Environmental Action Plan

WALES&WEST UTILITIES

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Contents

Acronym Key

AER	Annual Environment Reports	HGV	Heavy Goods Vehicles
BCF	Business Carbon Footprint	ICEs	Internal Combustion Engines
Biochar	A charcoal-like substance that's made by burning organic material from agricultural and forestry wastes	ISG	Independent Stakeholder Group
BNG	Biodiversity Net Gain	KPI	Key Performance Indicators
CO_2	Carbon Dioxide	NIA	Network Innovation Allowance
DPLA	Digital Platform for Leakage Analytics	PQQ	Pre-qualification questionnaire
EAP	Environmental Action Plan	PV	Photovoltaics
EMS	Environmental Management System	RMM	Routine Monitoring and Maintenance
ENG	Environmental Net Gain	SBTi	Science Based Targets Initiative
GBF	Global Biodiversity Framework	SIF	Strategic Innovation Fund
GDNs	Gas Distribution Networks	SMR	(Structural Material for Reinstatement) soil stabiliser
GHG	Greenhouse Gas	UIOLI	Use It or Lose It
GIS	Geographic Information System		

1. Part One

1.1 Introduction

We have a longstanding commitment to environmental sustainability, and minimising harm is not the limit of our ambition; we are here to do good. Through our long-term targets to move away from transporting unabated methane, we intend to be part of the resolution to the climate emergency and nature crisis, while continuing to keep customers and communities safe, warm and powered.

Our RIIO-GD2 Environmental Action Plan (EAP) outlined a comprehensive strategy to reduce our environmental impact and set milestones aimed to achieve our Net Zero ambitions. We have provided updates on our progress throughout the period in our Annual Environmental Reports. Commitments and targets in the EAP were reinforced in our longer term Sustainability Strategy, published in 2023.

In RIIO-GD3 we are setting our sights on continued progress while maintaining cost effectiveness for our customers. This is based on upholding high industry standards, such as ISO14001, the international benchmark for responsible environmental management which we have held since 2005.

At Wales & West Utilities, it's our responsibility to transport gas to homes and businesses in Wales and the South West of England, through our network of pipes. We don't sell gas. We look after our pipes and assets to keep the gas flowing safely and reliably.

The area we serve is a mixture of cities, towns, villages, and open countryside. While much of our gas network is out of sight and underground, our services are easy to see in the everyday lives of our customers. Whether a safe and reliable gas supply heats a home or business, powers an oven to cook the family meals or warms the water for a nice hot bath, we understand how important it is for our services to be there when our customers need them.

Here are some of our key facts:

We own and maintain over 35,000km of gas pipes
Our network supplies 2.5 million households and 100,000 businesses
550,000 of connected homes are on the Gas Suppliers Priority Service Registers
We serve a population of 7.5 million people from North Wales to south Cornwall
We are there for our customers 24/7, 365 days a year

1.2 Stakeholder perspective and the basis of action

Our Environmental Action Plan is informed by professional expertise, industry best practice, our own operational experience, and direct feedback from our stakeholders. Our Environmental Management team benefit from membership of the Institute for Environmental Management and Assessment which provides a source of learning, personal professional development, and benchmarking against other companies and sectors. We also regularly consult with the environment teams of the other GDNs and National Gas Transmission so that we can support each other and develop an industry wide approach to environmental responsibility and consult with other utilities and businesses through a variety of forums and specialist platforms to exchange learning outside of our immediate sector.

1.3 National and Global Emissions Targets

The UK government's net zero target has been set alongside a growing coalition of countries, cities, businesses and other institutions, to make sure that by 2050 the global total greenhouse gas emissions are equal to those removed from the atmosphere. The Science Based Targets Initiative (SBTi) is a collaborative effort by scientists, countries and companies to set emission reduction targets that are coherent with this global goal. As a responsible GDN, we have aligned ourselves with this collective goal. We adopted a Science Based Target in 2019 to reduce our emissions by a minimum of 37.5% by regulatory year 2034-5, to be operationally net zero by 2050. This remains our target as we move into RIIO-GD3.

1.4 Stakeholder views

Our stakeholders and consumers, engaged through a variety of formats including qualitative and quantitative research, Citizen's Panel and regional public engagement events, overseen by our Independent Stakeholder Group (ISG), want us to do everything we can to reduce greenhouse gas emissions, particularly leakage of methane. Members of the ISG recognise that the speed at which we can reduce greenhouse gas emissions depends on the availability of funding and suitable, cost-effective technology alongside the need to balance environmental action with a commitment to deliver value for money. The ISG encourage us to be ready to respond to potential government policy changes within RIIO-GD3 that enable accelerated action to achieve net zero, and in the meantime to act where technology and funding are not barriers; which is mainly in the enhancement of natural capital.

Our commitment to nature is supported by a broader audience; we took advice for example from Wales Environment Link (WEL), an umbrella body of Welsh and UK nature conservation organisations. They support our plans on nature and have encouraged our intentions to use partnership and collaboration to deliver our goals. Seventy-three stakeholders from sixty-four different organisations including local authorities, charities, and environmental groups joined our regional stakeholder engagement workshops. They provided broad support for our level of ambition to support biodiversity and ecosystem services by working in partnership with public bodies and community facing organisations. We tested this commitment further in over 1,400 twenty-minute interviews with a mix of domestic and business consumers, from which 92% of domestic consumers and 95% of business consumers found it to be acceptable.

1.5 Environmental Management System

Our Environmental Management System (EMS) is a based on a combination of risk analysis, control processes, observations and reviews that ensure we remain compliant with environmental legislation and take opportunities to improve our performance. The EMS commits us to a principle of 'continuous improvement'. Since our launch in 2005, the EMS has been certified to the ISO14001 international standard, and we emerged from our audit in September 2024 with no non-conformities.

A fundamental part of the EMS is the Aspects and Impacts register. This is a register of environmental risks and how we control them. As such, it is one of the foundations of our Environmental Action Plan, and in line with the principle of continuous improvement, the Action Plan can drive changes in the EMS by setting aspirational targets and goals while annual reviews of the EMS can provide insight into how commitments are delivered in practice. For example, we were praised in our recent audit for the high level of knowledge of environmental legislation and ecological functionality demonstrated by operational First Line Managers when dealing with a river crossing in Powys and scrub clearance along a pipeline in Swansea.

1.6 General Environmental Aspects

We categorise greenhouse gas emissions using the Greenhouse Gas Protocol Accounting and Reporting Standard, as either scope 1, 2 or 3.

Our Scope 1 emissions are from:

- Gas consumption associated with heating
- Using our fleet and company cars.

To maintain a safe gas supply, we are required to operate a large fleet of industrial and commercial vehicles, and to operate plant and machinery. These are mainly equipped with internal combustion engines (ICEs) and thus produce around 40% of our overall scope 1 to 3 emissions (43% location based excluding shrinkage AER 2024) although we are committed to introduce a limited number of battery electric vans in GD2.

To maintain an effective emergency response service, our vans need to respond to demand and have an onboard power source for tools. Battery electric vehicles are not able to deliver the operational power requirements of many of the vehicle duty cycles and therefore could only contribute to a small proportion of efforts to reduce fleet emissions. While battery electric heavy-duty vehicles exist, the charging requirements are not compatible with our operational reality. For example, it is more efficient for colleagues to park their vans overnight in their streets where they live; but there are no charge points in these residential areas many of which are terraced houses with no forecourts or guaranteed parking spaces. Vans also need to respond quickly and be able to refuel in minutes not re-charge in hours.

