP commentary	RAG Indicators	Status update
Part 2: reducing our environmental impact					
12. Waste from excavations	During RIIO-GD2, less than 5% of our waste from excavations will be sent to landfill.	2025/26	<ul style="list-style-type: none"> 1.96% of spoil from excavations was sent to landfill in 2023/24. 	●	Continued progress to plan.
13. Minimising use of first-use aggregate	During RIIO-GD2, less than 10% of our backfill will be first-use aggregate in the North West and Eastern (East of England and East Midlands) and 5% in the West Midlands and North West.	2025/26	<ul style="list-style-type: none"> All networks met this target during 2023/24. 3.79% North West. 2.93% East of England. 4.78% West Midlands. 0.26% North London. 	●	Continued progress to plan.
14. Sustainable Procurement	In our Annual Environmental Report, we will include a summary of environmental and sustainability criteria we have used in all significant procurement events.	2025/26	<ul style="list-style-type: none"> Continuously covered through PPQ (sustainability of a contractor) and Supply Chain Sustainability School onboarding for suppliers, including the tendering process. 	●	Continued progress to plan.
15. Reducing our employee's carbon footprint	We will work with our employees to help them, and their communities deliver a reduction of 5,000 tonnes of CO ₂ e a year by the end of RIIO-GD2.	N/A	<ul style="list-style-type: none"> Following strategic review and due to lack of maturity of the cost-benefit analysis, this initiative is not being progressed during RIIO-GD2. 	●	N/A
16. Key site environmental enhancement plan	We will publish our key site environmental enhancement plans as part of our environmental and sustainability annual reports before the start of RIIO-GD2. We will then update these plans, and report on performance and delivery annually through the RIIO-GD2 period. We will undertake a review of external biodiversity benchmarking to ensure that our action plans are robust and confirm these externally assessed standards.	2025/26	<ul style="list-style-type: none"> 28 Surveys completed during 2023/24 across our networks and key operational sites. 82 surveys completed since 2020. Full technical review of internal management procedures, completed in 2023/24. 	●	Key site environmental enhancement plans in development for 5 flagship sites undertaking external benchmarking next summer.

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Environmental Action Plan commitments continued

EAP Commitment	Description and the expected benefit	Target year	EAP commentary	RAG Indicators	Status update
Part 3: Facilitating the low emissions energy system transition					
17. Review of distributed gas entry arrangements	We will review an industry review of distributed entry gas commercial arrangements to establish methodologies that are robust, sustainable, and scalable, with the ambition of presenting initial change proposals to Ofgem before the commencement of RIIO-GD2.	2025/26	<ul style="list-style-type: none"> Submission of revised connection charging methodology to Ofgem. 	●	Cadent has led an industry wide consultation to change our approach to connection charging for distributed entry gas connections, and reached agreement with the other GDNs to introduce a "High-Cost Cap" mechanism to socialise a large part of any entry reinforcement costs. Cadent has progressed, submitting a formal funding Re-opener to Ofgem alongside a draft change to the connection charging methodology, and have received positive feedback on both. We are hoping that the changes, which will unlock funding to support removing network capacity constraints, will be implemented in 2024.
18. Funding for entry gas reinforcements	We will establish and utilise a flexible funding regime for entry gas reinforcements, supported by an appropriate uncertainty mechanism.	2025/26	<ul style="list-style-type: none"> Submission and agreement to a Heat Policy Re-opener. 	●	Cadent has led an industry wide consultation to change our approach to connection charging for distributed entry gas connections, and reached agreement with the other GDNs to introduce a "High-Cost Cap" mechanism to socialise a large part of any entry reinforcement costs. Cadent has progressed, submitting a formal funding Re-opener to Ofgem alongside a draft change to the connection charging methodology, and have received positive feedback on both. We are hoping that the changes, which will unlock funding to support removing network capacity constraints, will be implemented in 2024.
19. Entry gas customer and stakeholder forum	We will establish an Entry Gas Customer and Stakeholder Forum to allow customers and stakeholders to raise issues, for the gas Network to test issues we have identified, to identify and action knowledge sharing and establish and maintain an activity schedule of framework changes.	2025/26	<ul style="list-style-type: none"> The regular forums continue to be held quarterly and remain as channels for innovation ideas and key topics that are impacting the biomethane community of developers, operators and GDNs. 	●	The Entry Customer Forum is established and has been running for a number of years now supported by the Energy Network Association. The GDNs and National Gas will be leaving membership of the ENA at the end of 2024. A new entity is being set up within the Institute of Gas Engineers and Managers (IGEM) to organise and drive collaborative work amongst the gas networks of which the Entry Customer Forum will be a key channel for innovation ideas and key topics for the industry.
20. Entry gas connections methodology	We will establish an Entry Connections Standards Methodology statement and a supporting voluntary governance arrangement to enable customers and stakeholders to propose value-adding improvements.	2025/26	<ul style="list-style-type: none"> This is being driven through the Entry Connections Technical Working Group through the Energy Network Association. The Working Group continue to drive standardisation and improve the connections process and operation of biomethane plants to the benefit of all parties. 	●	Standardisation for site acceptance testing, gas quality assessments and metering calibration have been a focus on the Entry Connections Technical Working Group. This group will be transitioning to the Institute of Gas Engineers and Managers (IGEM) to drive standardisation and connection process improvements along with the operation of biomethane plants to benefit the biomethane industry as a whole.

● Progress against the implementation milestone is on track
 ● Progress is delayed but likely to be achievable before the end of the price control period

● Progress against milestones is at significant risk and highlight likely to be missed
 ● This action plan is now not applicable/ was not started/ or not funded at the start of the RIIO-GD2 price control

Environmental Action Plan commitments continued

EAP Commitment	Description and the expected benefit	Target year	EAP commentary	RAG Indicators	Status update
21. Off gas grid communities	We will conduct a trial to identify small communities where the gas network can be extended at a low cost.	N/A	<ul style="list-style-type: none"> Following strategic review and due to lack of maturity of the cost-benefit analysis, this initiative is not being progressed during RIIO-GD2. 	●	N/A
22. Off gas grid communities	We will establish a community connection support service to identify and advise communities that could economically connect to the gas grid.	N/A	<ul style="list-style-type: none"> Following strategic review and due to lack of maturity of the cost-benefit analysis, this initiative is not being progressed during RIIO-GD2. 	●	N/A
23. HyNet	Given a direction from Government and/or Ofgem, we will submit proposals to create a HyNet system operator function and to design and construct the hydrogen transformation network with a supporting commercial and operational framework, to meet customers and stakeholder requirements for hydrogen in the North West.	2025/26	<ul style="list-style-type: none"> The Project continues to progress towards the end of FEED and the DCO Submission using the information gained through the statutory consultation. Head of terms for Hydrogen supply has been progressed by Vertex Hydrogen Production with key industrial users. 	●	The Front End Engineering Design (FEED) stage of the project was completed earlier this year. A decision was taken to delay the Development Consent Order (DCO) submission until March 2025, to enable us to ensure we had all the information to support our submission. We are now seeking to submit a bid under the new Hydrogen Transport Business model (HTBM) to fund the next stages of the project (pre-construction and construction activities). At amber status due to uncertainty around the future funding of this project (which is a similar issue for other hydrogen infrastructure projects across the UK).
24. Hydrogen blending	We will ensure an efficient and effective hydrogen blending regime can operate at the earliest opportunity, with the end consumers protected financially by paying for the energy they received, and from unsafe gas blends.	2025/26	<ul style="list-style-type: none"> The work has been completed at Winlaton and we are progressing the work to complete the impact of blended gases on industrial use. 	●	Following the government's decision in 2023 that our Hydrogen village conversion project was not to proceed, we have subsequently closed down the project and removed our Hydrogen experience centre from the village of Whitby in Ellesmere Port. We are now seeking to provide support to the SGN led project in Fife (H100), which is a hydrogen neighbourhood conversion project, as DESNZ have stated this project will be used to support their policy decision making over the role of hydrogen for heating.

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Environmental Action Plan commitments continued

EAP Commitment	Description and the expected benefit	Target year	EAP commentary	RAG Indicators	Status update
25. Hydrogen conversion	We will support Government plans for large-scale trials of Hydrogen conversion.	2025/26	<ul style="list-style-type: none"> The bid was submitted to DESNZ and Ofgem on 30 March 2022 outlining our proposal to convert the village of Whitby to hydrogen using a repurposed gas network. We continue to lead all but one of the collaborative projects that supports work across the gas networks. DESNZ has since decided not to proceed with Whitby. 	●	Following the government's decision in 2023 that our Hydrogen village conversion project was not to proceed, we have subsequently closed down the project and removed our Hydrogen experience centre from the village of Whitby in Ellesmere Port. We are now seeking to provide support to the SGN led project in Fife (H100), which is a hydrogen neighbourhood conversion project, as DESNZ have stated this project will be used to support their policy decision making over the role of hydrogen for heating.
26. Emergency/ backup network role	We will ensure that the network can support increasing use in emergency backup-up, and peak conditions, serving and protecting the whole energy system.	2025/26	<ul style="list-style-type: none"> This relates to emergency cover for Independent Gas Transporters (IGTs), a service which we provide under contract. IGTs make up circa 14% of the total meter points in the UK and are growing around 7% per annum. Cadent provides both emergency call handling and emergency response under contract. There are economies of scale by Cadent providing the service. 	●	Cadent continue to provide both the emergency call handling and emergency response under contract for the Independent Gas Transporters (IGTs). There are economies of service for Cadent to provide this service. We serve and protect the whole energy system further increasing our security of supply by connecting distributed entry connections from renewable gas (biomethane) produced within the UK.
27. Decarbonisation of heating	We will promote and build up the evidence case that supports the least cost, least disruptive options for our customers and decarbonise their heating.	2025/26	<ul style="list-style-type: none"> We continue to deliver a defined Advocacy Plan that establishes the role of hydrogen in heat. 	●	We have published reports setting out the economic benefits of hydrogen for heat could have for the UK economy, based on independent analysis from PWC, and separately on the future role the gas network will play in supporting the delivery of Net Zero. Furthermore, we commissioned Imperial College to conduct an independent whole systems assessment of a full electrification pathway and a pathway where hydrogen for heat played more of a role. The report, now published by Imperial, concluded the hydrogen pathway saved ~£5bn/year compared to full electrification, largely through reductions in the amount of investment in the electricity network that would be needed. Work also continues with regulators to demonstrate the technical and safety elements of a hydrogen conversion.
28. Evidence for electrification	We will ensure all evidence for alternative options, including the wide-scale electrification of heat are challenged and based on robust analysis and information.	2025/26	<ul style="list-style-type: none"> Publication of the Hydrogen Vision report, with colleagues in the ENA. Work also continues a report to set out the energy system resilience benefits of hydrogen and the economic value of hydrogen for heat brings. 	●	We recognise the electrification of heat will have a material role to play in delivering Net Zero. We argue that this is delivered alongside a range of other technologies, including hydrogen, based on reasons of customer choice, heterogeneity of demand and the technical and economic challenges full electrification of heat would present. These arguments, and the evidence supporting them, have been set out in our advocacy materials, as above. In addition, we continue to seek opportunities to work across the sector on whole system approaches to decarbonisation in various sectors, and are supporting the newly formed NESO with insight and analysis that helps them understand the role gas could play in the future energy mix.

