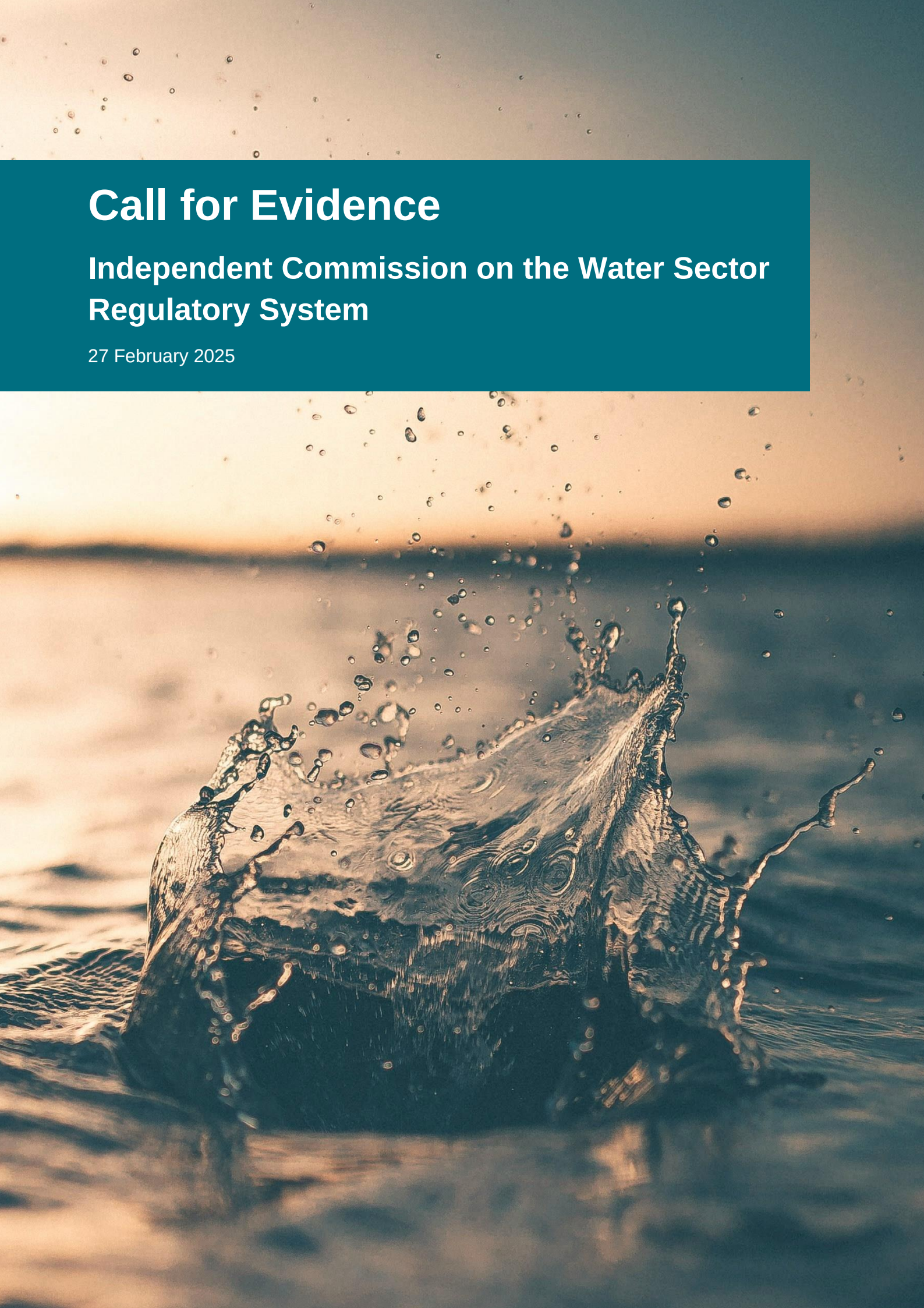
Call for Evidence

Independent Commission on the Water Sector Regulatory System

27 February 2025



This publication is available at www.gov.uk/defra

Any enquiries regarding this publication should be sent to us at cfe.water@defra.gov.uk.

Contents

Glossary of terms & acronyms

Abatement – Reducing the degree or intensity of, or eliminating, pollution.

AMP – Asset Management Period, the 5-year regulatory cycle for water companies in England and Wales.

Base – the cost allowance Ofwat sets for water companies to cover operating and maintenance expenditure.

CaBA – Catchment Based Approach, a policy framework to encourage wider adoption of integration of water catchment areas to improve the quality of our water environment.

CAP – Competitively Appointed Provider, a third party appointed by a water company through a competitive tender process under DPC to design, build, finance, operate and maintain new infrastructure.

CMA – The Competition and Markets Authority, an independent non-ministerial UK Government department which works on competition and consumer protection.

CNI – Critical National Infrastructure, those facilities, systems, sites, information, people, networks and processes necessary for a country to function.

CPIH – Consumer Prices Index including the owner occupiers' housing costs, an inflation metric measuring the average change in prices of goods and services paid by consumers over time, including housing costs and Council Tax.

Defra – The Department for Environment, Food and Rural Affairs.

DPC – Direct Procurement for Customers, whereby a water or wastewater company competitively tenders for services in relation to delivery of certain large infrastructure projects, resulting in the selection of a third-party competitively appointed provider.

DWI – The Drinking Water Inspectorate, formed in 1990 to provide independent assurance that water supplies in England and Wales are safe and drinking water quality is acceptable to consumers.

DWMPs – Drainage and Wastewater Management Plans, collaborative long term strategic plans highlighting the known and expected risks for water and sewerage companies.

EA – The Environment Agency, an executive non-departmental public body sponsored by Defra.

EIP – Environmental Improvement Plan, setting out how Defra will improve our environment in the UK and around the world.

eNGO – Environmental Non-Governmental Organisation, non-profit organisations which work to protect the environment.

Enhancement – the cost allowance Ofwat sets for water companies to cover new investment expenditure.

FTE – Full Time Equivalent, a unit of measurement which indicates the workload of an employed person in a way that makes workloads comparable across contexts.

GES – Good Ecological Status, the default objective for all water bodies which is set by the WFD, defined as a slight variation from undisturbed conditions.

GSS – The Guaranteed Standards Scheme, under which a water company is required to make a specified payment to the customer affected where it fails to meet a standard set by Ofwat.

IEPAW – Interim Environmental Protection Assessor for Wales, an interim body that oversees the functioning of environmental law in Wales.

ISO – International Asset Management Standard which, under the International Standardisation Organisation series, sets standards that provide guidance for developing and improving asset management systems.

IT – Information Technology, the use of computers, telecommunication systems and other devices for storing, retrieving and transmitting information.

IPA – The Infrastructure and Projects Authority, which provides expert project delivery advice, support and assurance to UK government departments and works with industry to ensure projects are delivered efficiently and effectively.

NAVs – New Appointments and Variations, limited companies providing a water and/or sewerage service to customers in an area which was previously provided by the incumbent monopoly provider.

NE – Natural England, a non-departmental public body in the United Kingdom sponsored by the Department for Environment, Food and Rural Affairs.

NEP – National Environment Programme, a programme of actions which regulated companies in Wales take to improve the environment.

NIC – The National Infrastructure Commission, which provides impartial advice to the UK government on infrastructure to shape and develop the national infrastructure assessment.

NIS – Network and Information Systems Regulations, which provide legal measures to boost the level of security (both cyber & physical resilience) of network and information systems for the provision of essential services and digital services.

NRW – Natural Resources Wales, a Welsh Government sponsored body which ensures the environment and natural resources of Wales are sustainably maintained and used, now and in the future.

ODI – Outcome Delivery Incentive, which provides financial payments to water companies from customers for performing beyond their committed levels of service and also provides payments from companies to customers for performing below their commitments.

OEP – The Office for Environmental Protection, whose role is to protect and improve the environment by holding government and other public authorities to account.

Ofwat – The Water Services Regulation Authority, a non-ministerial government department established in 1989 when the water and sewerage industry in England and Wales was privatised.

OSM – Operator Self-Monitoring, through which water companies must collect and analyse samples of permitted dischargements that are subject to numeric quality limits.

PCD – Price Control Deliverable, sets out Ofwat's expectations for delivery specifically on improvements, funded through enhancement expenditure allowances.