In summary, given the duty requirements, we do not feel that the energy required to carry around heavy batteries is a cost efficient or environmentally acceptable option for our customers. We are however, an active and enthusiastic partner in trials of hydrogen fuel cell electric vehicles and we are also monitoring efforts to develop direct combustion of hydrogen as a diesel replacement in a traditional combustion engine. We believe that while battery electric may be the solution for cars and light goods vehicles, the future of heavy-duty vehicles is hydrogen. While our scheduled replacement programme in RIIO-GD3 will see an increase in vehicles that meet the stricter Euro 7 emissions standard and a limited number of battery electric vehicles, we remain ready to take the opportunity for adding hydrogen fuelled vehicles if the market and refuelling infrastructure evolve within RIIO-GD3.

- Shrinkage

  Shrinkage has three components: gas we use in our own operations, gas that leaks out of some pipes, and gas that is stolen from the network. Shrinkage is forecast and reported using a model common to all four gas distribution networks. This is updated annually with actual asset and operational data to give an accurate reflection of methane emissions each year. The GDNs are currently running an innovation project named 'Digital Platform for Leakage Analytics (DPLA)'. This is exploring new technologies in methane detection and sophisticated analytic techniques with a view to further improving emission estimates and giving us more insight to plan investments to maximise emission reductions.

Our Scope 2 emissions are related to our electricity consumption. We have been on a 100% certified green electricity tariff since April 2021 which means that the electricity we consume is matched by the production of electricity from renewable sources. We also have our own solar panels on buildings and will increase our solar generation capacity in RIIO-GD3.

Our Scope 3 carbon emissions are the result of activities not owned or controlled by us but are a consequence of the work we do. This broad category includes emissions resulting from the purchase of goods and services.

Embodied Carbon is the entire amount of carbon dioxide (CO_2) emitted throughout the production, transportation and use of a product. It can also refer to the amount emitted through the lifecycle of a project including the embodied carbon of the materials used within that project. We calculate the embodied carbon of large construction projects and materials and services we use daily through our Scope 3 analysis, and report this in our Annual Environmental Report.

The 'waste hierarchy' ranks waste management options according to what is best for the environment. It gives top priority to preventing waste in the first place. When waste is created, it gives priority to preparing it for re-use, then recycling, then recovery, and last of all disposal (e.g. landfill). It is a widely adopted principle endorsed by UK government, and guides not only how we manage waste in our activities but how we can avoid waste arising through procurement and project design.

Biological diversity, known as biodiversity, is the variety of life on Earth. It includes genes, species, ecosystems and habitats. The human species depends on biological diversity for its own survival. Our activities have direct and indirect impacts on biodiversity; from the way we manage our land and buildings; from the construction of new gas infrastructure; from the manufacture and disposal of products we buy and use; from the way we travel, and from our management of chemicals and water.

Natural Capital is the parts of nature which directly or indirectly underpin value to people, including ecosystems, species, freshwater, soils, minerals, the air and oceans, as well as natural processes and functions. When we build new infrastructure, we have the potential to damage or enhance natural capital. This is particularly the case (but not exclusively) when working in rural locations. Our land remediation work, where we have cleaned up the industrial legacy of the gas industry, is an example of how we enhance natural capital.

1.7 Our RIIO-GD3 Aims

The combination of stakeholder and consumer feedback, technical advice, experience, and our environmental aspects and impacts managed through the EMS enables us to synthesise an environmental vision for RIIO-GD3 comprised of eight high level aims:

1. **Reduce shrinkage emissions now and prepare for the future.** Achieve the shrinkage model target of reducing shrinkage by *at least* a further 16% from our 2026 baseline by 2031. In doing so we will accelerate progress to being a Net Zero gas network which is ready for 100% hydrogen, achieving this primarily through the Iron Mains Risk Reduction Programme. We will also seek to use DPLA technology and innovations in pressure control mechanisms to support efforts to exceed the shrinkage model target.
2. **Work towards achieving long-term scope 1 and 2 emission reduction targets.** Using the GHG Protocol Corporate Accounting and Reporting Standard, we aim to reduce our business carbon footprint for scope 1 and 2 (excluding Shrinkage) on a pathway compatible with the Science Based Targets Initiative. Our aim is to achieve operational Net Zero status by 2050, benchmarking progress against an interim target of 37.5% reduction in scope 1 and 2 emissions by regulatory year 2034-5 from a 2019 baseline (excluding shrinkage). We note that our baseline was set prior to a change in business model which has impacted our Scope 1 emissions in RIIO-GD2, and that this impact is likely to continue in RIIO-GD3. SBTi methodology does not have a sectoral decarbonisation approach for gas distribution, and in collaboration with other gas networks, our ISG and Ofgem we will consider reviewing the SBTi aligned target before the end of RIIO-GD3, which could also account for the impact of our change in business model.
3. **Increase understanding of embodied carbon.** Continue to monitor embodied carbon in new projects and from the scope 3 category. We currently include embodied carbon in the Cost Benefit Analysis (CBA) of some major capital projects. Working with our contractors and partners we will quantify improvements in embodied carbon as part of progress towards net zero.
4. **Act on our supply chain emissions.** Reduce scope 3 emissions by encouraging our suppliers to reduce the embodied carbon of the products and services we buy, ensuring that at least 95% of suppliers by value meet the environmental requirements of our supplier code by end of RIIO-GD3, with 100% by 2040.
5. **Continue to improve management of waste and resources.** Apply the Waste Hierarchy to maximise resource efficiency and reduce costs, influencing our suppliers to embed Circular Economy principles in the supply chain. Monitor options for influencing waste collection and processing capacity in our region so that we send zero waste to landfill by 2050.

6. **Enhance action on biodiversity.** Protect natural capital and ecosystem services in our operations and through land management, achieving 10% biodiversity net gain (in accordance with Town and Country Planning Act 1990, England) in qualifying projects as a compliance minimum. Support our partners and communities to achieve regional, national and international nature goals. Support two major projects in our region that aim to achieve outcomes compatible with the Global Biodiversity Framework 2050 Vision and 2030 targets.
7. **Safeguard the legacy of our historic gasworks/holder sites land remediation programme.** Apply routine monitoring and maintenance at sixty-four sites and physical remediation at 9 sites, enhancing natural capital and community value where it is safe and appropriate to do.
8. **Maintain high environmental standards.** Continuously improve our Environmental Management System with the ambition of zero environmental incidents, and full compliance with environmental legislation. Anticipate and respond to changes as they occur and proactively respond to new opportunities.

These aims, and the process we undertook to identify them, is set out in more detail in the following sections.

1.8 Environmental Opportunities

Innovation

In RIIO-GD3 we will use the EAP to guide innovation in an operational context ("BAU Innovation") as well as projects using regulatory innovation stimuli or external funding.

Our BAU Innovation team (focussed on business as usual innovation rather than vulnerable customer / energy system transition funded innovation) co-ordinate the Innovation Committee, which is comprised of operational best practice first line managers. These colleagues receive ideas from within and outside the business that are focused on operational excellence and can choose to trial ideas, products and techniques and monitor their impacts. The Environmental Action Plan will provide clear guidance on the scale of ambition required so that ideas and products can be assessed in the context of their operational efficiency, safety, cost and contribution to achieving environmental targets. The Environmental managers will collaborate with the BAU Innovation team to formulate challenge statements. Projects can then be shaped, prioritised and funded accordingly to deliver solutions that advance the business towards the EAP targets.

Similarly, we will use the EAP to guide externally funded innovation projects that use funding routes such as Network Innovation Allowance (NIA) and Strategic Innovation Fund (SIF) or other non-regulatory routes. The Net Zero Innovation team facilitate external funding for projects primarily, although not exclusively, focused on achieving a net zero energy system. We consider how projects contribute to WWU and wider carbon reduction targets to assess their potential impact.

