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Ofwat's regulatory framework and net zero

About this document

In January 2022, the Secretary of State for Business, Energy and Industrial Strategy issued an open letter to the Chief Executives of Ofgem, Ofwat, and Ofcom, outlining its strategic priorities for the utilities sectors. In particular, Ofwat was asked to consider the compatibility of our regulatory framework with the UK Government's Net Zero Strategy pathways to 2050 and interim carbon budgets. This document is our response to that request.

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1. Introduction

1.1 Background

In January 2022, the Secretary of State for Business, Energy and Industrial Strategy [wrote an open letter](#) to the chief executives of Ofcom, Ofgem and Ofwat setting out the government's strategic priorities for the utilities sectors. In that letter, the Secretary of State asked Ofwat to review its regulatory framework for its compatibility with the [UK government's Net Zero Strategy pathways to 2050](#) and interim carbon budgets, reporting back by Summer 2022.¹ The letter also highlights a role for regulators in achieving net zero through encouraging competition and innovation to secure the new infrastructure investment needed to meet net zero, as well as supporting the decarbonisation of existing infrastructure. This document is our response to that letter.

1.2 Summary

Ofwat's regulatory framework is enabling water companies to deliver on the government's interim carbon budgets and the Net Zero target for 2050. Current and planned water company actions are reflective of the UK government's Net Zero Strategy pathways. These include actions to decarbonise water and wastewater treatment, technological innovations, renewable energy generation and usage, as well as considering net zero in the development and delivery of strategic water resources solutions.

We are looking to the industry to identify the right approaches to net zero, encouraging the sector to innovate whilst also demonstrating the value and robustness of their responses through established accreditation standards, initiatives, and frameworks. We believe this overarching approach, embedded in the context of using markets to deliver for customers, combined with growing clarity on our climate change expectations for water companies, will enable companies to respond in ways best tailored to local and regional circumstances.

At PR24 we are proposing to incentivise water companies to deliver on net zero, through the introduction of a common operational greenhouse gas (GHG) emissions performance commitment (PC).² Where companies have the ability to report on embedded emissions in a comprehensive and consistent way, we are proposing to allow such companies to develop a bespoke PC for embedded emissions at PR24.

¹ The UK government's Net Zero Strategy includes a number of pathways for different sectors to reach net zero by 2050. The following sectors have pathways: power, fuel supply & hydrogen, industry, heat and buildings, transport, and natural resources, waste and F-Gases. There is no specified pathway for the water sector as a whole, however, there are targets and actions for wastewater under the natural resources pathway. Actions that the water sector are currently taking will contribute to the achievement of other sectoral pathways outlined in the strategy.

² Ofwat, [Consultation of regulatory reporting for 2021-22 – Responses document](#), October 2021.

We anticipate that the water sector's approach to net zero will draw upon and include a range of approaches and actions associated with the decarbonisation pathways for different sectors, including the 2037 indicative pathway, outlined in the UK government's Net Zero Strategy.

Whilst there will be commonalities of approach between companies, we expect to see diverse responses. This diversity will be driven by the specific focus of the business (water only versus combined), local and regional factors, as well as the quality and ability of the local environment to support mitigation responses, particularly nature-based solutions (NbS). Such diversity is key to achieving net zero, and a market-based approach will further enable companies to focus on outcomes, affording them the ability to innovate and tailor service delivery to the needs of consumers and the environment in their areas of operation.

The following sections outline, first, Ofwat's duties with regards to net zero; second, our approach to net zero; and, third, the compatibility of our regulatory regime with the UK government's Net Zero Strategy pathways and interim targets.

2. Ofwat's duties and net zero

Ofwat does not have a specific formal climate change or net zero duty. However, our duties, as outlined in the Water Industry Act 1991, are sufficiently broad as to provide scope for us to take climate change mitigation, which the UK government's net zero target is aimed at, into account when carrying out our functions. This includes our consumer duty, which embraces both existing and future consumers, and our resilience duty, which requires us to secure the long-term resilience of water supply and wastewater systems in the face of environmental pressures, population growth, and changing consumer behaviour, including by promoting the sustainable management of water resources. We also have a secondary duty to contribute to the achievement of sustainable development.