PFAS – per-and poly-fluoroalkyl substances, a chemical family consisting of at least 5,000 individual substances, sometimes referred to as 'forever chemicals' due to their persistence in the environment.

Price Review – the process through which water companies set out their plans at the start of every AMP for what they will deliver and how much they will charge customers.

Price Review Forum – a forum which issues strategic steers directly to water companies in Wales that provide joint views on the priorities and helps to guide the development of water company business plans.

RAPID – The Regulators' Alliance for Progressing Infrastructure Development, a partnership made up of the 3 water regulators – Ofwat, the EA and the DWI.

RBMP – River Basin Management Plan, which sets the locally specific enforcement environmental objectives underpinning water regulation and planning activities.

River Basin – the area of land from which all surface water run-off flows through a sequence of streams, rivers and lakes into the sea at a single river mouth or estuary.

RoRe – Return on Regulated Equity, a financial metric measuring the returns (after tax and interest) that companies have earned by reference to notional regulated equity.

RPI – Retail Prices Index, an inflation metric measuring the change in the cost of a representative sample of retail goods and services over time.

SAC – Special Areas of Conservation, a network of conservation sites which UK and Welsh ministers designate under the Conservation of Habitats and Species Regulations 2017, which will make a significant contribution to conserving key habitats and species.

SAR – Special Administration Regime, which enables a company which provides vital public services (for example water, energy, rail) to be put into administration to ensure that the public service can continue to be provided pending rescue or transfer to new owners.

SLP – Self-Lay Providers, are providers, other than the water or sewerage company, that can install pipework.

SEMD – Security and Emergency Measures Direction 2024, a ministerial direction to water and sewerage undertakers and water supply licensees in England and Wales.

SIPR – Specified Infrastructure Projects Regulations, which give the Secretary of State for Environment, Food and Rural Affairs, under certain circumstances, the power to specify

that an infrastructure project in England and/or Wales must be put out to competitive tender rather than being delivered by the relevant incumbent water or sewerage company.

SPS – Strategic Policy Statements, published by the UK and Welsh Governments once per Price Review period to guide Ofwat on its strategic priorities and objectives when carrying out its relevant functions in relation to the water industry.

Storm Overflow Discharge Reduction Plan – under this Plan, water companies in England must meet several time-bound targets to limit storm overflow use and eliminate ecological harm from their discharges by 2050.

TTT – The Thames Tideway Tunnel, a newly operational 25-kilometre-long sewer in London to reduce the amount of sewage that flows into the River Thames.

Urban Wastewater Treatment Regulations (UWWTR) – a directive aimed at protecting the environment and public health from urban and industrial wastewater discharges.

WASCs – water and sewerage companies, which source, treat and transport water to customers and are also responsible for removing and treating wastewater.

WACC – Weighted Average Cost of Capital, is a company's average after-tax cost of capital from all sources, including common stock, preferred stock, bonds, and other forms of debt.

Water Catchment Area – a land area that drains water into a body of water, like a river, lake, or reservoir.

WBS – Whole Business Securitisation, whereby a separate company is established to issue debt with the regulated company making ‘dividend’ payments to this company to pay down debt.

WFD – The Water Framework Directive, which introduced the RBMP framework to help protect and improve the ecological health of our rivers, lakes, estuaries and coastal and groundwaters.

WINEP – Water Industry National Environment Programme, a programme of actions which water companies in England follow to improve the environment.

WISER – Water Industry Strategic Environmental Requirements, the statutory and non-statutory expectations of the Price Review period.

WOCs – water-only companies, which source, treat and transport water to customers.

WRMPs – Water Resource Management Plans, which set out how water companies intend to achieve a secure supply of water and a protected and enhanced environment.

Background

1. In October 2024, the UK government and Welsh Government announced an Independent Commission into the water sector and its regulation, chaired by Sir Jon Cunliffe.[1] An advisory group of nominated experts covering areas including the environment, public health, consumers, investors, engineering and economics has also been appointed.[2]

2. The Commission is working independently of UK and Welsh government ministers. It will interact with wider Department for Environment Food and Rural Affairs (Defra) and government reviews. Sir Jon Cunliffe and the Advisory Group are supported by a Defra Secretariat.

3. The Commission intends to make recommendations to the UK and Welsh governments by June 2025 to strengthen the water sector and its regulatory framework. This Call for Evidence will inform those recommendations. It sets out the current issues and areas for potential change that the Commission wishes to explore. Any options outlined should not be taken as any indication of the Commission's likely recommendations. The Commission is open-minded, carrying out a challenge function, and wants to explore a range of possibilities through this exercise.

4. As set out in the Terms of Reference, the scope of the Commission covers the strategic management of water and the water industry in England and Wales. Scotland and Northern Ireland are outside the scope of the Commission. The Commission has been tasked to focus on reforms to improve the current private regulated company model for the provision of water and sanitation services. The UK government has been clear that nationalisation of the water industry is not in scope.

5. Since the Commission launched in October 2024, it has met with more than 90 external stakeholders, including environmental groups, consumer representatives, water company CEOs, major investors, economists and regulators (see Annex B). This engagement has helped inform this Call for Evidence which is intended to provide an important basis for the Commission's recommendations. A range of stakeholder views and evidence has been outlined throughout but this should not be taken as the shared view of the Independent Commission. Any views expressed are provisional and the Commission will gather and consider further views and evidence before reaching any conclusions.

[1] Independent Water Commission Terms of Reference
[2] Independent Water Commission Advisory Group

The Task of the Commission

6. The provision of safe drinking water and sanitation of wastewater is fundamental to society and to the economy. At the same time, the provision of these essential services must respect the management of the natural environment. It should be consistent with the overall objectives for the management of the nation's water upon which there are many competing demands. And it should be efficient and not impose unnecessary or unjustified cost on the consumers who pay for these essential services.

7. Meeting these objectives will become more complex, more challenging and more expensive in future. This is due to the impact of climate change, population growth and ageing infrastructure and the increase in standards for the protection of the natural environment and public health. There has also been a change in the context in which water companies are operating in and expectations on the water industry have changed over time.[3] Very substantial investment is needed.[4]

8. It is clear that the water sector and, more broadly, the framework for the overall management of water in England and Wales, are struggling with the challenges of meeting these objectives. The 2027 Water Framework Directive (WFD) objective for 75% of surface water bodies in England and 94% of surface water bodies in Wales meeting Good Ecological Status (GES) will be missed by a very considerable margin.[5] While there are strengths – the standard of drinking water quality in England and Wales is among the highest in the world[6] – public trust in the water industry has deteriorated.[7] There appears to be low trust in the sector's ability to provide these services without unacceptable impact on the environment. And there is low trust from consumers that they are paying fairly for the services they receive and the investment necessary for the future.[8]

9. Investors, who will be needed to finance the necessary investment in the sector, are also losing trust, particularly trust that the regulatory system within which the water companies operate is predictable, proportionate and that they will get a fair return on what should be a relatively safe, long-term investment.[9] The relationship between the regulators and the companies they regulate has become increasingly challenging, with a lack of trust on both sides.[10]

10. These problems have not emerged overnight. Nor, as international experience indicates, are they the inevitable consequence of the private regulated utility model. Rather, they have developed over time, driven by poor performance or otherwise

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[3] Defra, WISER
[4] Ofwat, Price Review 2024 Final Determinations
[5] Office for Environmental Protection. 'A review of implementation of the Water Framework Directive Regulations and River Basin Management Planning in England'
[6] DWI. 'Drinking water 2023, England', DWI. 'Drinking Water 2023, Wales'
[7] Ofwat. 'Customer trust and satisfaction in water companies falling in latest Ofwat and CCW research - Ofwat'
[8] CCW. 'Water Matters 2024'
[9] Engagement with the Commission
[10] Engagement with the Commission

unacceptable actions by some companies, regulatory deficiencies, policy instability and inconsistency, including at the government level, and a history of ad hoc changes that have resulted in an increasingly complex system in which accountability and authority are unclear. There are multiple elements of the system which are interlinked and no one issue outlined in this Call for Evidence can be treated in isolation.

11. The task of the Commission is to stand back from the current system and explore, with an open mind, potential changes – both evolutionary and revolutionary. Its task is to make recommendations on how to equip and reform the system to meet the challenges of the future and, crucially, restore over time the trust that has been lost. This Call for Evidence is an essential building block in that process.