Our RIIO-GD3 Innovation Strategy sets out plans in this area, including how innovation can support aspects of reducing our carbon emissions and wider environmental impact. We also intend to use Net Zero and Reopener Development Use It or Lose It (UIOLI) funding in RIIO-GD3 to support small Net Zero facilitation projects, including those which support EAP commitments. These plans are set out in the Net Zero section of the Business Plan and further referenced in the Innovation Strategy (submission ref. 55).

Both innovation teams will be tasked with pro-actively looking for emission reductions at a scale commensurate with our SBTi aligned Net Zero target and with waste reductions and natural capital gain compatible with the ambitions of the EAP.

CASE STUDY: Hydrogen Van Trial

Hydrogen fuel cell electric vehicles (FCEVs) are in their infancy though they are expected to offer greater capacity and be a much better fit with our duty cycles. The results were very encouraging during a one-month trial of an early prototype FCE van that we ran in February 2024. Findings showed an operationally effective payload, a better range than an equivalent BEV and the potential for refuelling in a similar time to diesel – yet without range curtailment in cold conditions. Consequently, we are now working hard to develop further opportunities for trialling and acquiring FCEVs, to coincide with availability of low carbon hydrogen supplies and suitable refuelling facilities in our area. Stakeholders and consumers have also praised our hydrogen Fuel Cell Electric Vehicle trial, and there is broad support from all stakeholder groups for WWU's efforts to reduce fleet emissions.

1.9 A Net Zero Ready Network

Our vision and targets to support delivery of a Net Zero gas network are set out in our Sustainability Strategy, and the Net Zero section of our Business Plan. For the UK to reach Net Zero carbon emissions, we need to change virtually everything about the way we generate and use energy across our society.

We can accelerate the transition by maintaining a reliable and efficient network and continuing to invest in emission-reducing activities. In addition, we can support green gas connections for biomethane and blended hydrogen (see below) and prepare our assets and processes for potential repurposing to move 100% hydrogen.

In our Sustainability Strategy, published in 2023, we envisage our role in a Net Zero energy system. We describe that for the UK to reach Net Zero carbon emissions, society needs to make considerable changes in terms of the way energy is generated and used, which today, originates mostly from fossil sources – and that our network infrastructure can play a critical role in enabling this transition. There are three broad actions which can be taken across the energy system:

Use cleaner sources - Energy will need to come from alternative cleaner sources such as wind, solar, biomethane and low-carbon hydrogen.

Mitigate remaining emissions - Where greenhouse gas emissions cannot be completely removed, at least using current technologies and infrastructure, their impact can be reduced by capturing emissions at source or elsewhere.

Adopt new technologies – Energy users of all types will adopt new technologies which can reduce or eliminate emissions.

The transition will likely involve all three of these elements. As a Gas Distribution Network, our role is to facilitate the adoption of lower carbon gasses or mitigation measures, support the development and adoption of new technologies and prepare for a range of future outcomes, while maintaining secure, reliable and cost-effective services to customers.

We cannot deliver this vision alone: we need to work with communities in the areas we serve and with partners across the country. Our approach to delivering this activity and building the partnerships required to maintain pace is set out in Chapter 3.1 of our Business Plan (submission ref. 1): Supporting Net Zero; and within our Innovation Strategy (submission ref. 55).

1.10 Green Gas entry connections

We continue to facilitate the connection of biomethane production plants. The biomethane injected into our network is produced by anaerobic digestion of biomass materials like food, crop and animal waste. This process results in biogas which is then upgraded into biomethane and; after propane enrichment to increase the energy content and rigorous gas quality checks, is ready to enter the gas network. To ensure the safety and security of all the customers we are responsible for supplying, we monitor and are in control of the gas that enters our network from biomethane sites.

The use of non-fossil gas reduces the environmental impact of the gas we distribute within our network. By proactively supporting external business to connect their green gas to our network we are working towards the decoupling of heat from anthropogenic global warming. As of 2024, we have twenty one biomethane sources connected to our network, providing the capacity to deliver 1.81 TWh of green gas which is enough to heat around 160,000 homes. We're working with developers to connect and commission a further seven sites that have booked capacity with us over the next few years. In total, the twenty eight sites could provide heat to around 200,000 homes.

This may expand further in response to policy changes: the UK government issued a call for evidence in early 2024 on future support for green gas production. The Government and the industry are also developing policies on blended hydrogen connections for distribution networks, as detailed in our Innovation Strategy (ref. document 55).

In RIIO-GD3 we will measure progress through the number of enquiries we transition into active supply points, the volume and energy value of the gas supplied into the network, and the tonnes of carbon dioxide equivalent emissions avoided by this.

1.11 Partnership for Development of Natural Capital

The management of our land and buildings presents an opportunity to make space for nature. We will maintain a dialogue with stakeholders such as the Wales Environment Link, local authority biodiversity officers, charities and community groups to ensure that any positive action we take is proportionate and relevant to local biodiversity actions plans and where possible, maximises benefit for people.

We know that natural greenspace supports mental health, and we recognise that we have an opportunity to contribute to the well-being of our colleagues and the communities we serve by supporting nature on our land and on land owned by others. By doing this, we will also be contributing to social value goals within our region. An example of this is the land we own in Haverfordwest, Pembrokeshire; which is used by members of Grwp Resilience, a grassroots organisation dedicated to fostering resilience, sustainability, and social cohesion within communities. By collaborating with local citizens, Grwp Resilience actively engages in projects addressing societal and environmental challenges.

Fig 1: Biodiversity enhancements at Cambrian Place, Haverfordwest

Our Social Responsibility guidelines clarify the ways we support customers and communities beyond our licence obligations. In RIIO-GD3, action on corporate social responsibility and the Environmental Action Plan will be mutually supportive, and both will operate in the context of our Sustainability Strategy. We will therefore have a strategic overview of where and how we support others to deliver wellbeing through care for nature.

The development of initiatives such as the Taskforce on Nature-related Financial Disclosures and our continued membership of the UK Business & Biodiversity Forum will help us maintain a focus on translating national and global biodiversity perspectives into practical local actions. We will also work with our partners to gain a better understanding of how our work impacts ecosystem services. We will develop ways of measuring this impact with the goal of delivering net benefit on specific large infrastructure projects above a threshold and through the support we give to others.

We will use the Defra biodiversity metric to measure improvement but also report the number of sites and the area of land under management for biodiversity. We commit to supporting two large partnership projects and three smaller ones. A large project will be defined by its complexity, longevity, numbers of partners and scale of ambition; while it will be judged against its compatibility with the Global Biodiversity Framework 2050 Vision and 2030 targets. A clear plan that contributes to the thirty-by-thirty goal will be a desirable qualifying criterion.

Action on natural capital is compatible with the SBTi's concept of, 'Beyond Value Chain Mitigation'. This urges companies to take action beyond their supply chain to mitigate greenhouse gas emissions in addition to their target driven actions. Such action is encouraged especially if it generates co-benefits for people and nature.

1.12 Sustainability and Whole System Thinking

During RIIO-GD3 we will ensure that our Sustainability Strategy provides the framework for connecting delivery of the EAP with delivery of our strategies and policies that address other Sustainability Goals such as: our Equity, Inclusion and Diversity Strategy; the customer-focused Vulnerability Strategy; our training programmes; the actions from our Net Zero Innovation and Delivery Plan (focused on system evolution and informed by Future Energy Scenarios), and our staff well-being programmes.