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Environmental Action Plan commitments continued

EAP Commitment	Description and the expected benefit	Target year	EAP commentary	RAG Indicators	Status update
29. Decommissioning plans	We will develop robust decommissioning plans and protocols to protect consumers during the transition, following the publication of the detailed strategy and programme to install alternative systems.	2025/26	<ul style="list-style-type: none"> We are refining models to incorporate property, postcode, and asset level analysis to understand the viability of conversion at a granular level and understand the likelihood and confidence of whether an asset for example will convert from methane to hydrogen, continue supplying methane or decommission. 	●	We continue to develop our modelling capabilities to understand the impact of various energy scenarios. This is helping us to ensure our investment plans are robust under multiple future scenarios.
30. Annual Environmental Report	We will report annually our environmental performance, including progress against the actions in our RIIO-GD2 EAP, and any additional regulatory requirements. We will seek stakeholder feedback to continually improve our reporting through RIIO-GD2.	Annually	<ul style="list-style-type: none"> Publication of Cadent's Annual Environmental Report on Cadent's website. 	●	2023/24 report published.

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Environmental Impacts

Force for Good

Our purpose is to keep people warm while protecting the planet by making things 'easier, fairer and greener' for those living and working in our networks. Whilst the Government's pledge is to achieve Net Zero before 2050, we are committed to achieving this milestone sooner by upgrading our pipe network, helping to restore the UK's natural peatland through employee volunteering, and finding ways to capture methane before it enters the Earth's atmosphere. Waste management is a key priority, and we are reducing all single-use plastic and making it even easier for our employees and partners to recycle, cutting the percentage of operational waste that goes into landfill. We are passionate about preserving the natural environment, working towards the Wildlife Trust's Biodiversity Benchmark by improving biodiversity at our sites and working with local communities to support nature regeneration in areas impacted by our construction work.

Environmental Risks and Controls

Through the Environmental Management System, we identify our environmental impacts, risks, and associated controls to mitigate as far as practicable the wider impact of our operations and activities. By identifying Principal Risks through our internal Risk Management System, the Board will regularly review and assure the risks and is committed to protecting and developing our reputation and business interests and has overall accountability for risk management within the business. Such risks include extreme weather events, climate change, impacts and loss of biodiversity. Through our Environmental Action Plan and our Force for Good strategy, we are set out to reduce our wider environmental impacts through RIIO-GD2 and beyond.

Sustainability Committee

Provides scrutiny and oversight of the scope, adequacy, and effectiveness of the company's approach to setting and delivering against its sustainability strategy. It also monitors environmental key performance indicators and progress against our RIIO-GD2 Environmental Action Plan and recommends environmental performance measures for approval by the Remuneration Committee. This year the Committee has focussed on key aspects of the company's sustainability strategy and performance, as well as monitoring progress against the RIIO-GD2 Environmental Action Plan, the social impact delivered through the Force for Good Framework and reviewing and recommending environmental performance measures to the Remuneration Committee for approval.

Our Greener Society goals

By 2022

We will operate a **fully electric company car scheme** and a zero emissions first responder vehicle fleet

By 2026

We will **procure 100% certified renewable energy** to meet our energy needs

We will be **accredited to The Wildlife Trust Biodiversity benchmark** across all our key sites

We will minimise the use of first time aggregate and ensure that **less than 5% of our waste** from excavations is sent to landfill

By 2030

We will **reduce our methane emission rates** by more than the UK's 30% target

By 2035

We will **demonstrate hydrogen at scale** through a range of initiatives

Key highlights of the year

Ensuring Cadent's Positive Social and Environmental Impact:

- Monitoring performance of commitments under Force for Good Framework.
- Monitoring performance of customer vulnerability strategy.

Strategic guidance:

- Review our carbon offsetting strategy.

Sustainable Operations:

- Reviewing implementation of the Environmental Action Plan.

Risk and assurance:

- Oversight of climate change-related risks and associated controls.
- Management of challenges arising from water ingress incidents.

Sustainability internal audits:

- Received reports on internal sustainability audits.

Performance targets:

- Approved environmental-related performance targets for 2024/25 for recommendation to the Remuneration Committee.

Decarbonisation

Biomethane and other low-gas connections

We continue to work with our customers to connect new green gas supplies to our network.

The addition of biomethane into the gas grid will help the UK minimise its carbon footprint and use of unsustainable fossil fuels, whilst increasing the security and diversity of energy supplies. The connection of two further biomethane plants during 2022/23 has demonstrated a buoyant market and growth following the extension of the Green Gas Support Scheme (GGSS) out to 2028. This is further supported by 186 enquiries received during 2023/24, and 36 biomethane connections studies this year.

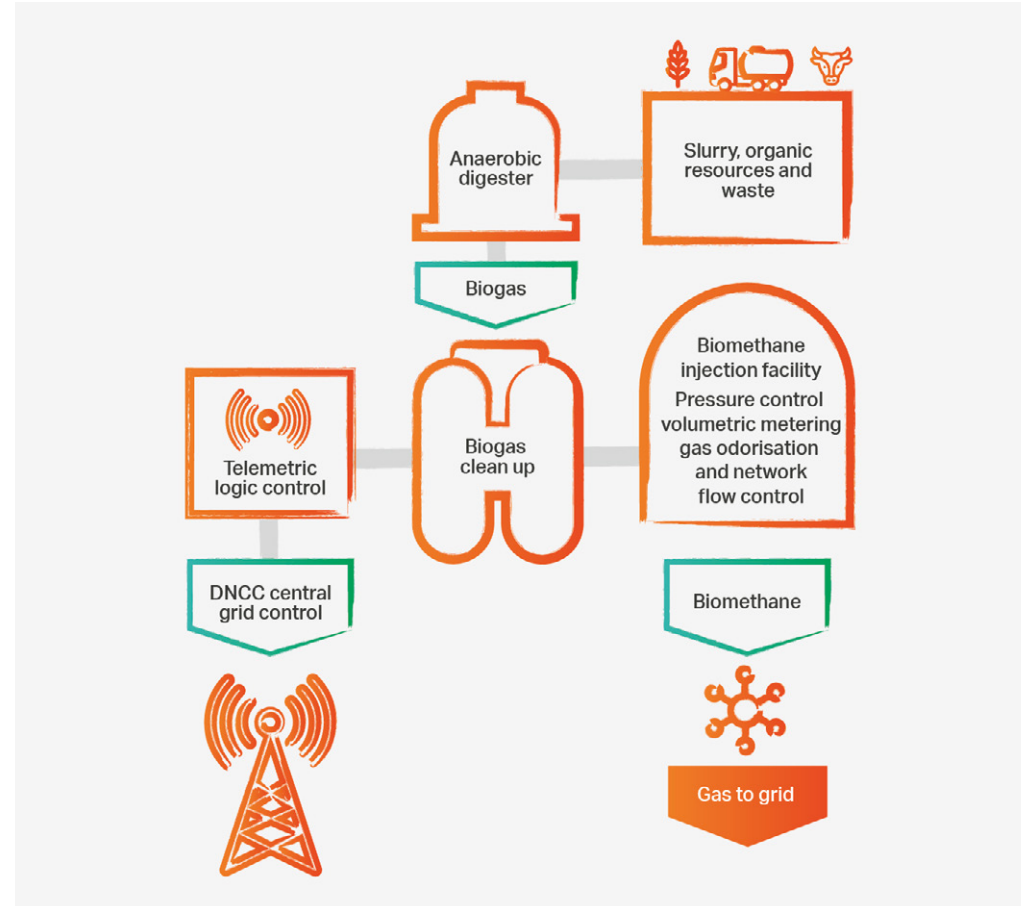
Green Gas connection process

The production of biogas is performed by the producer, using anaerobic digestion on the Cadent networks.

The biogas then goes through an upgrading process to remove any CO₂ and other contaminants present to leave a near pure source of methane for gas injection. Propane may be required to be added by the producer to raise the energy content of the gas. The biomethane must then be sold to a shipper before it is injected into the grid. Ofgem can provide a list of licensed shippers. Once the biogas has been upgraded to biomethane, it will be transferred to our network entry facility. From here, the gas will be metered, and the quality monitored. An odorant called Mercaptan will be injected to give the characteristic 'gas' smell.

Once these stages have been completed, the gas can be injected into the distribution network for transportation.

We continue to work collaboratively with the Anaerobic Digestion (AD) community and the Gas Distribution Networks through the 'Customer Entry Forum' to drive standardisation for biomethane connections. Through this forum the biomethane community expressed one of the key barriers to connecting is the cost of reinforcement with the cost recovered from a single 'triggering' party rendering many projects uneconomically viable. An industry review of these pricing arrangements is in progress.



Decarbonisation continued

Engagement events, stakeholders, and best practice

The Green Gas Support Scheme (GGSS) has provided the market with a sustainable financial and environmental future for biomethane to be injected into the gas grid as a direct replacement for natural gas.

We continue to work on innovative ways to unlock capacity within constrained periods of the gas network to take biomethane during the low demand summer months. These include recompression, smart pressure control and remote automated flow to give us more control and change the way we operate from a distribution network to a system operator.