12. As confirmed in the Commission's Terms of Reference, the aim is for its recommendations to inform a longer-term reset of the sector, with possible implications for later Price Controls – not Price Review 2024.

Audience

13. We are asking you to share evidence based on your own insights and experience. The evidence sought here will inform the Commission's development of recommendations. This Call for Evidence sets out the current issues based on the evidence the Commission has gathered so far, and a number of areas for potential change that the Commission wishes to explore. In some areas, questions are intended to fill gaps in the evidence base and, in others, it sets out current issues and ideas on which we welcome views and supporting evidence, in particular, where we may have missed perspectives from a wider audience of stakeholders.

How to respond

14. We encourage responses to this Call for Evidence through Defra's online consultation tool, Citizen Space. Using the online tool assists our analysis of responses, enabling a more efficient and effective consideration of issues.

15. The questions provided on Citizens Space are also included at **Annex A: Call for Evidence Questions**.

16. If you would prefer to send your response via email, please use our email response template and send your submission to:

    cfe.water@defra.gov.uk.

17. Alternatively, if you would prefer to send your response via post, please use the same response template if possible and send it to the following address:

    The Independent Water Commission
    Defra Ground Floor
    Seacole Building
    2 Marsham Street
    London
    SW1P 4DF

18. You do not need to answer every question to respond to this Call for Evidence.

19. When answering the questions, where possible, please provide evidence and examples to support your answers.

20. This document provides additional detail on the evidence we have gathered and the type of evidence we are seeking. You do not need to read this document to answer the questions on Citizen Space.

21. This Call for Evidence will run for 8 weeks. It opens on Thursday 27 February 2025 and closes on Wednesday 23 April 2025 at midnight. Please note that all responses must arrive by the closing date and time of the Call for Evidence to be considered. This includes responses via post, which will need to arrive at the given address by the closing date. Unfortunately, any responses received after this time will not be considered.

Information rights – data protection – confidentiality

22. This privacy notice explains how the Department of Environment, Food and Rural Affairs (Defra), on behalf of the Independent Water Commission, will use your personal data when you take part in the call for evidence process.

    If you have any queries about the content of this privacy notice, please email cfe.water@defra.gov.uk.

    We use Citizen Space to run our consultations and call for evidence exercises.

    Who collects your personal data

    Defra is the controller of any personal data collected as part of the call for evidence:

    Department for Environment, Food and Rural Affairs
    Seacole Building
    2 Marsham Street
    London
    SW1P 4DF

    If you need further information about how Defra, on behalf of the Commission, uses your personal data and your associated rights, you can contact the Defra data protection manager at data.protection@defra.gov.uk or at the above address.

    The data protection officer for Defra is responsible for checking that Defra complies with data protection legislation. You can contact them at DefraGroupDataProtectionOfficer@defra.gov.uk or at the above address.

    What personal data we collect and how it is used

    Your personal data is being collected as part of the call for evidence for the Commission so the Commission can contact you if it has any further questions on the evidence you've submitted. Your personal and identifying data will be available to individuals working for the Commission.

The following personal data is being collected for this purpose:

- Your name
- Your organisation
- Your contact details
- Your views and opinions
- Any personal data you volunteer by way of evidence in your response to the call for evidence. Please don't submit any personal data in your response that could identify other individuals.

The Commission will take your response into account, as far as possible, with all other responses to the call for evidence. The Commission will publish a summary of responses to the call for evidence as part of the Commission's final report; this will not include any personal data. An anonymised version of your response may also be published in a list of responses and in any subsequent reports by the Commission.

If you consent and provide contact details, the Commission may contact you directly inviting you to give your views, opinions and experiences in response to a new or follow up consultation or call for evidence exercise.

If you want the information that you provide to be treated as confidential, please explain why you regard the information you have provided as confidential.

If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your information technology system will not be regarded as binding on us.

Lawful basis for processing your personal data

There are two lawful bases in data protection law that apply to the Commission's use of your personal data for the call for evidence exercise:

- Your consent; and
- a task carried out in the public interest - this may be applicable at a point during the processing, when consent is no longer the legal basis for processing, for example when your personal data has been incorporated into its analysis and can no longer be identified.

Where the processing of your personal data is based on consent, you can normally withdraw your consent, and have personal data removed. You can do this by emailing cfe.water@defra.gov.uk.

However, you may not be able to withdraw your consent once the Commission has incorporated your personal data into its analysis and it can no longer be identified.

Who Defra, on behalf of the Independent Water Commission, will share your personal data with

Your data, including any personal data, may be shared with other teams within Defra and the Welsh Government supporting the analysis of call for evidence responses.

Your data, including any personal data, may also be shared with a third-party provider, or other government department or organisation, who may analyse and summarise responses for the Commission and may use technology such as artificial intelligence to do so. They will be subject to Defra's personal information charter and a service level data sharing agreement.

Defra and the Welsh Government will respect your personal privacy when responding to access to information requests. They will only include your information in response to a request when necessary to meet the statutory requirements of the Environmental Information Regulations 2004 and the Freedom of Information Act 2000.

How long will Defra, on behalf of the Independent Water Commission, hold the personal data?

Defra, on behalf of the Commission, will keep your personal data for the duration of the review period (Oct 2024 – June 2025). Following the dissolution of the Commission, Defra will keep your personal data for a maximum of 3 years.

At the end of the commission, the evidence collected during the call for evidence by the Commission will be available to Defra and the Welsh Government to be used in the implementation of the Commission's recommendations and/or other Defra and Welsh Government work.

What happens if you do not provide personal data?

We will not be able to gather your views, opinions and experiences. You will not be able to contribute to the specific goals of the call for evidence exercise.

Use of automated decision making or profiling

The personal data you provide will not be used for:

- automated decision making (making a decision by automated means without any human involvement)
- profiling (automated processing of personal data to evaluate certain things about an individual)

Your rights

Based on the lawful processing above, your individual rights are:

Consent

- the right to be informed
- the right of access
- the right to rectification

- the right to erasure
- the right to restrict processing
- the right to data portability
- rights in relation to automated decision making and profiling

Public task

- the right to be informed
- the right of access
- the right to rectification
- the right to restrict processing
- the right to object
- rights in relation to automated decision making and profiling

Information about your individual rights under the UK General Data Protection Regulation (UK GDPR) and the Data Protection Act 2018 (DPA 2018), is available on the Information Commissioners Office website.

Complaints

You have the right to make a complaint to the Information Commissioner's Office at any time.

Personal information charter

Defra's personal information charter explains more about your rights over your personal data.

Executive summary

Introduction

23. **This Call for Evidence sets out context, issues and areas where the Commission is seeking views in relation to the water sector in England and Wales**.

24. **The water sector is facing many challenges. Resolving these will require long-term and transformative change.** This document sets out to gather evidence and opinions from all interested parties on what that change might look like.

25. **This is a challenging task but also presents opportunity.** Over the coming months, the independent Commission will look at how to reform the system to rebuild trust and to incentivise a thriving, sustainable sector that meets the demands we place upon it.

26. The document is structured as follows:

- **Chapter 1** outlines a brief history of the water industry since privatisation.

- **Chapter 2** considers the strategic management of water in England and Wales. We have one water system that is facing many competing pressures and demands from a range of sectors. The Commission is looking for views and evidence on whether there is a need for coordinated planning between those sectors impacting water, and clear direction on priorities and trade-offs.

- **Chapter 3** looks at the overarching water industry regulatory framework. This includes seeking views on whether changes are needed to the functions and responsibilities of Government and of the regulators – Ofwat, the Environment Agency (EA), Natural Resources Wales (NRW) and the Drinking Water Inspectorate (DWI).

- **Chapter 4** covers economic regulation and the 5-yearly Price Review process where Ofwat assesses requirements and sets limits on customer bills. This chapter also covers customer protections, financial resilience, investment and competition.

- **Chapter 5** looks at the regulation relating to public policy objectives that the water industry needs to deliver. That includes protecting the environment, delivering clean drinking water, protecting water resources and maintaining and upgrading infrastructure.

- **Chapter 6** looks at water company ownership models. Some water companies are listed, some are owned by institutional investors, some by private equity, some by infrastructure conglomerates. Dŵr Cymru Welsh Water has a ‘not-for-profit’ model. This chapter compares different models across the UK and internationally.