EAP Aim	Relevant UN Sustainable Development Goals	Future Generations (Wales) Act Goals
Reduce shrinkage emissions now and prepare for the future.	7. Affordable & clean energy 9. Industry Innovation and Infrastructure 13. Climate Action	Prosperous Wales Globally Responsible Wales
Work towards long-term scope 1 & 2 emission reduction targets.	9. Industry Innovation and Infrastructure 13. Climate Action 17. Partnership for the goals	
Increase understanding of embodied carbon	13. Climate Action 17. Partnership for the goals	
Act on our supply chain emissions		
Better manage waste and resources	12. Responsible consumption and production	Resilient Wales
Enhance action on biodiversity	15. Life on land 14. Life below water 17. Partnership for the goals 3. Good health and well-being	Resilient Wales Healthier Wales
Safeguard the legacy of our historic sites land remediation programme.		
Maintain high environmental management standards		

Fig. 2 Main aims and relationship to sustainability goals

2 Part Two: Environmental Action Plan

2.1 Business Carbon Footprint

In RIIO-GD3 we will:

1) Retain an appropriate science-based target to reduce the business carbon footprint (BCF)

2) Commit to efficient and economic actions to reduce controllable BCF in RIIO-GD3

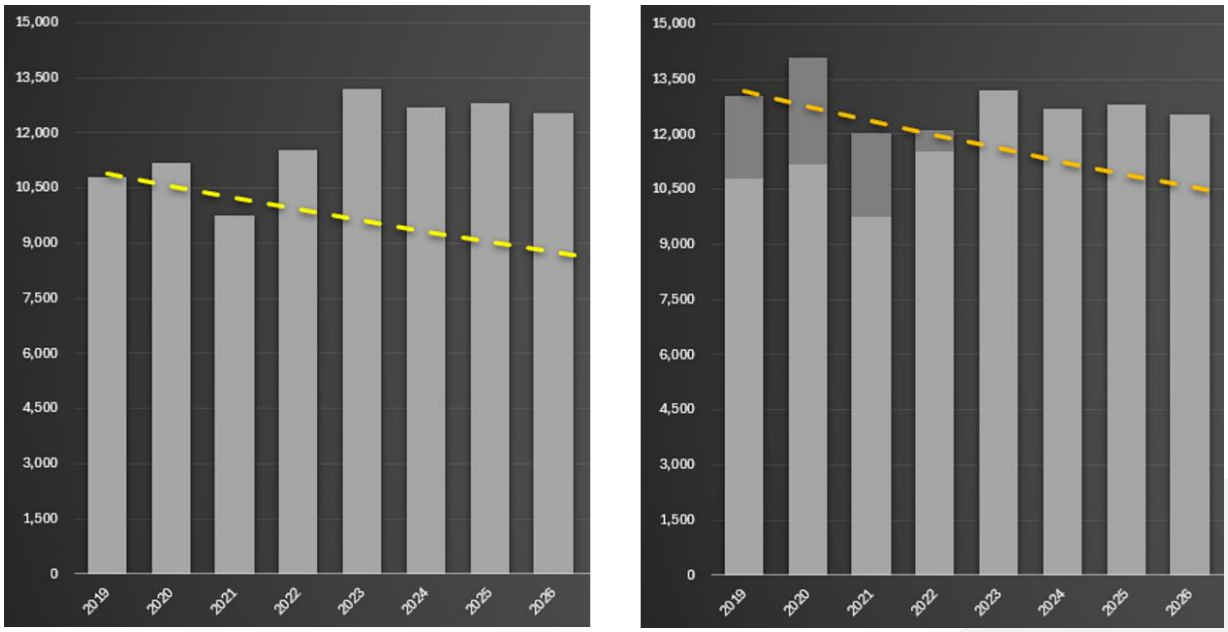
3) Report on BCF scopes 1 and 2, and progress towards science-based targets and net zero, using the GHG Protocol Corporate Accounting and Reporting Standard

4) Report on scope 3 emissions based on the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard

We maintain the target we have set to reduce greenhouse gas (GHG) emissions by 37.5% by regulatory year 2034-5 (well below 2°C) and subject to availability of funding and technology, reduce by 63% (1.5ºC) aligned with a science-based methodology, with a long-term vision to be a Net Zero company by 2050. This target was calculated using the Science Based Targets Initiative (SBTi) tool. The SBTi helps organisations calculate what their fair share of emission reductions should be, to help the world limit global warming by achieving the targets established by the Paris Climate Change Agreement in 2015. Currently there is no validated target-setting mechanism for the oil and gas industry, but we understand that work is ongoing to develop one and we will look to adopt this should it become available.

We set our baseline in 2019, using the then current SBTi Absolute Contraction Approach tool. In 2022, we in-sourced a large contractor workforce predominantly working on the mains replacement programme. This meant that the emissions produced by vehicles driven by the contractor, previously accounted for under scope 3, became emissions produced by vehicles driven by our own staff i.e. under our direct control and therefore scope 1. Our scope 1 emissions excluding shrinkage consequently increased above the baseline. Had the scope 1 baseline included insourced workforce and activity our glidepath to net zero, expressed in the trendline of year on year emissions reductions, would have been different. The extent to which actual emissions are higher or lower than the glidepath is an important measure of progress.

Fig. 3: Scope 1 and 2 exc. Shrinkage – GD2 glidepath without in-sourcing (left) and with in-sourcing before establishing baseline (right).



In figure 3, the glidepath built on in-sourcing before setting the baseline (right) is hypothetical and is provided to illustrate the impact on our reported emissions.

Irrespective of when we in-sourced and when we set the baseline however, our progress to the target when shrinkage is included is encouraging. **Including shrinkage, we are forecasting that we will achieve our 2034 target from 2032.** This is because shrinkage dominates our scope 1 emissions at around 96% of the total.

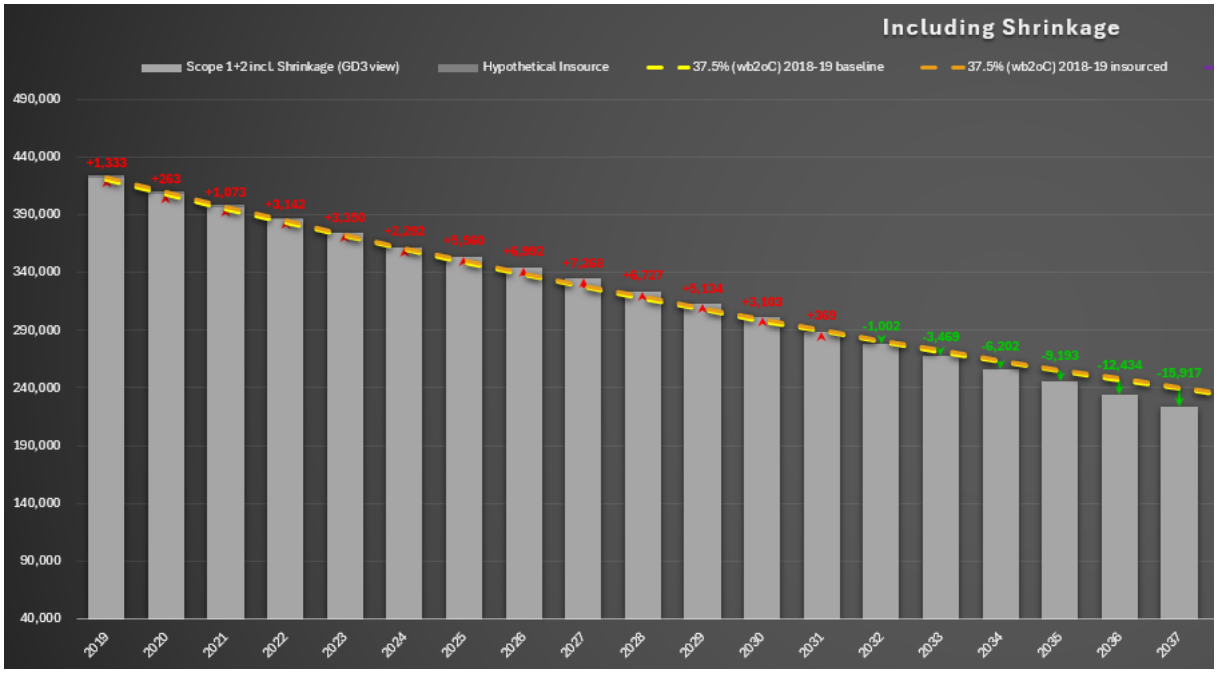


Fig. 4 Scope 1 and 2 emissions reduction glidepaths with and without insourcing

We separate out the target for shrinkage and the target for scope 1 and 2 excluding shrinkage so that efforts to reduce emissions from vehicles and other scope 1 and 2 elements can be more clearly evaluated.