Ofwat also carries out its work in accordance with expectations detailed in the UK and Welsh governments' respective Strategic Policy Statements (SPS). The [UK government's SPS](#) states companies should have regard for the policies and proposals set out in the UK government's Net Zero Strategy, and specifically recognises Ofwat's role in scrutinising and challenging companies' business plans in this respect. We are also expected to facilitate long-term, adaptative, and resilient drainage and wastewater services. The SPS includes a resilience priority for Ofwat to challenge the industry to plan, invest in and operate its water and wastewater services in a way that delivers value to customers, the environment and wider society over the long-term. Ofwat is also expected to use markets to deliver for customers, including in relation to major infrastructure provision and bioresources. The SPS also expects Ofwat to challenge companies to meet the ambition set out in the [Water Industry Strategic Environmental Requirements](#) (WISER). The WISER includes non-statutory expectations that companies will contribute to achieving net zero.

The [Welsh government's SPS](#) makes it clear that Ofwat is expected to encourage companies to develop clear, robust plans for how they propose to achieve net zero and how their actions contribute to the achievement of net zero in Wales.

3. Our approach to net zero

In our strategy, '[Time to act, together](#)', we committed to strengthening the sector's approach to climate change mitigation and adaptation, building on the companies' previous commitment to achieve net zero emissions by 2030 and pushing them to do everything they can to be ready for the challenges climate change will bring. This involves ensuring companies meet long-term challenges whilst delivering more for customers, society, and the environment.

The UK water sector is responsible for about a fifth of UK waste sector's GHG emissions, accounting for approximately 1% of total UK GHG emissions.³ Consequently, water companies have a role to play in the overall context of the UK government's net zero target, and proportionally have a big role to play in decarbonising the activities of the 'Water Supply, Sewerage, Waste Management and Remediation' sector, which is the fifth largest emitter of GHG emissions in the UK.

Ofwat has an important role to play in supporting the water sector to anticipate and proactively respond to the risks, opportunities, and uncertainties of climate change. In turn, we need to ensure the water sector meets the needs of current and future consumers in an operating environment that is decarbonising at an appropriate pace; is adaptive, accountable, and transparent; with inclusive partnerships, trust, innovation, and value for money at its core. In developing our approach to net zero, we are working to remove real or perceived barriers to company action in this space due to the regulatory framework. For example, we are working with the sector to improve reporting of GHG emissions, forming partnerships and collaborating with other regulators, and have established our [Innovation Fund](#).

3.1 Principles shaping action

Ofwat is supportive of the water sector's work on net zero, welcoming the leadership and vision encapsulated by [Water UK's 2030 Net Zero Routemap](#) (hereafter the Routemap), as well as individual company plans on net zero. However, the Routemap does not address embedded emissions, emissions from the use of chemicals, or disposal of sludge to land. Therefore, its focus is partial, and it is not clear how interim and final net zero targets will be achieved.

Responding to these issues, in January 2022, we published our [net zero principles position paper](#). Our principles paper is designed to support companies in their planning for net zero,

³ For more information see the Climate Change Committee, [The Sixth Carbon Budget: Waste](#), 2020 & Zafeiridou, M., Kirkman, R., Kyle, C., McNeil, S., Voulvoulis N. [An exploration of the resource sector's greenhouse gas emissions in the UK, and its potential to reduce the carbon shortfall in the UK 4th and 5th Carbon budgets](#). Imperial College London, Centre for Environmental Policy, 2018.

in particular through their business plans for PR24. Our principles paper makes clear that we expect companies:

- to ensure their net zero plans are clearly linked to national government targets;
- action on net zero to encompass both operational and embedded emissions;
- to prioritise the elimination and reduction of GHG emissions before the use of offsets, utilising the GHG management hierarchy in doing so.

3.2 Monitoring and reporting

As noted in the UK government's Net Zero Strategy, better data is integral for achieving net zero. In addition, effective monitoring and reporting processes are essential for ensuring companies are held to account, with the impact of their actions and calls for investment made clear.

In 2021-22, Ofwat introduced standardised annual mandatory reporting of operational GHG emissions. We are continuing to work with water companies to go further and faster in relation to their ability to report on the embedded GHG emissions arising from their activities.⁴

3.3 The price review and market-based incentivisation

As the economic regulator for water services in England and Wales, the price review process is our key tool for incentivising and enabling companies to address the priorities of the UK and Welsh governments, not least in relation to net zero.

Water companies are currently reducing GHG emissions through their everyday expenditure focused on the maintenance and delivery of infrastructure. However, at PR19 (the price review period covering 2020-2025) companies were permitted to develop optional performance commitments to further incentivise them to make progress in areas they identified as important. As a result, eight companies developed operational GHG emissions PCs for the 2020-25 period, although most without financial incentives. Two companies also developed PCs for embedded GHG emissions.