We are unlocking further capacity within the East Midlands network through the Innovation funded project Optinet, where we aim to optimise network pressures through Recompression and smart pressure control. The purpose of the Optinet project is to prove the concept of a network solution that can be replicated in capacity-restricted areas to facilitate the injection of smaller distributed entry points. This project is in the final phase and will be commissioned in October 2024. It has already provided valuable learnings to develop a sustainable cost-effective deployable solution across our footprint. We are looking at deploying the next three assets within the East of England area. Biomethane will play a vital part in the transition to a sustainable future, endorsed by the government and fully supported by the Anaerobic Digestion industry.

Table 2 – Connections activity for low carbon sources of gas

	Unit	2021/22	2022/23	2023/24
Biomethane connections				
Enquires	Number	140	201	186
Connection studies	Number	35	36	36
The capacity of connection studies	SCMH	7,355	9,055	6,030
Connections	Number	5	2	2
Capacity connected	SCMH	1,700	0	900
Volume (energy value) of biomethane injected	GWh	1,632	1,829	2,551
Average monthly flow rate (all connections)	SCMH	17,215	19,698	19,431

Table 3 – Other green gas

	Unit	2021/22	2022/23	2023/24
Enquires	Number	0	0	0
Connection studies	Number	0	0	0
The capacity of connection studies	SCMH	0	0	0
Connections	Number	0	0	0
Capacity connected	SCMH	0	0	0
Volume (energy value) of other green gas injected	GWh	0	0	0
Average monthly flow rate (all connections)	SCMH	0	0	0

Decarbonisation continued

Innovating for decarbonisation and protecting the environment.

Helping to Decarbonise Industry and our networks

Cadent has been championing the role hydrogen can play in achieving the UK's Net Zero ambition. We recognise its versatility will aid the security and resilience of the UK's energy supplies. Hydrogen Infrastructure can actively support industry and we believe its use to decarbonise heat optimises the use of our existing infrastructure and provides customers with choice.

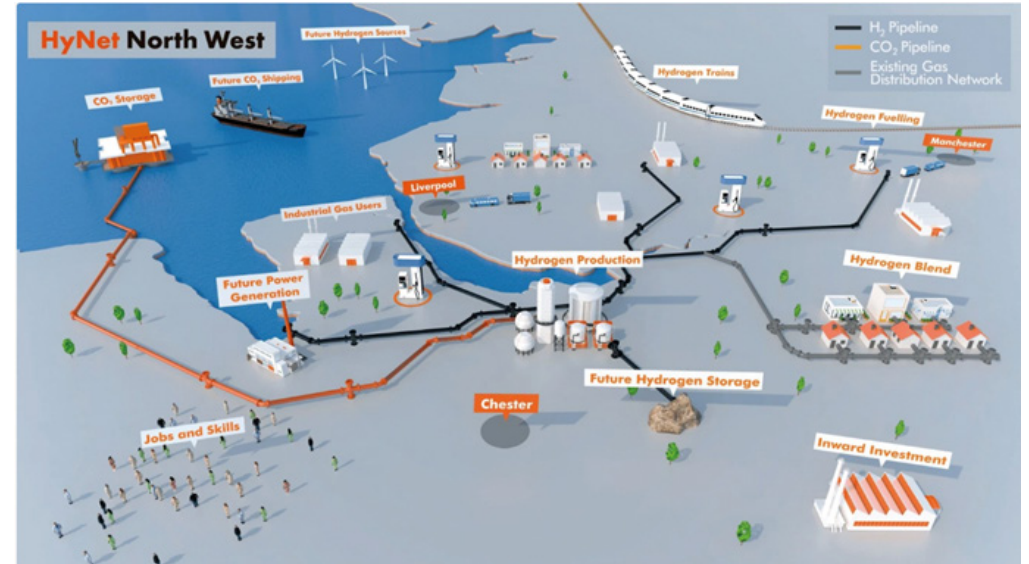
Throughout 2023/24, there has been a lot of activity across the energy policy landscape. This has included the Government setting up a new business model for hydrogen pipeline projects, like HyNet to be funded. They also confirmed their support for hydrogen blending into the gas network, to enable hydrogen production at scale.

Cadent has led in gathering evidence to support the use of Hydrogen as a blend in our networks, and in conversion, as we seek to decarbonise the heat networks that are fuelled by the gas we supply. The following are updates for two of our flagship projects that are contributing to the low-carbon transition.

1. HyNet Phase II – Hydrogen Pipeline

HyNet continues to be the UK's flagship industrial decarbonisation project incorporating the full value chain of the future hydrogen economy. It includes hydrogen production, carbon capture and storage, hydrogen pipelines, hydrogen storage and the fuel switching of industry and power generation. The HyNet project is split into several phases and relies upon a series of supportive business models. Over the year the first hydrogen production plant has been supported, along with the CO₂ infrastructure. We will bid for the hydrogen pipeline and hydrogen storage into a competitive process in 2024. Throughout the year, we have continued to lead the development of the detailed design and consenting for the hydrogen pipeline. The Developmental Consent Order (DCO) is to be submitted in March 2025.

More information about HyNet can be found [here](#).



Decarbonisation continued

2. HyDeploy (Hydrogen Blending)

Cadent has continued to champion the role of Hydrogen Blending as a means of increasing the growth of hydrogen production in the UK and having an immediate impact in reducing greenhouse gas emissions across the gas networks.



This year we completed our HyDeploy 2 project, which has looked to provide evidence that blending hydrogen into our networks (up to 20% concentration by volume), is safe both within our networks and in customers' homes and businesses. The HyDeploy2 project built on an initial trial, which blended hydrogen into a private network on Keele University Campus. HyDeploy2 went on to deliver a live demonstration of Hydrogen Blending, but this time within an existing network for a village made up of circa 600 homes. The trials showed that the pipe and components performed well, with no increase in component failure frequencies when compared to the historical performance of these networks on natural gas. Overall residents during both trials were found to be positively engaged and receptive to the trials, with a high degree of support.

The evidence from our HyDeploy projects has now been submitted to the Health and Safety Executive (HSE) for review. They will then look to make their recommendations to the UK Government, who have given a 'minded to' position in support of blending, subject to the HSE confirming that it is safe. The HSE's review of the HyDeploy evidence is due to commence this year (2024) and run into 2025.

Innovating to support the low carbon transition

Innovation	Issues or barrier	Annual Achievements	Expected benefits	Timescales
HyNet – Front-End Engineering Design (FEED) stage for Hydrogen Pipeline	Industry in the North West needs to meet Net Zero targets and therefore needs low-carbon energy. This can be achieved through the Production, CCUS and distribution of hydrogen in the North West.	The Front-End engineering design and consenting work is nearing completion, with discussions underway with both DESNZ and Ofgem over the funding routes for future phases.	Production of circa 3.85 GW pa of hydrogen, to decarbonise industry in the North West.	Phase II of the HyNet pipeline project will be completed by 2027. With Phase III completed by 2030.
HyDeploy (Hydrogen Blending)	Need to demonstrate that the existing gas networks can be repurposed to transport a blend of up to 20% hydrogen by volume.	Following two trials (where a blend of up to 20% hydrogen by volume was delivered into customer's homes). The resultant evidence has been submitted to the HSE for their review. The evidence shows that there were no issues with the network pipe or components and that residents experienced no change to the functionality of their gas appliances.	Technical and safety evidence to support the HSE recommendation that the existing gas network(s) can be repurposed to transport a hydrogen blended gas.	The project has now completed and the evidence submitted to the HSE, to be able to support the recommendations to the UK Government (the Department of Energy Security and Net Zero (DESNZ)).

Climate change impact

Business carbon footprint – Scope 1 and 2

As part of our decarbonisation strategy, we aim to reduce our Greenhouse Gas emissions to Net Zero in line with the UK Government's ambition by 2050. We measure our Business Carbon Footprint in line with the Greenhouse Gas Protocol to monitor, review and reduce our emissions. There are three Scopes of emissions:

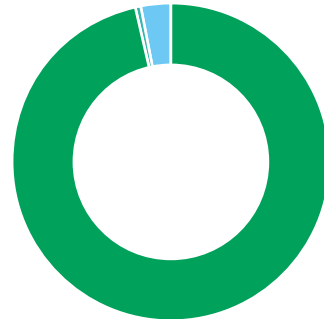
- **Scope 1** – Direct emissions that are owned or controlled by Cadent, for example, the combustion of fuel in vehicles, plant, and machinery.
- **Scope 2** – Indirect emissions from the energy purchased and used by Cadent. For example, the electricity used in our offices and buildings.
- **Scope 3** – Emissions not produced by Cadent, but from those in our value chain, for example from materials and products from our suppliers or contractors. More information on our Scope 3 emissions is covered [here](#).

Whilst The Science Based Targets Initiative (SBTi) is still to publish its methodology for the oil and gas sector, our current Net Zero emission reduction targets cannot be verified, however, we have developed our Scope 1 and 2 emission reduction pathway necessary to meet the Paris Agreement of limiting global warming by well below 2 degrees Celsius.

Our market-based Scope 2 (electricity procured for office and building use through contracts) is based on REGO-certified renewable electricity from our suppliers.

At the end of RII0-GD2, we have set a target to reduce our Business Carbon Footprint in the following areas (excluding shrinkage): Gas in offices and depots, own use gas, electricity use, commercial vehicles, business mileage, PE pipes and contractor fuel use by 26,750 tCO₂e.