We will continue to report our operational emissions separately from shrinkage in our annual environmental and regulatory reports, as we have in RIIO-GD2.

We acknowledge that since 2022, the Science Based Targets Initiative has altered its calculation methods to set organisational glidepaths that are compatible with limiting warming to 1.5 degrees Celsius. We are aiming to re-baseline using the SBTi target setting tool before the end of RIIO-GD3, in collaboration with other networks and Ofgem.

We have discussed our targets with our ISG and they have accepted our commitment to Science Based targets as aspirations recognising that cost and the availability of suitable vehicle technology will continue to make this scale of emission reductions challenging in RIIO-GD3. The rate of mains replacement can also impact emissions. As the ISG has advised, we remain open however to developments in policy from UK government and changes in both market and supply for low carbon technologies (particularly in transport – see below) that would enable us to advance in line with our aspiration. We recognise the value of SBTi aligned targets as indicators to assess decisions and opportunities across the business against the scale of emission reductions required. We know that the urgent need to reduce emissions means that even relatively small improvements in energy efficiency and emissions reduction are important.

- Our long-term goal is to be a Net Zero company by 2050.

We expect delivery of this goal to be facilitated by technological developments, government policy and regulatory decisions in RIIO-GD3 and beyond. Examples include the development of decarbonised gas production; low carbon options across our fleet requirements, and cost reductions. All of these will be required to achieve major emissions reductions in the 2030s and 40s, and we will continue to play our part in developing and understanding them through RIIO-GD3.

As we are on a 100% certified green tariff for electricity supplemented by solar panels on the roofs of four depots and head office, currently delivering a capacity of more than 120,00kWhrs, we have achieved Net Zero emissions for scope 2, by the market based GHG Protocol Accounting and Reporting Standard. We will continue to report both location and market-based emissions, to remain accountable for those associated with our local grid connection.

2.2 Shrinkage

Shrinkage is forecast and reported using a model common to all four gas distribution networks. This is populated annually with actual asset and operational data to give an accurate reflection of methane emissions each year. Forecasts are developed by applying our future asset plans to the model to understand the benefit and impact of our plans.

Methane emissions are a key factor in our assessment of asset risk, and reductions as a result of investment are a key benefit considered in our Cost Benefit Analysis (CBA). The table below shows the emission reduction benefits of our investment plan for each asset group over a 10 and 20 year period.

tCO2e reduction	Over 10 years	Over 20 Years	Primary Investment driver
LTS Pipelines	25	159	n
Offtakes & PRIs	146349	480070	n
Governors	9284	26245	n
Mandatory mains & services	734380	1960150	y
Non-mandatory mains & services	62302	169724	y
Risers (MOBs)	10339	24639	n

Methane emissions are a primary investment driver for mains and services. Replacement of these assets is critical to achieving our carbon reduction targets. The decision to invest in Offtakes, PRIs and governors is driven by health and safety legislation and risk of supply interruption, but emissions are a significant element of the CBA and subsequent investment decision process. LTS pipeline and riser intervention plans have safety as primary driver, but methane emissions are also a consideration. As we replace metallic mains and services, other asset groups become a larger proportion of our carbon footprint. We have innovation projects in our RIIO-GD3 plan to solve the problem of emissions on PRIs and governors with intentions to implement solutions as they are developed for implementation on scale.

- 16% reduction in shrinkage by 2031 from a 2026 baseline

The Gas Distribution Networks (GDNs) are currently running a collaborative innovation project named 'Digital Platform for Leakage Analytics (DPLA)'. This is exploring new technologies in methane detection and sophisticated analytic techniques, with a view to further improving emission estimates plus giving us more insight to plan investments to maximise emission reductions. As part of our plan for improving methane detection, we intend to survey our whole network annually using intelligent detection vehicles linked to analytical platforms. This is a key building block to enable the implementation of DPLA and moving emission reporting to increased actual reads and less estimation.

We have plans to implement DPLA in RIIO-GD3. There is still uncertainty around costs and timelines for implementation of the system but there is certainty on methane detection technologies. We have researched technologies, including satellites and permanent methane detection sensors. This has led to us including the following in base allowances:

- £4.2m over the 5 years for 3 Picarro methane detection systems and their analytics platforms
- £1.8m for 3 vehicles to host the systems and 3 operatives to drive and operate
- £1.0m for permanently installed methane detectors and telemetry

Costs of implementing the DPLA are not included in base allowances due to uncertainty. We believe this is best served through an uncertainty mechanism.

We are currently running a trial of Picarro, to be completed in 2025. We intend to have our full Picarro capability in place at the start of RIIO-GD3 and our permanent methane detection installations will be installed throughout the 5 years.

When there is certainty on DPLA in terms of success, the platform and readiness for use, we will act quickly to implement.

2.3 Emissions from vehicles and machinery

In response to the challenges described above (section 1.6 Environmental Aspects), we have been proactive in seeking alternative approaches to battery electric and internal combustion vehicles. We have been an active and enthusiastic partner in trials of hydrogen fuel cell electric vehicles and are also monitoring efforts to develop direct combustion of hydrogen as a diesel replacement in a traditional combustion engine. Based on current evidence we expect that battery electric can provide solutions for cars and light goods vehicles, with heavy-duty vehicles more likely to be reliant on hydrogen.

We will enter the price control period with an improved understanding of our operational fleet activity and aim to match vehicle type to location and workload so that we can deploy as many electric vehicles as possible without compromising service levels. We will examine the incentives for qualifying staff to lease battery electric vehicles, aiming for 100% of all leased vehicles to be low emission by 2031 with an increasing proportion of these being fully battery electric.