For PR24 we expect all companies' plans to make substantial progress towards national governments net zero targets and want to see concerted action to address both operational and embedded emissions in parallel.⁵ We therefore expect all companies to not only deliver

⁴ For example, whilst there is currently no standardised methodology for reporting embedded emissions, we have set out in our regulatory accounting guidelines how companies can report these in a more standardised way for 2021-22 and aim to introduce a form of mandatory reporting in 2022-23.

⁵ Ofwat, [Creating tomorrow, together: consulting on our methodology for PR24 Appendix 9 - Setting expenditure allowances](#), July 2022.

further improvements through everyday expenditure during 2025-30, but to also identify additional actions and activities that will further reduce GHG emissions where these are appropriate and evidenced as best value.

At PR24, we propose to set a common reduction level for operational emissions with this being incentivised through a common performance commitment (PC), designed to encourage efficient expenditure. Where companies propose to go beyond this target, we propose considering bids on a competitive basis through a net zero challenge fund. This will allow additional net zero enhancement funding to drive further improvements. Funding will be concentrated on the most efficient companies. This approach is designed to ensure additional and faster improvements are made at the lowest cost. Learnings from this investment process will be shared, allowing all companies to implement identified solutions.

Where companies are able to robustly report on their embedded emissions the intention is for all such companies to develop a bespoke PC aimed at tracking and encouraging the reduction of such emissions.

3.4 Collaboration, partnerships, and innovation

The Secretary of State's letter to the utilities' regulators highlights that there is an active role to be played by the UK Regulators Network (UKRN) in sharing net zero best practice. Ofwat is an active member of UKRN's climate change network. We led on initial work facilitating net zero knowledge transfer, chairing this group, as well establishing the net zero costings group.

More broadly, we are also increasing our engagement with the sector. In particular, we have increased our participation in a number of steering and research groups focused on addressing the inherent challenges of net zero. To date, Ofwat has supported Water UK's Net Zero 2030 Routemap Steering Group, and UK Water Industry Research (UKWIR) projects on mitigation and adaptation. We are also engaging with the revision of PAS 2080:2022; a standard for Carbon Management in Buildings and Infrastructure.

Ofwat has also led on the establishment of the Regulators' Alliance for Progressing Infrastructure Development (RAPID). Established in 2019, RAPID is a cross regulatory alliance (consisting of the DWI, Ofwat and EA) focused on facilitating and accelerating the development of new large-scale strategic water supply solutions. Infrastructure proposals progress through a series of gated assessments, and as proposed solutions develop there is an expectation for carbon accounting and reducing greenhouse gas emissions.^{6,7,8}

⁶ RAPID, [Strategic regional water resource solution guidance for gate two](#), 2022.

⁷ UK Government, [Water resources planning guideline](#), 2022.

⁸ Welsh Government, [The Welsh Government Guiding Principles for Developing Water Resources Management Plans \(WRMP's\) for 2020](#), 2016.

At PR19, we introduced a £200 million Innovation Fund to grow the water sector's capacity to innovate, enabling it to better meet the evolving needs of customers, society, and the environment. Encouraging multi-partner and cross sector collaboration, awards to date have encompassed a series of net zero related projects, including one focused on [carbon sequestration linked to environmental restoration](#), and another that is designing an approach to the [identification and reporting of embedded emissions](#).

4. Compatibility with net zero pathways

Due to the cross-cutting nature of water company services, and the broad range of activities required to deliver these services, we anticipate the water sector's approach to net zero will draw upon the approaches and actions associated with several of the sectoral decarbonisation pathways, including the 2037 indicative pathway, of the UK government's Net Zero Strategy.

As our net zero principles paper and our [draft PR24 methodology](#) make clear, we are focused on outcomes and the issues companies need to consider to ensure effective long-term responses are developed. We expect companies to identify and lead on the implementation of effective responses to net zero.

Our current regulatory framework is enabling the water sector to deliver on net zero in line with the UK government's interim and final targets. As outlined in our net zero position paper, government targets, including the 2035 target, should be viewed by companies as a steppingstone by which to plan and monitor their action on net zero. This longer-term approach will help net zero based expenditure to be phased beyond PR24 and in doing so help to achieve best value for customers and the environment.