2023/24 Cadent BCF All Emissions (tCO₂e) – Scopes 1, 2 & 3



- Scope 1 Emissions
- Scope 2 Emissions
- Scope 3 Emissions



Climate change impact continued

CASE STUDY

The Carbon Trust Route to Net Zero



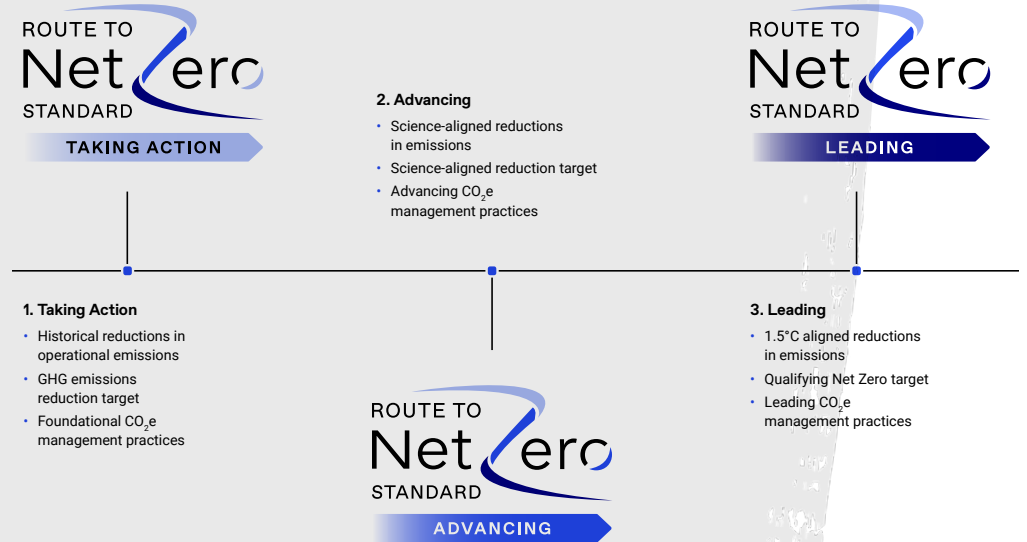
The Carbon Trust’s Route to Net Zero Standard is the only certification that recognises an organisation’s progress on the journey to Net Zero and climate leadership.

Achieving this certification in 2023 is no small undertaking and follows a rigorous assessment and audit process against defined criteria, with The Carbon Trust assessing Cadent as ‘working towards’ the first tier of certification.

We scored **67%**, across their Governance, Implementation, Measurement and Stakeholder Engagement.

The Standard is divided in three levels: Taking Action, Advancing, and Leading. Cadent applied to and achieved the Taking Action tier, the requirements of which are detailed below.

The Carbon Trust assessors have provided detailed recommendations that we can implement across our carbon management process, which will help improve our performance, and reporting as we advance towards Net Zero.



Quantitative Requirements

- > Three years of annual carbon footprint data for Scope 1, 2 and business travel activities.
- > An absolute carbon emissions reduction.

OR

- > An intensity based carbon emissions reduction greater than 2.5% per annum.

Qualitative Requirements

- > Foundational carbon management practices.
- > A qualitative assessment score of at least 60% across the four categories of Governance, Implementation, Measurement and Stakeholder Engagement.
- > For recertification the client must have quantitative carbon reduction target in place.

Climate change impact continued

CASE STUDY

Electric Vehicle (EV) Fleet

One of Cadent's RIIO-GD2 commitments (EAP 7) is to have all emergency response engineers driving zero-emission vehicles by 2026.

In 2023/24, we have deployed 473 First Responder EVs across the networks, and are on track to meet the EAP target, with over 50% of this fleet now an EV.

Currently, the rest of our fleet consists of petrol or diesel vehicles. Converting all first-call responder vans to electric vehicles or other zero-emission equivalents will save 4,000 tCO₂e per year, contributing towards our carbon neutrality targets.

The conversion of our fleet and the installation of EV charge points is done over time as our vehicles are leased and contracts for vehicles end at different points over the RIIO-GD2 period. Conversion to zero-emission vehicles is then done once a contract for a vehicle has ended and requires replacement.



CASE STUDY

Proactive Leak Detection

A new way of detecting and reducing emissions from our gas network.

There have been many changes and advances in technology for the gas industry over the years but there is one aspect that has not really changed at all and that is gas leak detection and a more proactive way to reduce emissions from our network. Previously, we have relied on customers reporting gas escapes and we could only forecast where emissions might be escaping by modelling data from a small sample of our gas pipes.

Our mains replacement programme is based on this data and it was felt there had to be a better solution and method to do this. In 2019, we went out to the market and asked for new innovative ideas that could help us to reduce our emissions and help with proactive planning of our mains replacement programme too. By 2020, Picarro and its sniffer cars were brought on board and with the additional funding from Transport for London (TfL), the technology was trialled over the year in North London's network. Using hydrogen fuelled cars, they drove around the streets of



London and using the detection technology from Picarro in the cars, we were able to know exactly where emissions were occurring and precisely how significant these were. The result of this innovative technology, is that we can identify gas escapes quicker, the location is more precise and a quick decision can be made whether we complete an emergency repair, intervention assurance or optimised mains replacement.

By using this technology our new approach has massively improved the accuracy of emissions reporting and we can shift to a proactive approach to managing our gas networks. In 2023/24, we surveyed over 11,000km of our North London network and completed over 200 proactive repairs targeting emissions reductions. As a result of these and other interventions, we estimate that we achieved a 7% reduction in fugitive emissions from mains and services. We have four cars with the Picarro technology in them, working across our North London and now West Midlands network too.

Climate change impact continued

CASE STUDY

Green Apple Awards 2023

In 2023, Cadent won two Green Apple Awards for environmental best practice for two large projects, demonstrating our commitment to reducing environmental impact.

These projects show that with minor changes to operational techniques and utilisation of cleaner plant and equipment, essential utility works can be completed with less impact on the environment.



Hammersmith Bridge Gas Main Reinforcement Project

This London-based project involved laying 2.5km of new medium pressure gas main. By working with Morrisons Energy Services and Terraforma Pipeline Ltd. (TFP), the project was successfully designed to protect the local wildlife and community where the work was taking place.

By using Hydrotreated Vegetable Oil (HVO) to fuel site machinery and plant, utilising solar panels to harvest free renewable energy for our on-site welfare support unit, recycling excavated soils for backfilling, using electric reinstatement tools and a trench cutter instead of an excavator, Cadent reduced carbon emissions, cut fuel consumption and noise pollution to lower our environmental impact.

Through these environmental innovation initiatives, the project's achievements included:

- › 5,500kg CO₂e reduction in project emissions.
- › 66% reduction in fuel consumption.
- › Significant noise reduction compared to business-as-usual utility projects.
- › Improved security and stability of gas supply to customers.
- › Improved relationship with local authority and stakeholders following operational team's performance and implementation of initiatives.

Pipeline Diversion Sites

This West Midlands based project also won a Green Apple Environment Award in the Fuel, Power and Energy sector for their proactive environmental practices at the high-pressure pipeline diversion sites known as HP27 and HP29.

Key project achievements included:

- › The deployment of the Horizontal Directional Drilling (HDD) method rather than traditional open cut methods. This technique allowed 1.2ha of mixed plantation woodland to remain.
- › Minimising the working area to the best of our ability, including reviewing around 120 individual trees to ensure as many as possible can remain. The timber from any felled trees was used to create habitat piles or donated to a local children's nursery.
- › Strategically designing and creating a layby on an access route around a tree known to support a Natter's bat maternity colony that would otherwise have to be removed.



The award recognises the efforts and contributions of the team including Cadent, their main works contractor United Living and many other subcontractors, so a huge well done to everyone involved."

Asha Mistry

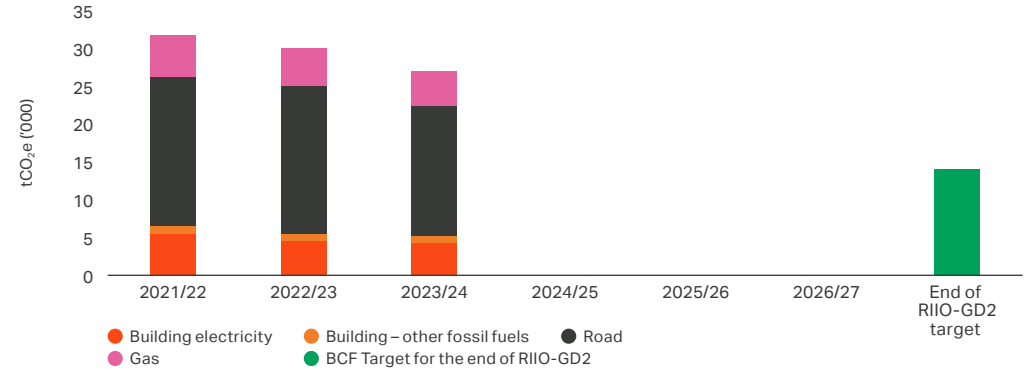
Environmental Advisor for the Cadent Diversions

Climate change impact continued

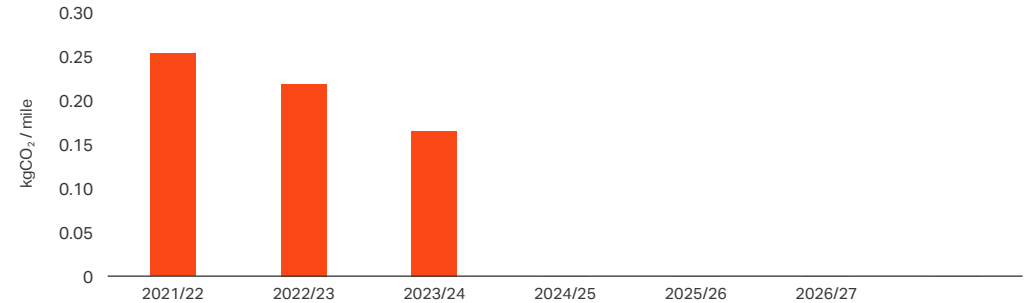
Table 6 – Scope 1 and 2 emissions

Emissions in tCO ₂ e	Specific Area	2020/21	2021/22	2022/23	2023/24	2025/26 Target
Building energy use	Building – electricity (location-based)	6,446.08	5,527.45	4,545.33	4,267.32	500
	Building – other fuels (location-based)	1116.56	987.68	852.19	869.79	–
Operational transport	Road	19,683.78	19,675.65	19,538.51	17,205.07	13,500
	Sea	–	–	–	–	–
	Air	–	–	–	–	–
Fuel Combustion	Diesel	–	–	–	–	–
	Gas	5,471.2	5,432.59	5,068.67	4,598.30	–
Gas Shrinkage		1,283,861.65	1,244,704.87	1,1978,78.42	1,162,064.20	
Total excluding shrinkage		32,717.62	31,623.37	30,004.92	26,940.48	–
Total including shrinkage		1,316,579.27	1,276,328.24	1,227,883.13	1,189,004.65	–

Scope 1 and 2 emissions (excluding shrinkage)



CO₂e Intensity of an operational mile (company car only)



Based on business mileage only, the graph above details the carbon intensity on miles driven during RIIO-GD2.