Table 1: Actions to reduce business carbon footprint

Ref.	Action	RIIO-GD3 Targets	Rationale	Activity Areas, subject to RIIO-GD3 funding	Long Term Target
C1	**Reduce leakage and shrinkage**	Reduce shrinkage by 16% by 2031 from a 2026 baseline. 20% reduction from a 2024 baseline We are forecasting our annual reported shrinkage to average 260GWh throughout RIIO-GD3	Methane is a powerful greenhouse gas. Largest contributor to our scope 1 & 2 at over 95%.	**Mains Replacement:** Estimated to deliver a 14% shrinkage reduction by end of RIIO-GD2 from a 2021 baseline. Will report progress via the following metrics: • Total shrinkage (in GWh); • Average pressure (mbar); • Modelled mains / services leakage at Year 5 pressure • Mains / services leakage at in-year pressure **Advanced Methane Detection:** Implementation of advanced methane detection technology emerging from the DPLA Project to report real-time emissions, coupled with a sophisticated analytics platform to improve targeting of mains replacement and leak repair. **Pressure Management:** Maintaining intelligent pressure management systems that optimise network pressures to a minimum, thereby reducing gas emitted from the main. Adopt cost-efficient innovations that avoid venting.	Net zero by 2050
C2	**Reduce emissions from the vehicles we own**	Reduce Scope 1 and 2 greenhouse gas (GHG) emissions by 37.5% by 2035 (well below 2°C) At least 30% of operational vehicles in use will be ULEV by March 2031 At least 30% of operational vehicles will be Euro VII by March 2031* 100% of all company cars to be ultra-low emission by 2031 with an increasing proportion of these being full battery electric.	Emissions from fleet are about 3% of total scope 1 & 2 emissions, circa 91% of scope 1 & 2 excluding shrinkage *Assume all ICEs are EUROVII	**Vehicle Replacement:** Increase the number of zero emission alternatively fuelled vehicles in our fleet. Using the RIIO-GD2 hydrogen van trials as evidence, aim to introduce hydrogen-fuelled vans into operational duty, subject to availability of suitable units that can deliver payload and duty cycle, refuelling infrastructure and finance. Report on progress annually explaining the choice of best suitable option given the constraints. **Reduce emissions from plant and powered tools:** Continue to adopt cost efficient options for alternatives such as electric mini diggers. Replace low power tools with battery electric options as part of maintenance and upgrade cycle. **Support Battery Electric Cars:** Provide efficient car charging infrastructure at head office and main depots. Encourage leasing of battery electric company cars over hybrid. **Report the carbon intensity of operational miles**	

Table 1.1: Actions to reduce business carbon footprint

Ref.	Action	RIIO-GD3 Targets	Rationale	Activity Areas, subject to RIIO-GD3 funding	Long Term Target
C3	**Reduce the embodied carbon of Excavations**	Use at least 50% recycled aggregate by 2031 Reduce scope 3 emissions Reduce Scope 1 and 2 greenhouse gas (GHG) emissions by 37.5% by 2035 (well below 2°C) excluding shrinkage	Re-instatement materials – around a third of scope 3 emissions.	Reduce the size of excavations: Progress innovative techniques via the operational BAU Innovation Committee. Reduce the amount of newly extracted stone, dust and sand used for re-instatement: Increase the amount of suitable recycled or re-purposed material. We will work collaboratively with the supply chain and local authorities to use more sustainable and low carbon materials (e.g. low carbon concrete, SMNR, BIOCHAR road surfacing, crushed glass, fly ash). As technology is proven as cost-effective and becomes readily available, we will commit to introduce into standard practice.	Net zero by 2050
C4	**Increase energy efficiency in buildings**	Reduce Scope 1 and 2 greenhouse gas (GHG) emissions by 37.5% by 2035 (well below 2°C) Increase amount of electricity generated for own use and export to grid measured as kWhs purchased, generated, and sold.	We are on a green tariff for electricity, but increased energy efficiency reduces locational demand on grid. Reducing gas used for heating buildings reduces scope 1 emissions	**Use electricity efficiently:** We have been using certified green electricity for all consumption since April 2021. We will use routine maintenance cycles as an opportunity to install energy saving measures & heating system upgrades where cost savings can be demonstrated. **Install smart meters:** We are currently identifying locations across the estate where smart meters will support energy efficiency analysis and subsequent intervention. We have budgeted £75,000 for Smart meters in RIIO-GD3. **Install solar in depots.** New depots have solar arrays fitted as standard but where the local grid connection allows, we will increase the level of Photovoltaics (PV) on existing buildings. We have budgeted £500,000 for solar panels in RIIO-GD3.	Net zero by 2050

Table 1.2: Actions to reduce business carbon footprint

Ref.	Action	RIIO-GD3 Targets	Rationale	Activity Areas, subject to RIIO-GD3 funding	Long Term Target
C5	**Reduce emissions through resource use and management**	Reduce scope 3 emissions, preparing for target setting in RIIO-GD4	We have capacity to reduce paper use as part of building an integrated IT data management system. By improving our understanding of embodied carbon, we can reduce emissions associated with resource use in projects.	**Digital Transformation and Paper Reduction:** Where cost-efficiency can be demonstrated, we will make efforts to digitise suitable documents, taking the requirement to digitise waste tracking as an opportunity to explore alternatives to other paper forms, and review business processes to reduce paper consumption and eliminate the need for printing. **Reduce embodied carbon in projects.** We will work with contractors to calculate the embodied carbon of projects above a threshold of £25m. We will use learning and benchmarking from projects to drive down embodied carbon emissions. Pilot studies on smaller projects in RIIO-GD2 will form the basis of a review mediated by the BAU Innovation team of actions to take in RIIO-GD3. Continue to report embodied carbon as in RIIO-GD2 AERs.	Net zero by 2050
C6	**Reduce emissions in the supply chain**	Reduce scope 3 emissions, preparing for target setting in RIIO-GD4 Scope at least one major collaborative supply chain project in RIIO-GD3, aiming to initiate before 2030.	Purchased goods and services account for the majority of scope 3 emissions. There is a growing opportunity across the economy for business-to-business collaboration on achieving net zero with many support organisations able to help collaboration on reducing embodied carbon in products and services	**Engage and Support the Supply Chain:** Supplier mapping has created a picture of the number of suppliers adopting effective environmental management systems and those already recording their carbon data. A revised Supplier Charter was published in January 2024 and accompanies the supplier mapping questionnaire. We are standardising the Pre-Qualification Questionnaire (PQQ) to achieve consistency in supplier performance on carbon/emissions management. We will look for further opportunities to support suppliers to improve their emissions reduction through in-contract monitoring and collaborative training. Explore collaborative initiatives: This collective work will be with industry peers and support organisations, to develop innovative solutions for reducing embodied carbon and achieving Net Zero goals.	Net zero by 2050

Table 1.3: Actions to reduce business carbon footprint

Ref.	Action	RIIO-GD3 Targets	Rationale	Activity Areas, subject to RIIO-GD3 funding	Long Term Target
C7	**Reduce emissions from non-operational travel**	Reduce the carbon intensity of non-operational travel – tCO_2e per mile.	Travel by company cars and business miles driven in private vehicles produce emissions.	**Influence choice of travel mode for business trips:** encourage colleagues to use the sustainable travel hierarchy. **Maintain Cycle to Work** and consider other schemes to promote active travel. **Support use of battery electric vehicles through increased opportunity for re-charging at our sites.** Increasing the number of chargers with flexible payment will make it easier to operate BEVs. Support employees to avoid unnecessary travel, using remote meeting technology.	Net zero by 2050
C8	**Offset unavoidable emissions**	Offset 100% of unavoidable emissions from our air, rail and HGV travel.	Off-setting through verified schemes is an acceptable practice for unavoidable emissions. We have no current technological solution for emissions from certain sources e.g. HGVs	**Sustainably offset unavoidable emissions:** In addition to Heavy Goods Vehicles (HGV) emissions, we will offset international flights where we are required to attend overseas meetings called by our parent company. We recognise that this should not displace activity to reduce emissions in the first place.	Net zero by 2050

2.4 Natural Capital and Environmental Net Gain

In RIIO-GD3 we will:

1) Continue our land management programme for historic gas sites.

2) Use the Defra biodiversity metric to measure biodiversity net gain on activities that require this as part of planning consent and on projects either under our direct management or the management of others where biodiversity net gain is a stated goal.

3) Report annually on changes in natural capital and ecosystem services provision in projects/activities where this is a stated aim, for example management of our Bristol depot's nature area.

4) Report on actions taken to assess and remedy the impacts of activities conducted within National Parks.