The following sub-sections, focused on the sectoral pathways and cross-cutting actions of the UK government's net zero strategy, highlight where our regulatory approach is supporting the delivery of net zero. In particular, discussion is focused on the natural resources, waste and F-gases (hereafter the natural resources pathway) and indicative pathways; the sectoral pathways for power, and heat and buildings; and, the cross-cutting importance of innovation, and our regulatory work on decarbonising infrastructure.

4.1 The natural resources and indicative pathways

The natural resources pathway, and the indicative pathway for 2037, include actions for water companies to reduce emissions from wastewater. Companies are expected to reduce emissions through the adoption of alternative treatment processes and improvements in data and reporting. Our current focus on improving the reporting of GHG emissions by companies, including embedded emissions, will play a key role in driving the innovation needed to reduce process emissions from wastewater.

In recent years water companies have made progress in reducing emissions via the increased use of advanced anaerobic digestion producing biogas for direct use or injection into the grid. At present, water companies are focused on exploring further alternative wastewater treatment processes to reduce process emissions. We are supporting companies to innovate and go further in this area through our Innovation Fund.

As part of our work with partners such as the EA, we have strengthened and integrated GHG emissions considerations into some of the major investment decision-making processes, which feed into the price review. This includes the Water Industry National Environment Plan (WINEP)⁹ and water resources management plans (WRMPs). We are also encouraging and supporting water company efforts to expand their use of nature-based solutions (NbS), as demonstrated by our [Green Recovery funding decisions](#). For example, we have allowed funding for a constructed wetland designed to reduce the GHG emission associated with the provision of wastewater services. At PR24, we are aiming to facilitate a greater use of NbS, recognising that they can deliver wider environmental and societal benefits including delivering on net zero, and restoration of the environment.

Companies, as part of their strategic carbon management plans, are already beginning to manage their GHG emissions through the restoration and enhancement of the environment, with tree planting and peatland restoration amongst their responses. In particular, the sector has pledged to plant 11 million trees across England, with this action already included in the UK government's natural resources pathway. Through our Innovation Fund, we are supporting company efforts to restore and improve both the quality of the environment in the context of net zero. For example, we have awarded funding for an innovative offset project focused on [seagrass restoration](#).

However, as our net zero principles paper has signalled, we expect companies to prioritise the elimination and reduction of GHG emissions in the first instance, with the use of offsets needing to be viewed as the option of last resort.¹⁰ Where the use of an offset is proposed, we consider it only appropriate in situations where actions to reduce emissions are prohibitively expensive or unfeasible in the short term. By prioritising the elimination and reduction of GHG emissions we are encouraging practices in line with the UK government's net zero indicative pathway to 2037. This pathway emphasises reductions where known technologies and solutions exist and minimises the use of GHG removals to meet targets.

4.2 The power pathway

In recent years, water companies in England and Wales have focused on increasing their production of renewable energy as well as making increased use of green tariffs and direct purchase agreements to decarbonise their operations. For example, between 2011-12 and 2018-19 the sector increased renewable energy generation by 43% (333GWh increase, from 770 to 1,100GWh per year), increasing exports of renewable electricity to the national electricity grid by 45% (~increase of 50GWh per year).¹¹ These actions are enabling the power system to decarbonise by 2035 as envisaged in the UK government's Net Zero Strategy.

⁹ The WINEP is the Environment Agency's framework for determining the actions that water companies need to undertake to meet most of the environmental legislative requirements that apply to water companies in England, and which Ofwat funds accordingly through the price review.

¹⁰ Ofwat, [Net Zero Principles Position Paper](#), January 2022.

¹¹ WaterUK, [Net Zero 2030 Routemap](#), 2020.

Under our regulatory framework companies can decarbonise in the best way for them, with us supporting companies to go further and faster where the case for doing so is substantiated. This includes direct purchases of renewable energy; renewables only contracts; generation of their own renewable energy for their own use; and generating their own biogas.

Our price review mechanism includes a separate price control for bioresources, supporting development of the circular economy. At PR19, a number of companies have performance commitments for bioresources, and have responded to market demands and regulatory incentives, using anaerobic digestion to produce biogas for the market. Consistent with the UK government's SPS for Ofwat, at PR24 we are proposing to further promote the bioresources market to improve environmental outcomes.