Climate change impact continued

Shrinkage

Shrinkage refers to the gas that is lost from the gas distribution network, and is made up of Leakage, own use gas and Theft of Gas values:

- › Shrinkage is combusted gas that isn't metered and is used in either routine operations or lost through theft. This includes Own Use of Gas and Theft of Gas.
- › Leakage is un-combusted gas escaping from the transportation system through leaking, venting equipment, or third-party damage to the pipes.

In 2023/24, Shrinkage represents 95.31% of Cadent's overall Business Carbon Footprint and is being managed through many activities. Key emissions reduction elements for Shrinkage include the mains replacement programme, where the old iron mains are being replaced with new Polyethylene (PE) Pipes, gas pressure management, and other initiatives and innovation projects.

We will be continuing to replace older and higher-risk iron pipes to meet our statutory obligations and additionally, reduce leakage of gas and prepare the network for the transportation of hydrogen as part of the decarbonisation demands of society.

Table 8 – Leakage volumes

GWh	2021/22	2022/23	2023/24
Low-Pressure Mains	620.19	594.41	583.05
Medium Pressure Mains	106.52	104.94	102.78
Services	85.25	72.51	60.35
AGI	191.74	192.38	192.68
Interference	3.37	5.17	2.03
Total	1007.07	969.41	940.89
Target Total	1038.94	1035.03	997.10

Table 9 – Leakage emissions

Conversion factor: 1,226.42 tCO₂e/GWh

tCO ₂ e	2021/22	2022/23	2023/24
Total	1235091.50	1188907.30	1153925.37
Target Total	1274180.04	1269379.20	1222866.36

Table 10 – Other shrinkage volumes

GWh	2021/22	2022/23	2023/24
Own Use	29.55	27.57	25.01
Theft	52.30	48.80	44.27
Total	81.85	76.37	69.28

Table 11 – Other shrinkage emissions

Conversion factor: 183.85 tCO₂e/GWh

GWh	2021/22	2022/23	2023/24
Own Use	5432.60	5068.67	4598.42
Theft	9615.22	8971.10	8138.80
Total	15047.82	14039.77	12737.22

The following assumption is used to determine the quoted conversion factor:
















- › CV MJ/m³ natural gas: 39.6
- › % of CH₄ in natural gas: 82.97%
- › Density of CH₄ in kg/m³: 0.656
- › Global Warming Potential of CH₄ in tCO₂e: 25
- › The proportion of CO₂ in natural gas: 2.4%
- › Density of CO₂ kg/m³: 1.98

Climate change impact continued

Business Carbon Footprint – Scope 3 emissions

Scope 3 emissions are defined as all indirect emissions not included in Scope 1 or 2 and occur in the value chain (i.e., supply chain). For Cadent, this means emissions from the products and services used, contractor emissions and other sources not owned or controlled by us.

In March 2021, a screening exercise by The Carbon Trust was performed to highlight Scope 3 emission categories that are materially relevant to our operations. This screening activity has helped shape our efforts over RII0-GD2 in establishing our Scope 3 footprint and identifying sufficient data collection processes to increase our reporting Scope 3 emissions.

Upstream activities for Cadent		Downstream activities to Cadent	
	Purchased goods and services		Transportation and distribution
	Capital Goods		Processing of sold products
	Fuel and energy-related activities		Use of sold products
	Transportation and distribution		End-of-life treatment of sold products
	Waste generated in operations		Leased assets
	Business travel		Franchises
	Employee commuting		Investments
	Leased assets		

Scope 3 Category Applicability Matrix

A Scope 3 category applicability matrix was used to determine both the quantitative and qualitative basis of our key Scope 3 emissions areas. The screening process followed the Greenhouse Gas (GHG) Protocol Corporate Value Chain Accounting and Reporting Standard, identifying Scope 3 emissions based on size, influence, risk, stakeholders, and sector guidance.

Scope 3 hotspot areas and recommendations

The screening identified that our Scope 3 emissions largest sources are from the following:

- › **Category 1** – Purchased goods and services. Operational costs were used in the assessment. Suggest seeking out supplier-embodied carbon for materials where possible.
- › **Category 2** – Capital Goods. To start collecting raw data and seek out supplier-embodied carbon for materials used where possible.
- › **Category 3** – Fuel and Energy related activities
- › **Category 4** – Upstream transportation and distribution. Data from our contract partners who deliver the mains replacement programme.
- › **Category 5** – Waste Generated in Operations. Raw data is collected, such as tonnage of office waste, spoil from excavations and PE pipe and should be converted into tCO₂e.
- › **Category 6** – Business Travel.
- › **Category 7** – Employee Commuting – data not yet collected or available for reporting.
- › **Category 12** – End-of-life treatment of sold products.

Climate change impact continued

Assumptions, methodology and the data sources used in the screening and reporting can be found in [Appendix 1](#).

Improvement Plan

We are always looking at our operations and processes to improve data reporting, quality and quantity to help with decision-making. We currently capture emission data associated with supply

chain (PE pipe) and Contractor fuel use and have worked with our supply chain through the Supply Chain Sustainability School carbon reporting tools to improve data quality and capture during the year. During 2023/24 we have worked to improve our internal carbon reporting models to now capture emissions associated with waste generation from our offices, depots and spoil from excavations.

2023/ 24 Scope 3 emissions

Category	2021/22	2022/23	2023/24
Purchased goods and services	9,784.99	4,970.79	6,864.42
Purchased goods and services	96.52	90.03	95.99
Capital goods	0.00	0.00	0.00
Fuel and energy-related activities	0.00	0.00	0.00
Upstream transportation and distribution	21,526.71	26,818.25	27,379.29
Waste generated in operations	0.00	0.00	367.41
Business Travel Business mileage in vehicles not owned/controlled by Company	222.15	293.26	319.84
Business Travel Rail	13.11	28.95	41.90
Business Travel Air	0.42	40.40	102.15
Business Travel Ferry	0.00	0.00	0.00
Business Travel Spare (Hire Cars)	11.47	22.09	18.97
Employee commuting	0.00	0.00	0.00
Upstream leased assets	0.00	0.00	0.00
Total	31,655.37	32,263.77	35,189.97

Embodied carbon

Embodied carbon is defined in the UK Green Council "as the total greenhouse gas emissions produced in a built asset. This can include emissions from the manufacture, processing, transportation and assembly of products and elements to build assets".

There are two approaches to embodied carbon that we can report on. The first is 'final design' and the other is based on 'as built'. A project can often diverge from 'final design' as a result made to adjust and optimise construction work. We will update through this report applicable projects and construction updates when they occur during RIIO-GD2.

CASE STUDY

Burwell Net Zero Project - Eliminating Carbon through Design

Cadent are currently still working on delivering a project to extend the lifetime of an Above-Ground Installation in Burwell, Cambridgeshire.

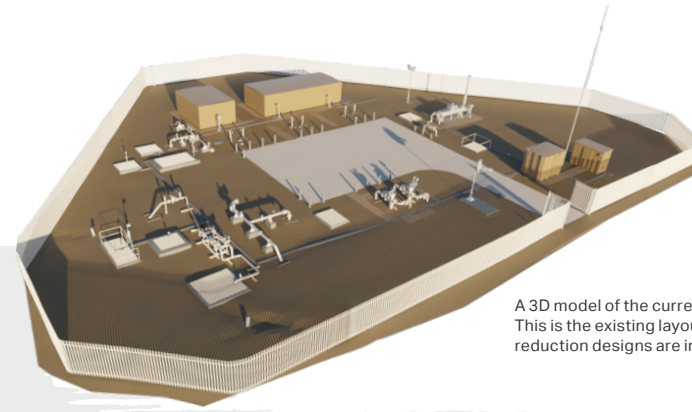
Sustainability is a core principle for this project as it aims to address Action 10 of the Cadent's Environmental Action Plan to develop a methodology to measure and report on carbon intensity of major construction projects. The project will also deliver on Cadent's 10 Point Plan Item #1 to deliver a Net Zero construction project.

The solution

As part of the Feasibility Design Study stage, Cadent and its consultants (Murphy Applied Engineering and Mace) have carried out a Carbon Life Cycle Assessment (LCA) to establish a baseline carbon impact for the project.

An LCA is an analysis of the environmental impacts associated with a project or asset over its entire life cycle including from raw material extraction, manufacturing, transportation, operation, and eventual disposal or recycling of the assets.

The LCA findings provided essential insights into the carbon hotspots within the asset life cycle. This has enabled the project team to determine which areas needed the most attention to achieve significant carbon reductions. This approach allowed for informed decision-making throughout the design process.



A 3D model of the current Burwell Site. This is the existing layout before carbon reduction designs are implemented.

Progress

Since the feasibility Design Study, the project has now progressed with the Conceptual Design Study completed. An iterative design process has been implemented to explore and incorporate innovative sustainability measures into the project, while maintaining the required standards of functionality and reliability. This has included aspects such as Preheating Systems, Renewable Energy Integration, Greener Construction Methods and Low Carbon Materials.

The LCA has continuously been updated throughout the design process, to assess the potential carbon savings from each design change. This has allowed the project team to compare the environmental impact of different design options and ensure that the most effective carbon reduction strategies were implemented.

Upon consideration of the various design changes, the Feasibility Design Study identified up to 77.5% carbon reductions could be achieved if all solutions identified within the study were to be implemented.

Cadent is now looking to engage a Construction Main Works contractor to move onto an innovative construction methodology stage, where the proposal will be developed to reduce embodied carbon further.

Sustainable procurement, resource use and waste

Supply chain

We recognise the value of sustainability. For us this means that we are committed to business practices and activities that preserve natural resources, save money and that are good for the community within and beyond our network. This is why we make decisions that have a positive impact on environmental factors linked to our operations and on social and economic factors. We look to our suppliers to support us in meeting our environmental policy objectives and to take a proactive approach to reduce our environmental impact.