27. **Each chapter has a number of questions which relate to it.** These are provided in Annex A. Respondents do not need to answer every question.

28. A number of issues have been raised consistently with the Commission. These are summarised below:

1	**Need for strategic coordination across sectors impacting or interacting with water.** A number of stakeholders have suggested that planning, regulation and investment decisions are often kept in silos across different groups.[11]	
2	**Need for clear long-term planning on water.** The Commission has heard that the water sector lacks a cohesive long-term plan. It has also heard that previous targets and vision-setting strategy documents have not always given companies and regulators clear outcomes to work towards. For example, the most recent Strategic Policy Statement from the government set out more than 50 expectations across 4 'strategic priorities' to Ofwat.[12]	
3	**Complexity and volume of water industry regulation.** The legislation around water has become increasingly complex. For example, there were 93 separate requirements in the latest Water Industry National Environment Programme (WINEP) – the environmental obligations that water companies need to follow. That amounts to over 18,598 individual actions, 98% of which are statutory.[13]	
4	**Concerns about the regulatory oversight of the water industry**. The Commission has heard there are areas where regulators' remits overlap and where there are gaps. It has also heard concerns around the mechanisms to secure environmental performance and accountability.[14]	
5	**The need for fair and stable returns to investors.** The water industry needs to be investable to deliver the infrastructure for the future; investor returns must also be fair and proportionate. There will be a quadrupling of new investment from 2025 – 2030 relative to previous levels.[15]	
6	**The need for an improved infrastructure resilience framework.** Operational resilience and the extent to which companies are maintaining existing assets and planning for future challenges, such as climate change, has been raised as a key issue. For example, the majority of mains pipes were built prior to privatisation, and the replacement rate has decreased significantly post 2008.[16]	

[11] A Fresh Water Future, CIWEM
[12] Ofwat. 'The government's strategic priorities to Ofwat'
[13] Engagement with the Commission
[14] Engagement with the Commission; House of Commons. 'Water Quality in Rivers'; House of Lords. 'The affluent and the effluent: cleaning up failures in water and sewage regulation - Industry and Regulators Committee'
[15] Ofwat PR24 final determinations
[16] Ofwat. Report that average mains renewal rates declined post 2008 due to the end of the drinking water quality improvement programme

The history (Chapter 1)

29. **The water industry was privatised in 1989 with the objective of increasing efficiency and attracting the significant investment needed to meet EU environmental standards**. A new regulatory system was established in law – creating Ofwat, the National Rivers Authority (now the EA and NRW) and the DWI.

30. **Since that time, demands on the water system have grown and become more complex.** The realities of climate change, population growth and ageing infrastructure have added significant pressure. Environmental awareness has also improved, meaning that the standards for environmental protection have been raised.[17]

31. **There have been improvements since privatisation of the water industry.** Drinking water and sanitation standards are world-leading. Environmental monitoring and transparency in England and Wales have increased. There has been roughly £224 billion of capital investment since privatisation, with 2023/24 capital investment over double the annual levels in the years immediately before the sector was privatised in 1989.[18]

32. **Major issues have also arisen.** The legislative and regulatory framework developed by successive governments has left a complex regime that many say is not as clear and focused as it could be. There is evidence that water companies have failed to deliver what is expected of them, both by regulators and the public, despite being funded to deliver improvements.[19] The financial resilience of some water companies is very low.[20]

33. **The Commission is examining and seeking evidence on the issues that have emerged since privatisation to help set a path for a better future**. To support this, it will also look at the evidence of regulation in other sectors and internationally.

Overarching framework for managing water (Chapter 2)

34. **The management of water involves many different groups**. A single river basin is affected by decisions made by national and local governments, water companies, farmers, transport bodies and many others. Pollution sources include water industry pollution, agriculture and road run-off (Figures 1 and 2). These are exacerbated by factors such as new housing, population growth and climate change.

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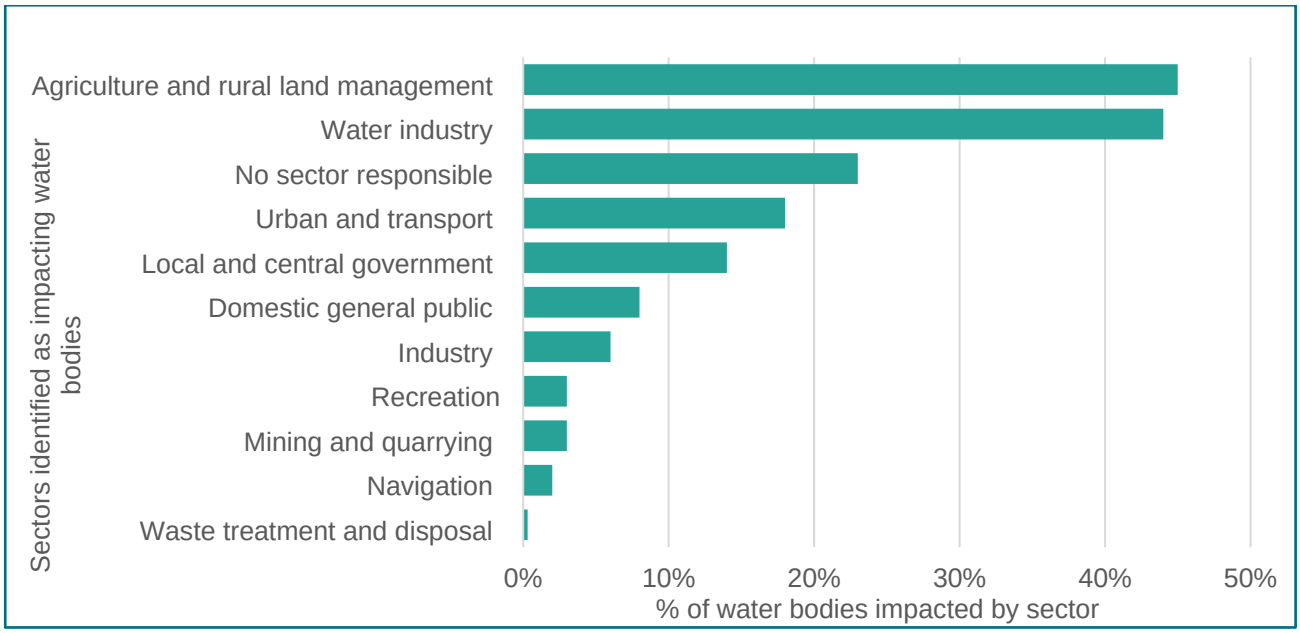
[17] Defra. 'Plan for Water: our integrated plan for delivering clean and plentiful water - GOV.UK', House of Lords Library. 'River pollution and the regulation of private water companies

[18] Ofwat. Converted to 2022/23 prices using CPIH. £236 billion in 2023/24 prices as reported by Ofwat – 'Long-term data series of company costs - Ofwat'

[19] Environment Agency. 'Water and sewerage companies in England: environmental performance report 2023 - GOV.UK', Natural Resources Wales. 'Annual performance report for Dŵr Cymru (Welsh Water)'