Our regulatory framework for bioresources, and our support for the sector to engage in the production of hydrogen, is aligned with the government's fuel supply and hydrogen pathway to 2050 and interim carbon budgets. For example, we are supporting innovation projects to [convert sewage-derived biogas into hydrogen](#) and to [convert ammonia recovered from wastewater into hydrogen](#).

4.3 Heat and buildings pathway: Water efficiency

There are clear links between domestic water use, energy use and emissions. For instance, whereas the UK water industry is responsible for approximately 1% of UK GHG emissions, up to 6% of UK GHG emissions are from household water supply and use, with over 90% of these emissions related to how we use water in the home.¹² In order for net zero to be achieved, domestic emissions from heating and hot water need to be reduced by 95%.¹³ Therefore, water efficiency measures (especially those focused on reducing the use of hot water) in both households and non-households can reduce emissions, thus supporting attainment of the UK government's pathway for heat and buildings.

At PR19, we ensured water companies were committed to helping ensure customers use up to 13% less water per person by 2025. This is helping to reduce carbon emissions and help customers on water meters to save money. At PR24, we are proposing that performance commitments designed to reduce water demand should cover business customer demand, in addition to leakage and household customer demand (per capita consumption (PCC)). We are considering whether to set three separate performance commitments or combine them into a single water demand performance commitment.

Further supporting efforts to reduce emissions through greater efficiency are our actions on leakage. For example, and as a consequence of our funding decision at PR19, we are

¹² Waterwise, [Net Zero and the role of water efficiency](#), February 2021

¹³ Energy Saving Trust, [UK heating market to face changes](#), November 2019

expecting companies to reduce leakage by at least 15% by 2025. Again, we are supporting the sector to innovate in this space through our [Innovation Fund](#).

Our expectations at PR24 also support the UK government's proposed targets under the Environment Act 2021. We are expecting companies to take ownership of reducing water demand. However, water company actions need to be supported by a series of responses from government, such as water efficiency product labelling and enhanced building standards. The UK government has made clear its intention to deliver a number of important policy initiatives in this area.¹⁴

4.4 Innovation with a focus on the long-term

As the government's Net Zero Strategy, and the [10 Point Plan for a Green Industrial Revolution](#) highlight, innovation is key to the attainment of net zero.

Ofwat is actively driving net zero focused innovation, through our Innovation Fund, and our 2021 Green Recovery funding decisions. For example, in relation to expanding the UK energy mix, we have supported a consortium of companies to undertake [Combined Heat and Power Exhaust Carbon Capture and Utilisation](#). Saving an estimated 5 million tonnes of CO₂ a year, this project is aiming to turn captured carbon into products such as paint and fertiliser thus making the Combined Heat and Power process carbon neutral.

We are also focused on encouraging innovation over the long-term, recognising that uncertainties exist in relation to the feasibility and costs of adopting technologies that are new and/or in development. Our long-term approach is focused on maximising the adoption of technologies at least cost, with our regulatory framework allowing companies the flexibility to select and trial appropriate technologies most suited to their circumstances.

4.5 Decarbonisation of infrastructure

With all sectors of the economy needing to decarbonise and investment in infrastructure needed to achieve this, Ofwat is ensuring net zero is incorporated into its policy and planning processes and procedures, as well as ensuring progress is made by the sector.

In addition to improving water company reporting of operational emissions, we are focused on improving their reporting of embedded emissions. In particular, we are focused on ensuring all companies report on these emissions in a more consistent and transparent manner. Over the course of the next price review period (2025–30), we expect progress to be made in the development of a suitable metric for the monitoring and reporting of such

¹⁴ DEFRA Secretary of State, [Reducing demand for water](#), July 2021.

emissions.¹⁵ Also, our gated assessment process for strategic water supply solutions, considered via the RAPID alliance, has a clear process for ensuring companies actively consider embedded, as well operational emissions.

As noted in the Secretary of State's letter to regulators, Ofwat has pioneered Direct Procurement for Customers (DPC). DPC allows water companies to competitively tender for projects, such as Haweswater Aqueduct Resilience Programme proposed by United Utilities. Under DPC, the water companies remain accountable for meeting all of their statutory and regulatory obligations in relation to DPC projects, with this including their obligations in relation to net zero.

¹⁵ Ofwat, [Creating tomorrow, together: consulting on our methodology for PR24. Appendix 6 – Performance commitments](#), July 2022.

**Ofwat (The Water Services Regulation Authority)
is a non-ministerial government department.
We regulate the water sector in England and Wales.**

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