Operating to protect and enhance our natural environment is a core value of our business. We recognise that the communities in which we work and live are dependent on the healthy functioning of natural ecosystems. Over many decades of development, this supporting ecosystem comprising a mosaic of habitats, has become fragmented. While our gas distribution network comprises many sites, most have limited land footprints, but they are part of the wider ecosystem, and some have the potential to contribute to the reconnection of habitats. These sites primarily serve functional purposes like gas assets and storage equipment, offices, or depots but within the limitations of gas safety, they could be adapted to support biodiversity. This varied portfolio structure means a one-size-fits-all approach to natural capital valuation is not the most efficient use of resources.

We currently take a targeted approach using the approved Defra Metric for individual site assessments. In RIIO-GD3 we will use Global Information System software and data to increase our understanding of the biodiversity potential of our land portfolio. This will allow us to tailor our efforts to areas with the most significant potential for improvement and deliver the greatest value for our customers. We have not set a de-minimis area limit; although some of our sites may be small, we will continue to look for potential natural capital enhancements where appropriate.

We recognise that our larger capital infrastructure projects have the potential for major disruption to natural landscapes and ecosystems. While these types of projects are usually associated with stringent compliances intended to protect nature, we want to make a general 'beyond compliance' contribution to the natural capital of our region. To do this we will consider the suitability of co-managing our own sites, particularly former gas holder remediated sites, but also seek out ambitious and well managed projects that we can support through partnership. This support will be mediated by our corporate social responsibility standards and qualified against the expected biodiversity and natural capital benefits it will help to deliver.

We own a portfolio of one hundred and sixty-nine former gas production sites (gasworks) and former gasholder sites. We take a proactive approach to manage and minimise statutory environmental risk associated with these historical sites. In RIIO-GD3 we will continue to make investments to manage statutory risk at seventy-three of our sites, based on our process of assessing potential risks and fulfilling legal duties in accordance with current site use. Investigation involves excavation to reveal historical structures such as below ground tar tanks. Boreholes are also drilled into the groundwater tables beneath the site. Samples are then sent away to an independent laboratory for analysis. This helps to build up a picture of site conditions and gain greater detail on the sources and levels of contamination. Findings then determine whether remediation is required and if so, what areas of site need to be focused on.

The remaining ninety-six sites have been assessed as currently not posing an unacceptable risk to human or environmental health. As supported by our stakeholders, we will consider options for using these low-risk sites to support biodiversity either through our direct management or by working with others.

Table 2: Natural Capital detailed actions

Ref.	Action	RIIO-GD3 Targets	Rationale	Activity Areas	Long Term Target
NC1	**Deliver Environmental Net Gain through strategic partnership and collaboration:**	Support two major partnership projects [WWU contribution greater than £20,000] and at least three smaller ones [WWU contribution £5 - £15k]	While we own a large portfolio of landholdings, the majority have limited potential to deliver biodiversity net gain. Our ability to deliver biodiversity net gain on daily work and small projects is also limited as the land in which we are working is not directly owned by us and the effort required does not equate to good value for the consumer. There is more opportunity to deliver wider social value and greater biodiversity gain by supporting others to work on managed projects either on our own land e.g. Cambrian Place, Haverfordwest, or land owned by others.	Develop a portfolio of suitable natural capital sites that we support in the localities where our work has the greatest impact. Supported projects can either be on our land or that owned by others. Qualifying projects will need to have a detailed long-term management plan, with a mechanism for measuring biodiversity gain and/or net benefit through ecosystem service enhancements and will need to be able to demonstrate social value by providing benefits or opportunities to residents or people from a specified demographic.	Set SBTi targets for nature
NC2	**Structured tree planting programme to achieve set targets.**	Plant at least 6,000 trees per year up to a maximum target of 40,000 in RIIO-GD3	While our previous 'five for one' target aimed to balance tree felling with replanting, we've found it challenging to accurately track each felled tree. To streamline this process and maximise our environmental impact, we will implement a more efficient planting programme with a significantly higher target.	We will work with community groups and focus on areas where tree removal was necessary for safety: • Plant native species in their natural habitats. • Contribute to environmental sustainability of the regions we work in. Aim to ensure that trees are planted strategically where they can add to ecosystem services such as flood prevention or improved urban air quality.	Set SBTi targets for nature

Table 2.1: Natural Capital detailed actions

Ref.	Action	RIIO-GD3 Targets	Rationale	Activity Areas	Long Term Target
NC3	**Safeguard the legacy of our historic sites land remediation programme.**	Deliver seventy-three outputs. Investigate seventy-three sites (Outputs) to assess and address statutory risk associated with the legacy of historical contamination.	This is a statutory obligation. By RIIO-GD3 the former gas production site portfolio will be relatively mature, and mitigation of statutory risk is anticipated to focus on Routine Monitoring and Maintenance (RMM) with up to nine sites progressing to physical remediation. The Land Management Programme will be flexible and if a site with a more urgent need for remediation becomes apparent, this will be prioritised.	In RIIO-GD3 we will continue to make investments to manage statutory risk at seventy-three of our sites, based on our process of assessing potential risks and fulfilling legal duties in accordance with current site use. 9 sites will likely progress to remediation or installation of cover pathway break layer (depending on the findings of the site investigation stages). RMM Outputs = 64 Remediation (R) Outputs = 9 Land remediation budget = £6.87m	Set SBTi targets for nature
NC4	**Improve the biodiversity on the land and buildings we own**	Thirty sites within our land portfolio will include support for nature and biodiversity by 2030	Our buildings are functional, industrial/commercial structures with little or no accommodation for nature. There is a robust body of evidence that mental health is improved and productivity is increased by greener surroundings. Our land holdings are often secure sites where the only human intrusion is from our own staff.	**Greener built environment:** More green roofs for kiosks and buildings where appropriate; more trees providing shade in car parks; bird/bat boxes/hibernacula at suitable sites. We have allocated £155,000 for biodiversity enhancements in our RIIO-GD3 property plan. **Geographic Information System (GIS) Land holdings database:** Creation of a GIS land holdings database using Lidar and satellite data to classify land holdings according to ecological status, risk, and opportunity for community use or asset transfer. **KPI:** Thirty locations - land holdings and buildings - will have received investment/ improvement for biodiversity by end of regulatory year 2030-31.	Set SBTi targets for nature

Table 2.2: Natural Capital detailed actions

Ref.	Action	RIIO-GD3 Targets	Rationale	Activity Areas	Long Term Target
NC5	**Integrate biodiversity in decision making at every level**	Biodiversity net gain measured across all sites including partnership project locations. Compliance achieved where relevant Numbers of audits or audited suppliers/ suppliers engaged. Narrative qualitative case studies Zero environmental incidents and non-compliances	This is Target 14 of The Kunming-Montreal Global Biodiversity Framework (GBF). Adopting it demonstrates that we accept our share of responsibility at both a local and global scale. The EMS currently mediates our mitigation of impacts through management procedures and operational guidance. Biodiversity / nature referenced in procurement.	**Measure biodiversity:** We will continue to use the Defra metric for small projects. New connections and network projects will report on biodiversity if planning permission requires. If these are in National Parks, we will report on actions taken to assess and remedy the impacts of activities in accordance with the National Parks and Access to the Countryside Act 1949 (Section 11A). **Work to be able to measure ecosystem services and natural capital net gain:** We will collaborate with partners such the UK Business Biodiversity Forum and the Wales Environment Link to improve our understanding of methodology to measure gains in natural capital and ecosystem services and will adopt these measures as appropriate. **Improve our understanding of Biodiversity Impacts in our supply chain.** As an extension of the work done in RIIO-GD2 and linked to supply chain actions on waste and carbon, we will improve our analysis of the biodiversity impact of our major suppliers. We will ask for copies of their biodiversity action plans; conduct audits to check compliance with environmental regulations; plus enhance use of sustainable materials and waste management practices. We will use innovation funding to develop partnership projects on measuring Biodiversity Net Gain (BNG)/Environmental Net Gain (ENG). **Maintain up to date guidance and management procedures for land management habitats.** Ensure colleagues understand that duties of care extend beyond legal compliance to reflect the global and existential importance of biodiversity and natural capital. Monitor compliance through the Environmental Management System (EMS), internal audit and develop training as required.	Set SBTi targets for nature