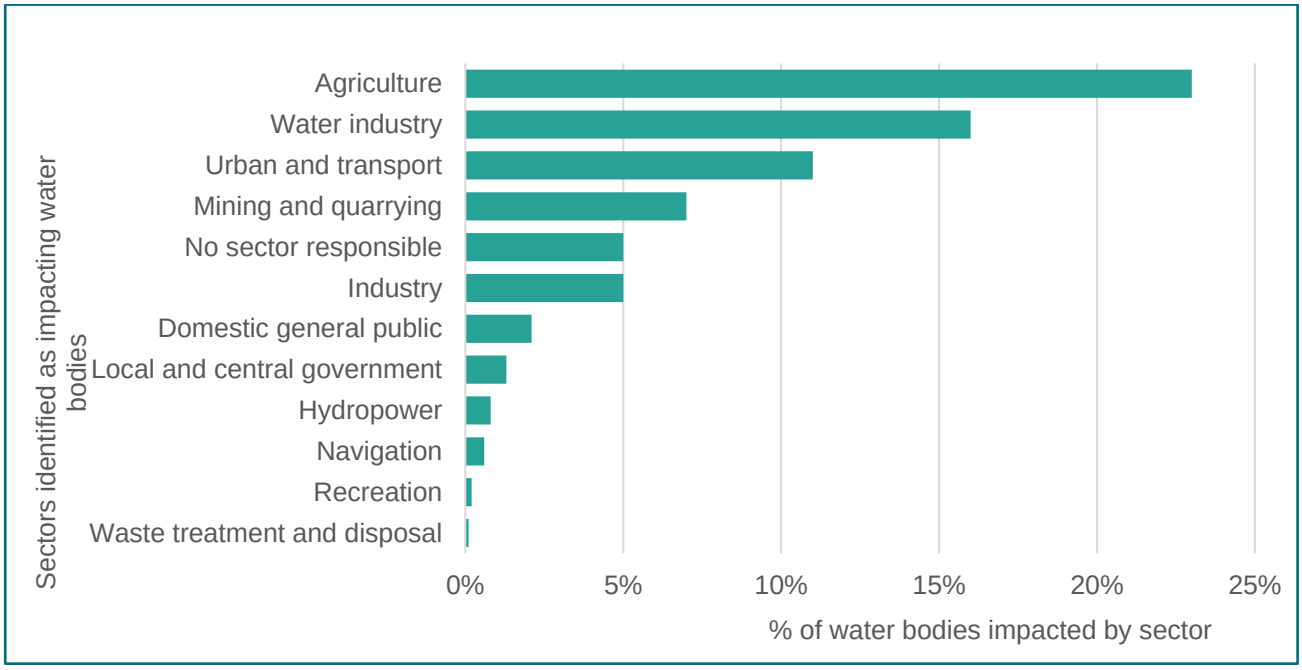
[20] Ofwat. 'https://www.ofwat.gov.uk/publication/monitoring-financial-resilience-report-2023-24/'

Figure 1: Percentage of water bodies impacted by sector, England, 2019



Source: Independent Commission analysis[21]

Figure 2: Percentage of water bodies impacted by sector, Wales, 2019



Source: Natural Resources Wales[22]

[21] Environment Agency and Natural England. Figures are taken from the 2019 set of probable and confirmed reasons for not achieving good status (RNAGs), linked to 2016 WFD classifications, 'No sector responsible' covers those situations where it is not possible to assign failure to achieve good status to the activities of a specific sector, used mainly for invasive non-native species. Around 6% of water bodies have one or more RNAGs where the sector responsible is still under investigation. Around 5% of water bodies have one or more RNAGs caused a different sector to those listed in the figure. Data from: 25 YEP B3 evidence pack

[22] Analysis provided directly to the Independent Commission by NRW. Data from: Natural Resources Wales

35. **As the pressures on the water system grow, the need for coordination and difficult trade-offs between different outcomes can be required**. Those outcomes could include, for example, ensuring there is enough water supply to support new housing or data centres, meeting environmental targets, ensuring waters used for recreation meet public health standards, reducing flood risk, and ensuring investment remains affordable for billpayers.

36. **The Commission has heard that, while there is guidance on certain elements, there is no single overarching strategy set by governments in England or Wales to guide how these competing demands should be managed**. Stakeholders have questioned whether previous government strategies provide the clear direction and guidance needed on the hierarchy of priorities and trade-offs.[23]

37. **The Commission is seeking views on how a long-term strategy at national level in England and Wales could give clearer guidance on priorities**.

38. **Below the national level, at the level of river systems and catchment areas, the Commission has heard that local infrastructure planning decisions and investment are often considered in isolation from one another**. That includes local authorities for planning and development, water companies and regulators for the water industry, Highways England for road run-off, and farming.[24]

39. **The Commission is seeking views on how to improve and better integrate these decisions, such as through an authority working at a national, regional or catchment level to decide on the best actions for a water system and to help overcome siloed decision-making**. A number of suggestions have been heard that could involve more central planning and governance, either looking solely at water industry planning, or more broadly. Some steps have already been taken in this direction, such as the Catchment-Based Approach (CaBA). The Commission is seeking evidence on expanding existing initiatives which support decision-making at a local level, or creating a new function.

40. **The Commission would like to explore the geographical scales for water planning and governance in the system and whether they provide sufficient accountability**. The current environmental regulatory framework is intended to manage water at a river basin level. Each river basin contains several catchments. These in turn contain several, often interconnected, water bodies. An alternative could be management at local or regional government level. This would mean there are existing democratic structures which could support and oversee plans for a geographic area.

41. **In the current legal framework, River Basin Management Plans, under the Water Framework Directive (WFD), are the strategic plans showing how progress will be driven in meeting the WFD environment targets**. They are designed to

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[23] National Infrastructure Commission. 'Strategic Investment and Public Confidence'
[24] A Fresh Water Future. 'FRESH_WATER_FUTURE_MAIN_REPORT_WEB.pdf'

encourage coordinated progress, but the Commission has heard that they lack the engagement mechanisms to agree the right actions and the levers to secure delivery across sectors. They also focus on the water environment and do not involve other public policy objectives such as public health or growth and development.[25]

42. **The overarching objective to improve water quality is in the WFD**. It requires that 75% of surface water bodies in England and 94% of surface water bodies in Wales should achieve Good Ecological Status (GES) by 2027. In England, that figure currently stands at 16%. In Wales, it is 40%. In both England and Wales, the 2027 target will be missed.[26]

43. **Many support the WFD because it provides legally-binding targets on water quality.** Others have commented that it is too narrow in scope, without sufficient emphasis on public health or wider environmental outcomes. [27] The government has pointed to significant challenges of achieving WFD objectives in the UK's particular geographic context.[28]

44. **The Commission is seeking views on whether the WFD 2027 target should be reformed**.

Strategic direction for the water industry

45. **The Commission is reviewing the direction and strategic guidance given specifically to the water industry**.

46. **The Strategic Policy Statements (SPS), published separately every five years by the UK and Welsh governments, give guidance to Ofwat on the water industry (see Box 4)**. There are no equivalent documents for the other water regulators. The last SPS from the UK government set out more than 50 expectations across 4 'strategic priorities'.[29]

47. **The Commission has heard that the SPS lacks a clear hierarchy of priorities, with no guidance to Ofwat on trade-offs.** It has also heard about limited specific and time-bound objectives which make it difficult to measure whether priorities have been delivered. The SPS currently only covers the 5-year Price Review period and therefore has not taken a longer-term view on outcomes.[30]

48. **In Wales, guidance is also given through the Price Review Forum – which includes government, regulators and consumer representatives**. The

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[25] Engagement with the Commission
[26] The OEP: A review of implementation of the Water Framework Directive Regulations and River Basin Management Planning in England', Welsh Government: 'Written Statement: Publication of the Storm Overflow Evidence for Wales Report (26 October 2023) | GOV.WALES'
[27] Wildlife and Countryside.
'https://www.wcl.org.uk/docs/WCL_Blueprint_WFD_Position_Paper_July_2024.pdf'
[28] Defra. 'Government response to the Office for Environmental Protection report on the implementation of the Water Framework Directive Regulations and River Basin Management Planning in England - GOV.UK'
[29] Ofwat. 'Strategic policy statement for Ofwat - GOV.UK'
[30] Defra. 'Summary of responses and government response - GOV.UK'

Commission has heard that while this supported collaboration, many of Ofwat's overall decisions for Wales were influenced by the UK government's steers for England.[31]