We are currently developing Cadent's Supply Chain Sustainability and Social Value framework for all its suppliers covering the full supplier lifecycle (pre-qualification, tender, contract delivery and post contract). Our Supply Chain Framework aligns to Cadent's Sustainability strategy, which is based on the UN Sustainable Development Goals and consists of three main pillars:

- Easier Warmth.
- Fairer Opportunities.
- Greener Society.

The framework we are developing recognises the diversity within our supply chain, both in terms of different types of supply (Goods, Works, Services and Consultancy) and also the size and complexity of the organisations with whom we do business. Our framework, therefore, is designed to provide clarity for all our supply partners as to what is expected from them in terms of our sustainability ambitions. It is anticipated that this framework will be rolled out to supply chain by the end of the 2024/25 financial year.

Our Procurement Policy signposts buyers to consider and act on including sustainability considerations in our procurement events and our Supplier Code of Conduct sets out the expectations we have for our suppliers on environmental, social, and economic sustainability. 100% of our active suppliers and those participating in tender events are required to confirm acceptance of our Supplier Code of Conduct or have an equivalent in place which meets the expectations.

Sustainable sourcing considerations are built into our Procurement Standard, to ensure that the sustainability impacts for the events are considered. The relevant questions and criteria are incorporated in the tender process and appropriate contract terms and performance KPI are included within the contracts.

This provides the core of our purchasing values and informs the decisions we make surrounding our suppliers. It is a collaborative effort in which we all need to play a part. As a minimum, we expect all suppliers to comply with all legal requirements and obligations and to have in place an environmental management system or equivalent that is aligned to the requirements set out in standards such as ISO14001. We expect key suppliers to collaborate with us in support of the UN Sustainability Goals and to work on those goals that directly relate to the activities that we do. We also require that all suppliers become a member of the free Supply Chain Sustainability School (SCSS) to drive our environmental commitments and reporting.

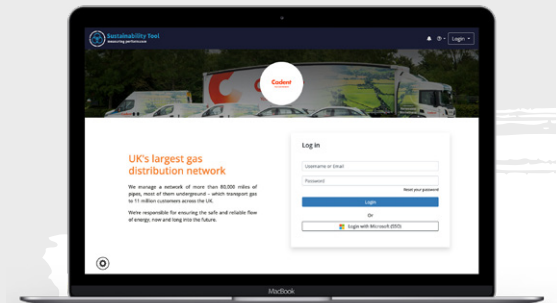
CASE STUDY

Action sustainability - waste and carbon reporting tool

We have 84 suppliers who are enrolled on the Sustainability Tool and are reporting carbon and waste metrics this way for the third year, in a systematic format backed up by greenhouse gas conversion factors for carbon emission.

The tool is set up specifically to capture 9 categories for our Scope 3 reporting. This includes the following metrics:

- 10 metrics for company travel.
- 4 metrics for electricity.
- 10 metrics for fossil fuel use.
- 30 metrics for fugitive emissions.
- 23 metrics for different types of materials.
- PE Pipe used.
- 12 metrics for third party travel.
- 27 metrics for waste.
- Water usage.



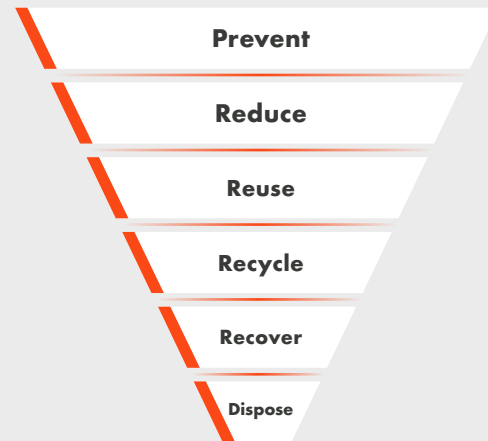
CASE STUDY

Project Bring It IN! (BIIN)

A commitment was made in the EAP for RIIO-GD2 to eliminate single-use plastics. Following on from an initial phase to reduce plastic usage, mainly single-use plastic packaging from the supply chain and improve awareness of recycling packaging, a second phase of the project is now being supported by a group of 11 graduates.



The team launched project Bring It IN! (BIIN), working with our supply chain and our Operational teams to address how recyclable packaging is efficiently managed once it is at its end of use. The project team have actively applied the waste hierarchy to reduce, recycle and remove waste from being sent to landfill. The hierarchy helps us rethink our relationship with waste based on five priorities ranked in terms of what's best for the environment.



Bring. It. IN!

Project BIIN Objectives:

- › To increase awareness among all Operational teams about different types of packaging and what can be recycled
- › Ensuring that the packaging is segregated correctly by applying the waste hierarchy and best practice waste management
- › To identify and divert more of the current packaging around our procured products towards recycling

The project started by completing a detailed assessment of incoming plastic packaging at the Cadent National Distribution Centre. By tracking the type and quantity of packaging materials from our suppliers, the team baselined 65 tonnes of single-use plastic incoming with products per year. Through targeted efforts, 61 tonnes of this packaging was successfully converted by suppliers from plastic to alternatives like paper and other recyclable materials.

To continue this effort and shared learning, the project team is now focused on active engagement with our waste management contractors, suppliers, and internal and external stakeholders to carry out various activities such as surveys, site visits, roadshows, presence at stand down days and E-learning videos. We are also arranging the provision of additional plastic recycling bins distributed on sites and recycling bags on our fleet of vans.

With dedicated team effort and network support, the project hopes to remove single use plastic packaging through a combination of design-change, support from suppliers and action from end-users of packaging. This will deliver a reduction in single-use plastic packaging in our waste streams from products completely by September 2025.

Sustainable procurement, resource use and waste continued

We are actively involved in working groups on sustainability with the SCSS and SFA (Slave-Free Alliance). We have been instrumental in creating and developing the UAL (Utilities Against Slavery) for which we are a signed-up partner.

In April 2024 Cadent hosted the Utilities Against Slavery Strategy Day attended by representatives from utilities across the country which included workshops around the risk of modern slavery, risk mitigation and sharing best practice.

We have strongly promoted the take-up and usage of resources provided by the Supply Chain Sustainability School.

Engagement between our suppliers and the SCSS in numbers during 2023/24:

- 1,685 supplier attendees have attended sustainability workshops.
- 6,659 e-learning resources completed.
- 2 speaking slots at public events including virtual conference.
- 58,656 resources viewed.
- 6,847 CPD training hours delivered.
- 3,021 CPD e-learning hours completed.
- 17% increase in sustainability competency assessment.

Resource efficiency

Purchased goods ranked by spend

Material ranking	2021/22	2022/23	2023/24
1	PE Pipe	PE Pipe	Plastic & Metals
2	Metal	Metals	PE Pipe
3	Plastic	Plastic & Metals	Metal
4	Textile (PPE)	Fibreglass	Tools, Chemicals, Appliances
5	Steel	Cast iron	Cast Iron
6	Chemicals	Steel	Textile
7	Cast Iron	Plastic	Plastic
8	Fibre glass	Textile	Copper & Brass
9	Copper and Brass	Chemicals	Steel
10	-	Copper & Brass	Chemicals

Table 12: Sustainable procurement performance indicators

Supply Chain	Unit	2021/22	2022/23	2023/24
Percentage of suppliers (by value) meeting Cadent's supplier code	%	100 (based on the assumption to opt-out)	90 of relevant spend value	91 of relevant spend value
Percentage of suppliers (by value) that have their own sustainability metrics of KPIs	%	N/A	TBC	TBC

Sustainable procurement, resource use and waste continued

Waste

There have been several projects in 2023/24 that have led to actions being taken to improve our resource efficiency, waste prevention and the diversion of waste streams from landfill.

Waste prevention and improved segregation

Monitoring and targeting of general waste

- › Weekly data reporting through Power BI and available to all employees.
- › Monthly reporting to all key stakeholders on monthly performance against the target.

Monthly waste reduction meetings

- › Monthly network meetings to discuss waste reduction and segregation projects, sharing best practices and driving improvements.
- › In the North West there are weekly calls with leadership to report on areas for improvements. As well as weekly calls with Waste Champions and depot managers to discuss the status and opportunities for improvement.

Waste signage

- › New hazardous waste signage was reviewed in the East Midlands Depot.
- › Depots have reviewed waste signage and are looking to implement more detailed signage that will visually describe waste streams across each location.
- › Sites are using the new Incident Management System to track and document site changes and incidents.

Waste Champions

- › Waste champions continued to be assigned to all North West depots to drive on-site performance, skip inspections, localised communication and on-site waste segregation discussions. The Waste Champions educated individuals and challenged those who did not use the waste streams correctly to ensure all skips were appropriate.

Table 13 – Total Waste (tonnes)

Waste generated	2021/22	2022/23	2023/24
Total metric tonnes of waste	1,152,976.93	703,005.15	671,247.42
General waste	1,682.26	1,241.47	1,117.44
Wood	274.75	276.39	282.45
PE Pipe	503.37	1,186.01	846.76
Construction and demolition	88.40	536.78	114.62
Rubber	1.16	0	0
Dry Mixed Recycling (including confidential paper)	249.92	292.78	324.84
Metal	287.00	290.47	305.76
Plastics	144.29	285.54	277.40
Spoil	1,149,219.31	674,994.90	660,473.34
Food/Organic/ Biodegradable	91.14	119.20	133.45
Hazardous – Solids (including sharps)	435.33	261.42	192.69
Hazardous – liquids (such as septic tank sludge, sewage)	No reported	23,516.95	6421.30
Non-hazardous liquids	No reported	3.24	736.71
Non-hazardous solids	No reported	No reported	18.24

Sustainable procurement, resource use and waste continued

Waste disposal routes for 2023/24:

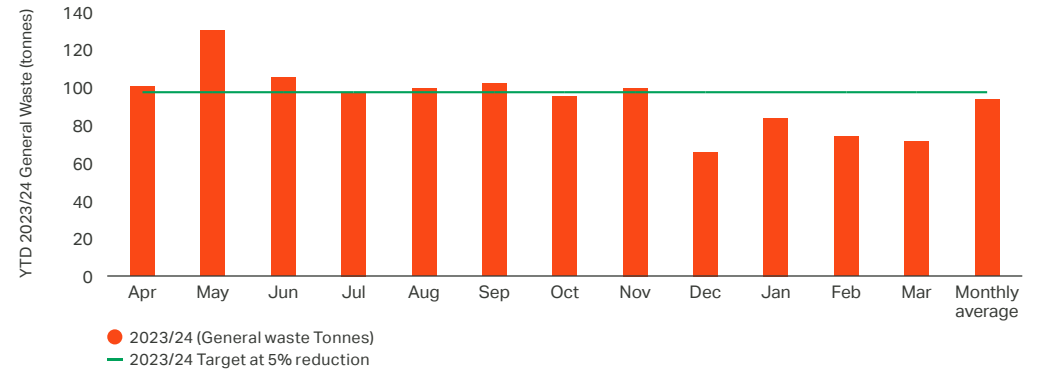
Waste Disposal Routes 2023/24 (%)	Reduced	Prepared for re-use	Recycled	Other Recovery (including diverted from landfill)	Landfilled
Total Waste by Cadent (Office, network depots, mains replacement)	0	0	97.74	0.17	2.10
General waste	0	0	1.75	95.36	2.89
Wood	0	0	98.68	1.32	0
PE Pipe	0	0	100	0	0
Construction and demolition	0	0	100	0	0
Dry Mixed Recycling (including confidential paper)	0	0	97.69	2.31	0
Metal	0	0	97.18	2.82	0
Plastics	0	0	98.17	1.83	0
Spoil	0	0	98.07	0	1.93
Food/Organic/ Biodegradable	0	0	98.56	1.44	0
Hazardous – Solids (including sharps)	0	0	92.88	7.04	0.08
Hazardous – liquids (such as septic tank sludge, sewage)	0	0	82.20	0.04	17.76
Non-hazardous liquids	0	0	82.02	0	17.98
Non-hazardous solids	0	0	82.00	0	18.00

Cadent's waste target for 2023/24 (Office and Depot waste only)

As we strive towards Net Zero with the environment at the core of our future, we are working to minimise the waste material generated by the business. We set annual environmental targets through short and long-term incentive plans as a mechanism to ensure colleagues are incentivised to drive continuous improvement in key areas of the business.

The 2023/24, 5% general waste reduction target had been designed to drive high levels of performance against waste as a key business metric and adding a direct link to personal financial incentives of Cadent employees. The result reflects the positive engagement, hard work and commitment shown in the networks in understanding and improving our waste management, waste segregation and reducing waste generated at source across all teams.

YTD 2023/2024 General Waste tonnage vs. STIP Target

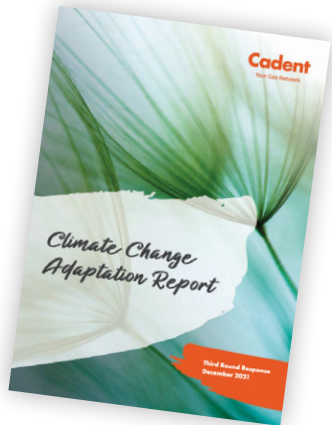


Local Environment

Climate Change resilience

Climate Change Adaptation and resilience go hand in hand with our approach to a changing environment and how we can prepare and plan our day-to-day operations around climatic hazard events. Adaptation is the process taken to adjust to the actual or expected climate and its effects, whereas resilience to climate change is the capacity to prepare for, respond and recover from those hazardous climatic events.

In December 2021, we reported to the Department of Farming and Rural Affairs (DEFRA) our third round of climate change adaptation report and supported to join contribution to the Energy Network Association's report.



New and emerging climate-related risks are identified through our horizon scanning process, and 'Failure to respond to climate change and biodiversity' is one of our 'Principal Risks' overseen by the Executive, Board and Board Committees. Reviewing this risk further, we have identified:

- › **Reducing our impact on climate change** – The risk we do not appropriately access and/or mitigate our Greenhouse Gas emissions.
- › **Adapting to climate change** – The risk we fail to adequately adapt to potential climate change scenarios that impact our assets and operations, for example, heat waves, droughts, floods, storms, and wildfires.
- › **Net Zero** – The risk that the gradual but continual decarbonisation of the energy system, including ensuring an end to the unabated use of fossil fuels such as natural gas may lead to a reduction in the use of gas networks in the future.

In March 2023, we set up an internal Extreme Weather Network Resilience Working Group, to review and share best practices and lessons learnt from external stakeholders and working groups around climate change adaptation and resilience, supporting our reporting and preparedness.

Cadent is also part of the Energy Network Association's Climate Change Resilience Working Group, a working group across the gas and electricity sector to develop an Energy industry strategy to assess, manage and adapt to the impact of climate change on Gas and Electricity network assets and operation. The working group aims to consider and develop adaptation pathways and management processes to ensure the long-term physical resilience of our networks and to assess the additional physical and transitional risks associated with climate change, such as considering and responding to the latest available data or projections of climate change impacts across the UK and identifying how climate change may change the risks facing the networks.

Enhancing the local environment

We are committed to supporting the Government's climate change ambitions and pledge to achieve Net Zero before 2050.

One of the ways we're working towards this is by exploring how we can preserve the natural environment, maintaining and enhancing the biodiversity at our own sites, and working with local communities to support nature regeneration in areas impacted by our construction work.

The Cadent community is committed to creating a greener society. We can do this through using our volunteering days which are aligned to the Sustainable Development Goals. Each employee is entitled to two days volunteering per year.

2023/24 was a huge year for volunteering! Through our Volunteering partner, Neighbourly we have used 593 volunteer days and 3,951 hours to enhance the local environment, whilst benefiting local communities in events for:

- › Gardening and outdoor.
- › Environmental clean up.
- › Conservation.
- › Recycling/upcycling.

Read our Climate Change Adaptation Report [here](#)

CASE STUDIES

Environmental Volunteering

Lunt Meadows Reserve

In July 2024, the Occupational Health & Wellbeing team met to utilise one of their volunteering days. They left their laptops behind and met at Lunt Meadows Reserve, Liverpool.

To start the day, they were set to work pulling ragwort in the meadow, which is harmful to the sheep when they are let in to 'mow' the land.

The team were taken on a reserve walk, where they saw a lot of different flora, fauna and animals. In order to identify these, they downloaded the i-naturalist app which helped identify plants, animals and sounds. This app also enables you to record what you had seen or heard too. It seemed we had some budding twitchers in our group.



We found it really helped our team, who are spread throughout the country, to come together and make a difference to such a great cause."

Sarah Laxton
Senior Wellbeing Advisor

Lunt Meadows Reserve is just 5 miles out of Liverpool town centre, but the team couldn't hear any traffic noise at all and described it as 'bliss'.

The reserve itself is a wonderful peaceful place that you can walk round and volunteer too.



A day well spent at Victoria Park, Stretford!

In May 2024, The North West Engineering team rolled up their sleeves for a day of volunteering at Victoria Park in Manchester.

Activities involved gardening, fixing and enhancing flower beds and even calving new paths filled with bark through the woodland area.

Designated pathways can reduce the impacts of trampling which effects plant growth, soil compaction and pathogen invasion.

The team who are also involved in our Mains Replacement Programme were proud to give back to the community and hope it will have a lasting impact on the area.



CASE STUDIES

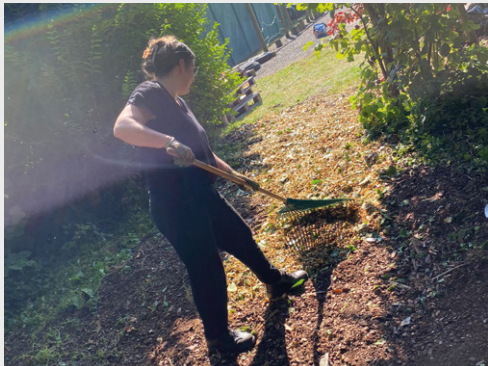
Environmental Volunteering

Green Futures Community Garden Project

The Security Delivery team made the most of one of their two annual charity days by lending a helping hand to the Green Futures Community Garden project in Grimsby.



Green Futures is a community-driven initiative aimed at promoting environmental sustainability and social well-being in Grimsby. Established with the vision of creating a green space that is both productive and educational, the project serves as a hub for various activities including gardening, education, and community events.



This initiative, which saw nine dedicated team members strimming, mowing, and clearing pathways, exemplifies Cadent Gas's commitment to community involvement and environmental sustainability. The overgrown areas of the garden were transformed into neat and accessible spaces. Additionally, they cleared the pathways of weeds, ensuring that the garden was more inviting and easier to navigate for the local community. A few members of the team also planted some pumpkins which should be ready for Halloween.



It was a fantastic experience to work with my colleagues outside of our usual environment and to give back to the community in such a meaningful way. Seeing the immediate impact of our efforts on the garden was incredibly fulfilling."

Chloe Paul
Team member

Women in Operations volunteering day

The Women in Operations volunteering day took place at a Primary School in Oakham.

The team spent the day cutting back vegetation and clearing overgrown spaces to create an area to be used as a 'Forest School' for the students.



Local Environment continued

Biodiversity

Biodiversity is described as all the different kinds of life you'll find in one area – the variety of animals, plants, fungi and even microorganisms that make up our natural world. Each of these species and organisms works together in ecosystems to maintain balance and support life. It supports everything in nature that we need to survive; food, clean water, medicine and shelter. There is growing societal concern over continuing biodiversity loss, and this is seen increasingly as an issue of similar magnitude "and linked with" the climate crisis.

Our focus during RIIO-GD2 is primarily:

- › To work within the current license conditions to deliver the commitments we have made in our EAP to seek innovative and creative ways to enhance biodiversity on our key sites.

In 2023/24 we instructed ecologists to conduct 28 baseline ecology surveys using the DEFRA Biodiversity Metric 4.0 methodology across a selection of above-ground installations (AGI) and Depots only. The DEFRA Biodiversity Metric 4.0 (a Natural Capital Value tool) is designed to quantify biodiversity to inform and improve planning, design, land management and decision-making. It provides a standardised approach that is widely accepted across the industry and environmental communities.

Each ecology survey has been shared with relevant site contacts for review and approval and is available on the Environment Management System (EMS). The reports detail action plans and proposed measures from the ecologist that if implemented will provide ecological enhancement within the above-ground installations (AGI) and Depots.