2.5 Resource Efficiency and Waste

In RIIO-GD3 we will:

1) Update procurement processes to embed Circular Economy principles

2) Reduce spoil to landfill and send less than 5% of total excavated spoil to landfill by 2031

3) Reduce operational and depot waste with a minimum of 80% of non-hazardous waste reused and recycled by 2031

4) Increase use of recycled aggregate to 50% by 2031

5) Reduce waste from offices and support services by 25% from 2024 levels by 2031

The evolving regulatory landscape around waste management, with stricter environmental standards and the potential for significant fines, highlights the urgent need for effective practices and ambitious targets. We are committed to minimising our environmental impact and reducing waste from all sources with a view to being a zero-waste company by 2050. In 2023, ahead of the upcoming legislation changes in Wales and to gain a better understanding of our performance, we commissioned a thorough review of our waste management practices. This review compared our performance to best practice, legislation and our own internal policies and procedures. The information collected has underpinned our ambitious waste reduction goals for RIIO-GD3, which are outlined in this section along with the strategies we will employ to achieve them.

- Natural resource extraction

Excavations produce hazardous and non-hazardous waste, and this must be disposed of in the least environmentally harmful manner. Non-hazardous excavation spoil can be recycled where local facilities allow. Following completion of work on buried assets, excavations need to be backfilled. Virgin aggregate, extracted from the natural environment, is sometimes the safest and most effective re-instatement material. The supply and performance of recycled alternatives is improving all the time however, and we anticipate a steady decline in the use of newly extracted material. We have been pro-active, engaging the suppliers of re-instatement material to co-develop products that meet our performance needs. We have committed to a phased reduction in virgin aggregate to reach a target of 50% recycled materials by 2031, and we expect to evolve towards 100% use of recycled materials in RIIO-GD4.

- The processing of excavated materials / Hazardous waste management / Office and depot waste

We have achieved our target of, 'reuse and recycle at least 80% of excavated spoil by 2026,' sending almost zero spoil to landfill. The aggregate and spoil recycling sector is growing rapidly. Landfill space is increasingly limited, so a restorative and circular approach is evolving in the supply chain. We will continue to actively engage with suppliers of aggregates and spoil, choosing not only the most cost-effective solutions but the least environmentally harmful. We have found that recycled materials are now price competitive or cheaper than newly extracted materials and that is without factoring in the whole lifecycle costs of environmental damage.

Through better understanding of behavioural factors, we will drive down our residual (black bag) waste and apply the waste hierarchy rigorously in all parts of the business. A key area for this approach will be the supply chain. We aim to continue the supplier engagement started in RIIO-GD2, and develop engagement projects with peers, suppliers, and third-party experts that reduce waste arising in the supply chain.

- Efficient use of plastic pipe

Polyethylene pipe is a proven replacement for old and corroding metal pipes. It offers long-term performance with greatly reduced leakage rates and is suitable for the transport of hydrogen. The feedstock for plastic production however is generally fossil-derived mineral oil and this is a sound reason for minimising its wastage.

For RIIO-GD2 we voluntarily adopted a target to reduce high density polyethylene pipe waste. This was not universally adopted across all the GDNs. We have gained a greater understanding in RIIO-GD2 of the complexities of plastic pipe supply, storage and use. What we labelled 'waste' at the start of RIIO-GD2 is in fact collected by the supplier to be recycled into pipe for things like guttering. In RIIO-GD3 we therefore consider it most appropriate to commit to investigate, monitor and manage plastic pipe use in our network to ensure that pipe is used as efficiently as possible, minimising storage times and optimising the amount of off-cut collected for recycling. We will report progress yearly in our annual environmental reports.

Table 3: Resource Efficiency and Waste Reduction Actions

Ref.	Action	RIIO-GD3 Targets	Rationale	Activity Areas	Long Term Target
WR1	**Reduce spoil to landfill**	Reuse and recycle 95% of excavated spoil annually	Unless hazardous, spoil is a resource. Many options now available for recycling and re-use. 99% excavated spoil reused or recycled in 2023-24	Pro-active engagement with spoil recycling supply chain. Closure of landfill options and market moving towards recycling and re-use is accelerating change.	Zero to landfill by 2050
WR2	**Reduce waste from offices, depots & support services**	Annually report total waste and fate of waste. Send less than 5% of waste to landfill each year. Achieve greater than 95% waste reused and recycled by 2031	New legislation requires pre-segregation – a more stringent regime to improve recycling rates. There are growing options for re-use of hardware. Digitisation to reduce paper use. Engagement to influence behaviours. The ability to divert from landfill depends on suitable facilities in our area.	**Use digital resources** to replace the need for printing without compromising the standards of service offered to customers **Maximise participation in recycling/zero-waste initiatives** e.g. Terracycle for materials not currently collected by contractors e.g. batteries, hard plastics, or empty snack wrappers. **Work with charities:** Additional to IT contracts that include take back and recycle, we will look for opportunities to donate IT equipment to charities where data security is not an issue.	Zero to landfill by 2050 Enable Circular Economy
WR3	**Use resources efficiently in backfill and reinstatement**	Increase use of recycled aggregate to 50% by 2031	Aggregate extraction destroys natural ecosystems and erodes natural capital. Virgin extraction has a higher embodied carbon value than recycled aggregate. RIIO-GD2 target was: Increasing use of recycled aggregate to greater than 20% by 2026. 15% achieved in 2023-24.	**Reduce the amount of newly extracted stone, dust and sand used for re-instatement,** increasing the amount of suitable recycled or re-purposed material. We will continue to work collaboratively with the supply chain to use more sustainable materials and continue to build the supply chain options for recycled aggregate. As technology is proven and becomes readily available, we will commit to introduce into standard practice factoring-in the carbon/natural resource saving in a cost benefit analysis.	Zero to landfill by 2050 Enable Circular Economy

Table 3.1: Resource Efficiency and Waste Reduction Actions

Ref.	Action	RIIO-GD3 Targets	Rationale	Activity Areas	Long Term Target
WR4	**Reduce waste arising in supply chain**	95% of suppliers (by spend) will meet the environmental standards set out within our Supplier Charter by 2031 80% meeting supplier code (Written acknowledgement of Supplier Charter)	We should use our influence to support a circular economy, playing our part in generating demand for products that are re-used, recycled, repurposed and are associated with less production and packaging waste. Supplier mapping has created a picture of the number of suppliers adopting effective environmental management systems. A revised Supplier Charter was published in January 2024 and accompanies the supplier mapping questionnaire.	**Apply the waste hierarchy in procurement and resource management:** Continue to challenge suppliers to reduce packaging waste, and incorporate take-back, refurbishment and recycle into the supply of tools and equipment. Apply in-contract monitoring to quantify impacts. **Engage and Support the Supply Chain:** We will look for further opportunities to support suppliers to improve their resource efficiency and application of circularity principles through in-contract monitoring and collaborative training where funding allows. We are open to collaborating with other companies on innovation projects that reduce waste and promote circular resource use in the utility sector supply chain and will continue to discuss this with potential partners. Report as: Qualitative narrative case studies. Numbers of suppliers engaged. £ value of product now circular. % of supply chain by £ value now circular	Zero to landfill by 2050 Enable Circular Economy