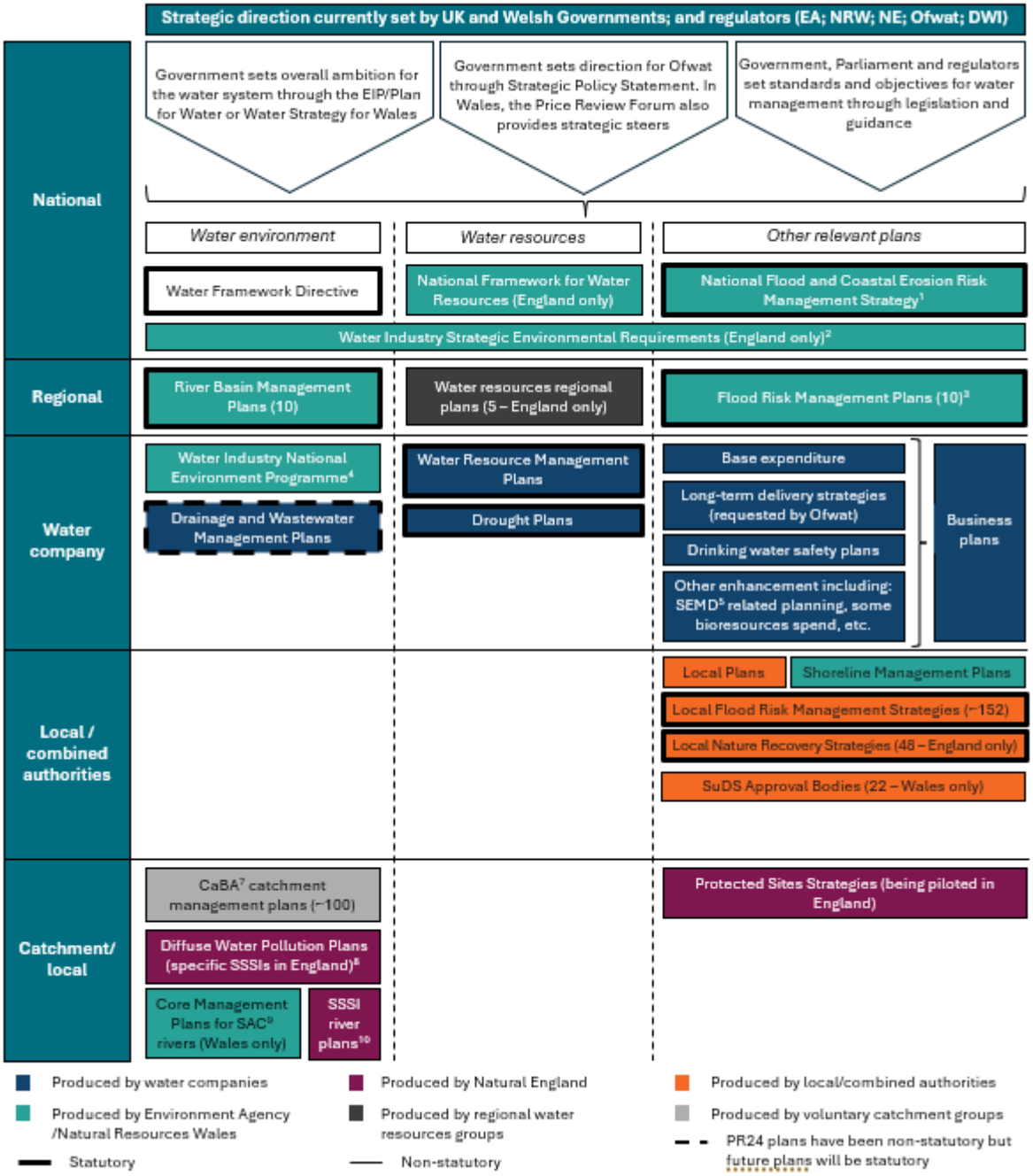
49. **The Commission is exploring whether, and how, clearer strategic direction should be given to the water industry**.

50. **Various water company planning frameworks, intended to address public policy objectives, have also been introduced over time, both statutory and non-statutory**. These plans are illustrated in Figure 3, alongside those from both governments and regulators.

51. **The Commission is seeking views on whether the current water industry planning frameworks reflect the right outcomes and incentivise the actions needed – and whether the water industry planning system could be simplified**.

[31] Afallen Report. 'Welsh Government Price Review 2019 Review Project, provided to the Commission'

Figure 3: Overview of the key planning frameworks affecting the water industry in England & Wales



Notes

(1) In Wales, this is produced by the Welsh Government rather than NRW[32]
(2) Produced jointly by the EA and Natural England (NE)
(3) Future requirements to produce these plans were revoked through the Retained EU Law Act 2023. The current plans cover the period to 2027
(4) Known as the National Environment Programme in Wales
(5) Security and Emergency Measures Direction 2024, discussed in Chapter 5

[32] 40996 National Strategy for Flood and Coastal Erosion Risk Management in Wales (English); Commission engagement with Welsh Government

(6) Greater Manchester Combined Authority
(7) Catchment Based Approach
(8) Sites of Special Scientific Interest (SSSI); plans are produced jointly by EA and NE
(9) Special Areas of Conservation
(10) SSSI river and lake restoration plans

Source: Modified from various sources[33]

The regulators (Chapter 3)

52. **There are four primary regulators for the water industry in England and Wales**.

- **Ofwat** (the Water Services Regulation Authority) is responsible for economic regulation of the water industry in England and Wales. As water companies are effective monopolies, Ofwat's primary role is protect the interests of consumers and ensure that companies carry out their statutory functions and are financed to do so. Other objectives have been added over time.

- The **Environment Agency (EA)** is the environmental regulator of the water industry in England. It issues the licences and permits that water companies need to abstract water and dispose of wastewater. It is responsible for the WFD in England.

- **Natural Resources Wales (NRW)** has similar functions in respect of environmental regulation of the water industry in Wales.

- The **Drinking Water Inspectorate (DWI)** is responsible for the quality and sufficiency of public drinking water supplies.

53. **The complexity of regulation, alongside the remit, capability and resources of the regulators, has emerged as common themes in the Commission's engagement so far**.

54. **In relation to this, the core objectives of regulators have significantly expanded over time, including around the environment, financial resilience and growth. For example, Ofwat now has five general duties**.[34] Questions have been raised about whether it is possible for Ofwat to balance all these objectives in delivering its core functions.

55. **Specific legal duties on regulators and water companies have also increased.** The Commission has heard that new environmental requirements have been layered onto the EU-derived framework, leading to a regulatory regime that is increasingly complex and hard to navigate.[35]

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[33] Water industry strategic environmental requirements (WISER) - GOV.UK ; PR24-and-beyond-Final-guidance-on-long-term-delivery-strategies_Pr24.pdf; Governance of flood risk management | Local Government Association
[34] Ofwat, Our duties - Ofwat
[35] Engagement with the Commission

56. **As their duties have expanded, stakeholders have questioned whether regulators have the capacity and resources required to deliver them**. The Commission has heard that there are long-standing resourcing pressures at both EA and NRW. Some have called for better resourcing for enforcement and more modern, agile and intelligence-led regulation. Legacy IT systems are still used for certain functions by the EA.[36] For Ofwat, there may be lessons from other sectors around the role of supervisory oversight to ensure public policy objectives are delivered.

57. **There also appear to be tensions and overlaps between regulatory structures**. For example, the EA, NRW and DWI set environmental and drinking water requirements. Some have questioned that the costs that companies are allowed to recover from customers in respect of meeting these requirements are decided separately by Ofwat via the Price Review process. Ofwat can challenge schemes on the basis of cost efficiency and to keep down the cost of bills. However, it is not able to remove projects that the environmental regulators or the DWI have said are necessary to meet regulatory requirements.[37]

58. **The Commission has heard that there may also be gaps where environmental regulators may not be sufficiently responding to new and emerging threats**.[38] This includes public health threats such as pathogens from sewage as well microplastics, where evidence is emerging.

59. **The Commission is seeking views on whether, and how, to clarify regulators' responsibilities and structures to resolve challenges around overlaps and gaps**. This could mean changing their roles and responsibilities to be more coordinated. Other changes might include new regulatory coordination mechanisms or merging regulator functions.

60. **There are examples in other sectors where different regulatory functions have been combined.** The Civil Aviation Authority, for example, focuses on both economic and safety aspects of the aviation industry. Ofcom regulates from both a content and economic regulation perspective. There are also examples in other areas where more than one regulator covers a sector with mechanisms to facilitate coordination or clarity of respective regulatory functions. In the financial sector, the Prudential Regulation Authority regulates the prudential rules of banks and insurers, while the Financial Conduct Authority is responsible for conduct and for financial market regulations, with cross representation on the regulators respective boards.