We have set up an internal working group to manage and implement these actions across the networks. In our RIIO-GD2 EAP, we noted that 'we will undertake the external biodiversity benchmarking process to ensure that our action plans are robust and conform to these externally assessed standards'.

This process involves a third-party certification of our management systems against the standard specification, to do this:

- › We have now completed a gap analysis to determine the changes we need to make to our management systems and practices to achieve this certification in summer 2025.
- › We will set up appropriate governance and reporting structures for all initiatives under this strategy and have the approval for the first stand-alone biodiversity policy coming 2024.
- › We have identified 5/5 flagship sites which will undergo external assessment to achieve the benchmark status.

Examples of identified benefits across the locations include scrub and invasive species management to allow the expansion of microhabitats, specific cutting and planting regimes, low intensity mowing for grassland enhancement, pesticide reduction and enhancement of woodland through thinning and selective planting.

Table 16 – Impact on biodiversity

Project description	Baseline units	Post-intervention units (projected)	Total net unit change	Percentage net change ¹
Depot baselines	10.98	15.3	4.45	500%
Operational Sites	10.29	18.84	8.55	359%
AGI and Depot Sites	0.28	1.73	1.45	518%

¹ % Change Biodiversity Area Units.

The table shows feasibility survey data carried out in 2023/24. This is from a total of 28 reports and completes the baselining programme.

Enhancement works have started at one AGI site, and our five flagship sites for external biodiversity benchmark are undergoing site enhancement plans ready to implement.

From the 84 sites which have been surveyed, we have selected over 10 other sites to increase the habitat units on, which will also contribute to our internal 30:30 target (30% BNG by 2030).

We currently have one new depot and two operational sites going through planning permission where 10% mandatory Biodiversity Net Gain (BNG) is required, and the number of projects where this is required will continue to increase.

CASE STUDY

Biodiversity Enhancement and Net Gain

Biodiversity Action Plan works have started at one of our East of England Above Ground Installation (AGI) sites.

Our site husbandry contractors have helped implement recommended ecology actions to enhance the site and hopefully increase the Biodiversity Defra Unit scoring and ultimately lead to biodiversity net gain.

Works have included tree works, creation of habitat piles, planting wildflowers in the woodland area, removing plastic tree guards, vegetation maintenance and the addition of bird and bat boxes. Full effects of the enhancements will take 1-2 years to establish.



Environmental incidents

A reportable environmental incident is an incident that has the potential to cause harm or damage to the environment, such as polluting a watercourse, damage to local biodiversity or non-compliance with permit requirements. At Cadent, we manage and monitor environmental incidents through our Incident Management System. We use this system to track the frequency and severity of incidents, create and manage action plans, and drive continuous improvement through any lessons learned. For 2023/24, there was one warning letter received concerning fly tipping on Cadent-owned land.

There have been no reportable environmental incidents to the Environment Agency or Local Authorities.

Table 19 – Reportable Environmental Incidents

	Unit	2021/22	2022/23	2023/24
Reportable to the Environment Agency	Number	0	0	0
Reportable to the Local Authority	Number	0	0	0
Warning letters received	Number	0	1	0
Formal undertakings, enforcement notices, monetary penalties	Number	0	0	0
Prosecution	Number	0	0	0

Statement on scope and quality of data

Scope

Overview

This Annual Environmental Report (AER) provides our progress against the RIIO-GD2 Environmental Action Plan approved by Ofgem and other reporting requirements in the Annual Environmental Reporting guidance RIIO-GD2 Version 1.0 (here). This AER covers the third year of the price control period RIIO-GD2 and covers the financial year 1 April 2023 – 31 March 2024. Data collection and reports in the AER have been done so against the Annual Environmental Reporting guidance RIIO-GD2 Version 1.0 and Regulatory Reporting Pack (RRP).

Reporting boundary

This AER included data from each Network (North London, Eastern–East Midlands, East of England, West Midlands and the North West). Unless stated otherwise, the data reported is Cadent's total, as most of our RIIO-GD2 Action Plans are targeted at a company level.

Quality

Data Collection

For 2023/24, the data collection process and reporting have been assured in line with Ofgem's Data Assurance Guidance (DAG) either through the environmental reporting in the Annual Financial report or as part of the Regulatory Reporting Pack (RRP). As per DAG, our assurance process included undertaking a risk assessment to understand the probability and impact of data submissions. This determines the level of data assurance activities and processes followed for data collection, review and sign-off. We are always looking to improve our data assurance and reporting process over the RIIO-GD2 period.

Completeness of information

Throughout the AER, the data and narrative detailed in this report are to the best of our knowledge at the time of reporting. If there are any data gaps, such as incomplete data or data not collected in the current reporting year, we have started this where applicable and will work to reduce this over the RIIO-GD2 period.

The Carbon Trust data certification

In 2024 we worked with The Carbon Trust for the second year to successfully verify our 2023/24 Business Carbon Footprint data. Our greenhouse gas emissions (GHG) for the financial period spanning April 2023 to March 2024 has been verified in accordance with ISO 14064-3. The scope of work included the following Green GHG sources:

- › Scope 1: Stationary fuel combustion, mobile fuel combustion, process emissions, fugitive emissions.
- › Scope 2: Purchased electricity, steam, heat and cooling (location- and market-based).
- › Scope 3: Category 6 – Business Travel.

Having our footprint verified again in accordance with the criteria defined in the GHG Protocol as well as currently being on the 'Taking Action' tier of the Route to Net Zero standard, is proof of our commitment to the Net Zero journey by delivering reductions year on year and aiming to have access to good quality data, preferably deriving from primary sources.

Extensive internal stakeholder engagement was needed across the business in order to achieve the verification, including sharing of data collection processes, interviews and providing primary data. We would like to thank and congratulate all involved in helping Cadent pass verification and maintain this leading position with our business carbon footprint data management.

We will continue to work with the Carbon Trust, taking on board their recommendations and actioning any improvements by the time of the next GHG emissions verification audit.



Appendix 1 – Scope 3 Categories

Screening assessment

Each category was assigned a weight (Table 1) to reflect its relative importance in determining Scope 3 category hotspots. The largest contributor is the estimated portion of emissions from the relevant category. Influence and risk were considered the next most important factors in determining Scope 3 applicability. The level of influence Cadent may have over implementing emission reduction activities in a particular Scope 3 categories may warrant focus in that area and contribute to material emission reductions, even if the size of that category's emissions relative to all Scope 3 emissions would not indicate it as a hotspot. Evaluating risk is an important consideration as seeking to reduce risk will ultimately drive business decisions across the organisation and climate-related risk is increasingly growing. Finally, sector guidance, stakeholders and level of outsourcing were assigned lower weights, as they should be considered when determining Scope 3 hotspots but should not be the determining factors.

Category #	Scope 3 Category	Applicability	Overall Data Quality
Upstream			
1	Purchased goods & services	77	62
2	Capital goods	60	61
3	Fuel- and energy-related activities	57	70
4	Upstream transportation & distribution	53	76
5	Waste generated in operations	55	91
6	Business travel	27	100
7	Employee commuting	28	13
8	Upstream leased assets	22	56
Downstream			
9	Downstream transportation & distribution		
10	Processing of sold products		
11	Use of sold products	7	18
12	End-of-life treatment of sold products	51	56
13	Downstream leased assets		
14	Franchises		
15	Investments		

The data were evaluated in line with GHG Protocol data assessment criteria (Table 7.4, Table 7.6, and Box 7.2 from GHG Protocol Corporate Value Chain Accounting and Reporting Standard).

Appendix 1 – Scope 3 Categories continued

Scope 3 – Emission screening results.

Category	Methodology and assumptions	Data sources	Confidence in data (completeness and accuracy) RAG Rating
Purchased goods and services	The total spend was entered into a value chain footprint model developed by The Carbon Trust and an emission estimate was determined on a spending basis	2020 expenditure was used as a proxy FY 2019/20, for the allocation of spend for purchased goods and services	●
Capital goods	The total spend was entered into a value chain footprint model developed by The Carbon Trust and an emission estimate was determined on a spending basis	Spend on light commercial vehicles, mobile phones, computers, and portable gas detected. Expenditure in 2020 was used as a proxy for FY 2019/20.	●
Fuel and energy-related activity	Emissions from sources used to calculate fuel and energy-related activities	Emissions from transmission and distribution losses and well-to-tank emissions for shrinkage, natural gas consumption on site, electricity use and fuel use in vehicles.	●
Upstream transportation and distribution	This has been calculated based on spending data	N/A	●
Waste generated in operations	Spoil data was provided which is either landfilled or recycled and multiplied by the corresponding DEFRA 2019 emission factor	Spoil waste data from 2019 was used. A 20% uplift was applicable for other waste generated from operations.	●
Business Travel	Total travel reported by Cadent employees through the expense claim process	Business travel emissions were calculated from emissions for air, car hire, ferry, and rail	●
Employee commuting	Employee commuting emissions were estimated. The total figure was implemented into a value chain model developed by The Carbon Trust to determine an approximate footprint based on the number of employees	Calculated based on 3583 full-time employees and 304 part-time staff.	●
End-of-life treatment of sold products	This has been calculated by determining the mass of the PE pipe in 1km. The diameter and weight from suppliers were converted into kg/km and multiplied by the total used in a year.	Based on the mass of 1km of 63mm PE Pipe	●

● Accurate data is available and in full

● Estimated or modified data available or partially collected

● No data or estimate is available for the report

● Not applicable for Cadent's Scope 3 reporting boundary or applicable category

Appendix 1 – Scope 3 Categories continued

Category	Methodology and assumptions	Data sources	Confidence in data (completeness and accuracy) RAG Rating
Downstream transportation and distribution	Not applicable to Cadent		●
Processing of sold product	Not applicable to Cadent		●
Use of the sold product	Not applicable to Cadent		●
Downstream leased assets	Not applicable to Cadent		●
Franchises	Not applicable to Cadent		●
Investment	Not applicable to Cadent		●

● Accurate data is available and in full

● Estimated or modified data available or partially collected

● No data or estimate is available for the report

● Not applicable for Cadent's Scope 3 reporting boundary or applicable category

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