61. **Questions have also been raised about the extent to which regulators are fully held to account for their performance** (see Figure 4). The Commission is interested in whether there is a stronger role for government in this area without jeopardising the independence of regulators and accountability to Parliament, in the case of Ofwat**.**

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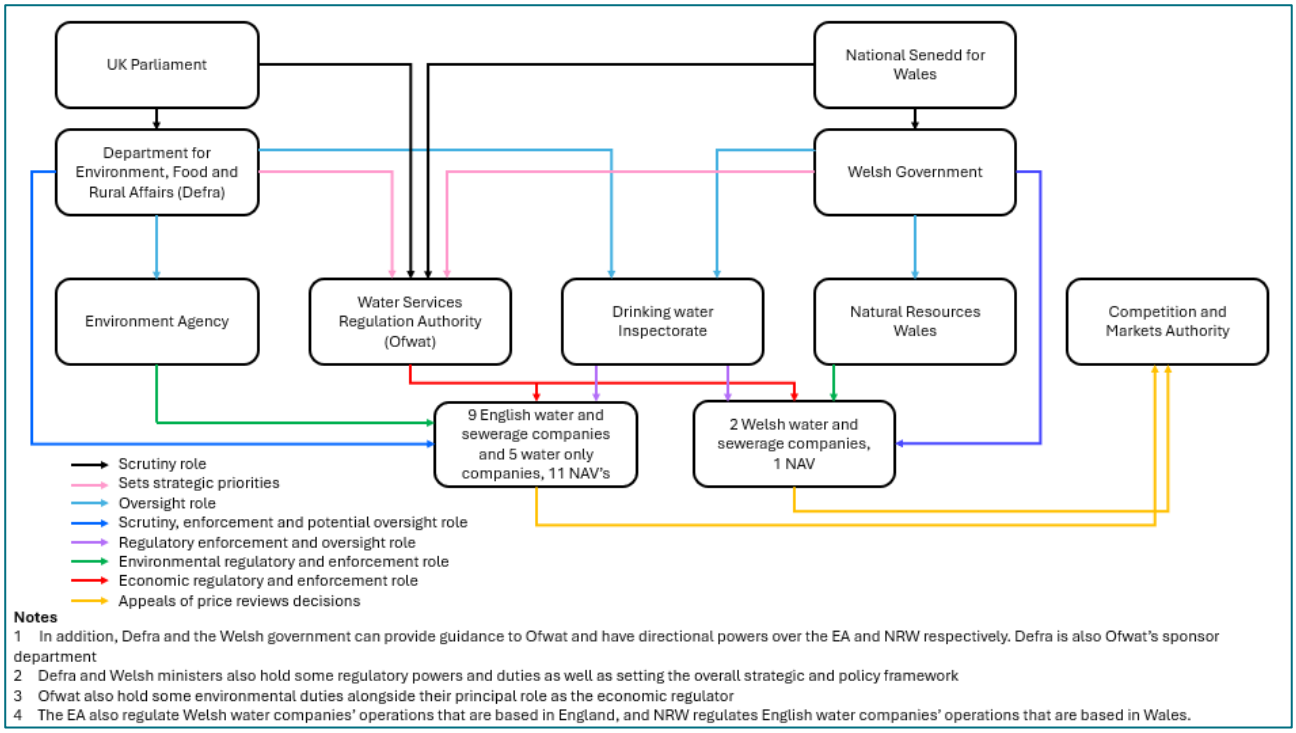
[36] Environment Agency, 'Supporting growth through regulatory reform: response from Environment Agency CEO to the Prime Minister - GOV.UK'
[37] Engagement with the Commission
[38] Royal Academy of Engineering, Upgrades in wastewater infrastructure needed to protect public health

Figure 4: Overview of the regulatory framework



Source: Modified from diagram provided by the National Audit Office[39]

Economic regulation (Chapter 4)

62. **Water companies are regional monopolies.** There is one water company for one area and customers are unable to switch to another provider. In the absence of competition, economic regulation by Ofwat serves as a guardrail to protect consumers from unwarranted prices and poor service.

63. **The centrepiece of Ofwat's economic regulation is the 5-yearly Price Review process in which water companies set out their plans for what they will deliver and how much they will charge customers**. Ofwat scrutinises and challenges these plans. It then determines what it believes is a fair amount for customers to pay.[40] Other regulators like Ofcom and Ofgem follow a similar 5-year price review model.

64. A number of concerns have been raised with the Commission, including:

    - **Ofwat's overarching approach to comparing costs between companies (known as "cost benchmarking"), as a proxy for competition.** Stakeholders have questioned whether this sufficiently captures the differences in geography, population and other challenges that different companies face.[41]

[39] National Audit Office, 'The economic regulation of the water sector'
[40] Final Methodology - Ofwat
[41] Engagement with the Commission

- **Ofwat's approach to calculating "base" expenditure (i.e. maintenance, replacement and operations).** This mainly relies on companies' historical spending, rather than assessments of the health of companies' infrastructure or future investment plans.[42]

- **The amount of "enhancement" expenditure (i.e. new infrastructure) spending that Ofwat is now expected to scrutinise**. This has significantly increased at Price Review 2024, which has increased the burden on Ofwat.[43]

65. **The Commission is seeking views on the adequacy and efficacy of the Price Review process.** Some have suggested, for example, changing the process period for some or all areas of spend, rather than having a 5-year plan for all expenditure. Others have questioned the need to assess all company business plans at the same time rather than staggering them. **The Commission is also interested in whether Ofwat's scrutiny of base expenditure could be strengthened to secure asset health outcomes.**

66. **Questions have also been raised over whether money from customer bills has been used to deliver what was set out in the business plans agreed by Ofwat**. Ofwat scrutinises water company business plans and challenges companies to deliver their plans more efficiently, but there appear to be limited mechanisms for directly checking what has actually been delivered.

67. **If companies underspend the money allocated, this is considered an efficiency by Ofwat and the company gets to keep the savings, shared 40 – 60% with customers**. The Commission has heard that some companies may have historically been incentivised to pursue a short-term cost efficiency approach where assets were only fixed when they failed rather than proactively maintained ('fix on fail').

68. **Changes in Price Review 2014 led to greater focus by Ofwat on outcomes (for example, a reduction in leakage) rather than outputs (what is built)**. This included the Introduction of Outcome Delivery Incentives (ODIs) which set targets for service improvements over the 5-year period, with companies financially rewarded or penalised against these targets. This approach may have driven short-term cost efficiency at the expense of the longer-term provision of infrastructure proposed in the companies' business plans.

69. **The Commission is exploring whether, and how, oversight of water company investment plans could be strengthened**.

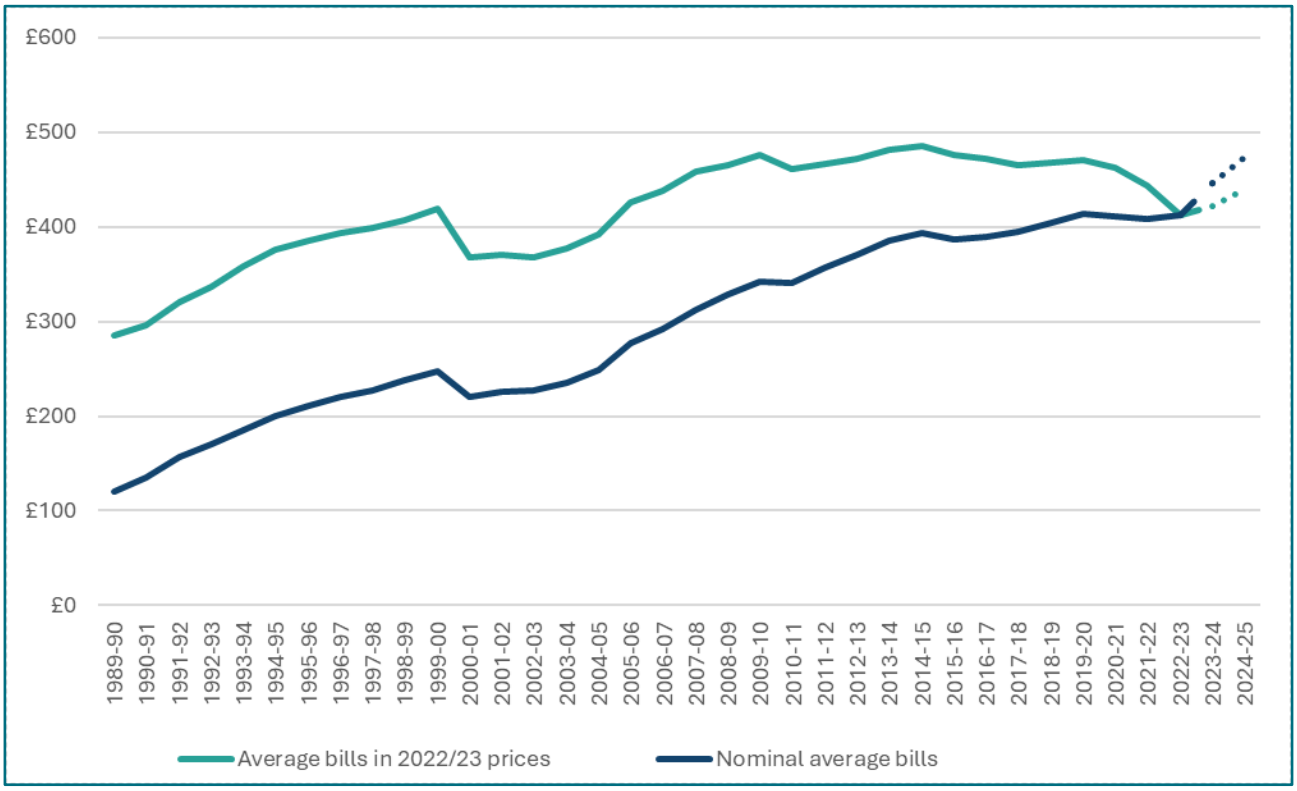
Water company bills

70. **Customer trust in the fairness of bills has fallen considerably.** In 2023, those who thought their water bill was fair fell to 55% from 64% in 2022.[44] Water bills have gone

[42] Reckon report WS2 2024.pdf page 4
[43] Enhancement Cost Benchmarking, 2 February 2022, Ofwat
[44] CCW, 'Water Matters 2024'

down in real terms nearly every year since 2014 (see figure 5) and remain significantly lower than energy bills in real terms.

Figure 5: Average annual combined water and sewerage bills since privatisation, England & Wales, 1989-90 to 2024-25, nominal and 2022/23 prices



Source: Ofwat[45]

71. **The Commission is seeking views on what has driven the deterioration in customers trust and what is needed to restore trust given that bills will need to increase to fund the required improvements in infrastructure**.

72. **The number of households in water poverty, defined as a household that spends more than 5% of their net income after housing costs on water, has increased, despite the fact that between 2014 and 2024 bills have fallen in real terms**.[46] Water poverty is likely to increase further as future bills rise to fund the growing need for investment.

73. **The Commission is exploring how to better identify vulnerable households and proactively offer support, and whether the support offered could be made fairer and more consistent**.

[45] Ofwat data provided directly to the Commission. Note that the figures for 2023-24 and 2024-25 are provisional and forecast respectively (based on latest submissions in January 2024)
[46] CEPA. 'Quantitative analysis of water poverty in England and Wales' Using the definition of water poverty that refers to where a household's bill makes up over 5% of their disposable income after housing costs; CCW, 'CCW's response to Ofwat's 2025-30 draft price determination - CCW'

Financial resilience

74. **It is clear that historical decisions made by companies on debt levels have left some companies badly financially exposed**. These decisions often coincided with moves to more complex ownership structures, and the involvement of firms with shorter term return horizons.[47]

75. **It is important that companies and their owners bear the costs as well as the benefits of the decisions they make.** But many of those involved in risky historical decisions which have led to significant financial losses and poor environmental performance have now sold their investments and moved on. It is also clear that wider pressures – beyond companies' control – have weighed on company finances.

76. **From 2015, Ofwat introduced a monitoring framework to better track companies' financial resilience.[48]** Doubts have been raised about whether this goes far enough, and also whether there is a case for Ofwat to expand its supervisory activities in this area.

77. **The Commission is seeking views on whether there should be changes to the financial resilience regulatory model**.

Investment and growth

78. **The water industry requires significant long-term investment**.

79. **Over the next five years, companies are forecast to spend £104 billion to maintain and upgrade the system, including £44 billion of investment in new infrastructure**.[49] The impacts of climate change and population growth will likely add to those costs in future price reviews.

80. **The sector will only be able to attract the finance for this investment sustainably if there is a fair balance between risk and reward, and a stable regulatory environment**. The investors who will be asked to provide the billions of pounds of finance, so that companies can deliver improvements, need to trust that they will get a fair return on their investment and a stable regulatory environment.

81. **The Commission has heard that, while in the past, the water industry has been seen as a low-risk investment delivering steady, long-term returns, that appears to no longer be the case**. Some investors have had to write off their investments entirely. More generally, investor returns have declined over time and the political and regulatory environment in which the water industry operates has, it is argued, become unstable and unpredictable.[50] The ratings agencies have downgraded the sector's

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[47] Kate Baylis, Elisa Van Waeyenberge and Benjamin Bowles. 'Full article: Private equity and the regulation of financialised infrastructure: the case of Macquarie in Britain's water and energy networks'
[48] Monitoring financial resilience - Ofwat
[49] Ofwat. In 2022/23 prices. 'Our final determinations for the 2024 price review – Sector summary'
[50] Engagement with the Commission; Monitoring financial resilience - Ofwat; Investability at PR24, Oxera for Water UK.

outlook, as well as certain companies, making the sector less attractive to investors, particularly those investors seeking low risk, low returns investment.[51]

82. **On the other hand, the Commission has also heard views that investor returns have been too high, and have been accompanied by poor company performance, especially in relation to environmental standards**.[52] A balance therefore needs to be struck between making the sector attractive to those providing the finance that is clearly needed, while also ensuring fair and stable returns and clear accountability.

83. **The Commission is gathering evidence on the role of Ofwat in setting investor returns, including at future Price Reviews.** This includes views on Ofwat's Weighted Average Cost of Capital (WACC) methodology, which determines the amount companies are allocated to reward investors for putting their money at risk. The Commission is also exploring to what extent the current system has predisposed the sector to different kinds of investors with different investment horizons.

84. **More broadly, the Commission has heard about negative political rhetoric harming the attractiveness of the sector**.[53] The Commission is interested in views on whether this is a factor in investor sentiment.

Competition

85. **Given the limited competition in a monopoly market like water, several schemes have been introduced since privatisation to try to bring elements of competition to the sector, and drive better services**. New Appointments and Variations (NAVs) are one example, used mainly by housing developers to supply new sites with water and sewerage services. The Business Retail Market (BRM) is another, enabling retail suppliers to buy services from water companies and offer them a package to sell to business customers.

86. Schemes like these enable new entrants to compete against incumbent water companies and stimulate competition.

87. **The Commission is seeking views on the strengths and limitations of these existing competition schemes and others, as well as potential options for reform**.

Water industry public policy objectives (Chapter 5)

Protecting the environment and public health

88. **Environmental regulation of water is fundamental.** It safeguards the fish, plants and other wildlife that rely on the water system. It protects public health, including for

[51] Moody's, Outlook: Regulated Water Utilities – UK, 14 October 2024,' Credit rating agency report - Moody's January 2025, Ratings.Moodys.com/ratings-news/432573'
[52] House of Lords. 'The affluent and the effluent: cleaning up failures in water and sewage regulation'
[53] Engagement with the Commission

those who those who swim, surf and enjoy other recreational activities. It also protects our finite water resources. The EA and NRW oversee the environmental performance of the water companies and their compliance with regulation.

89. **It is clear that environmental performance at many water companies has been poor, extremely so in some cases, and that as a whole, the sector has not kept pace with society's expectations for the water environment**.[54] The Commission has heard concerns around how water companies are held to account by the regulators for their environmental performance, and whether regulators are able to enforce environmental requirements.

90. Issues raised with the Commission include:

- **The extent of potential non-compliance with environmental requirements.** Since 2015, the EA has concluded 66 prosecutions against water and sewerage companies.[55] Ofwat and EA both have live investigations into possible non-compliance at wastewater treatment works.[56] There are also concerns about the capability and capacity of the regulators and whether they are monitoring in the right way, as well as the veracity of data from the water companies.[57]

- **Information in the environmental regulatory system is asymmetrical**. The regulated industry holds far more information than the regulator. The expansion in storm overflow monitoring has been welcomed, but there have been calls for more extensive monitoring and faster and better analysis of large data sets to ensure companies are complying with the standards they are expected to meet. There have also been calls for the end of the 'Operator Self Monitoring' regime, introduced in 2009, which requires water and sewerage companies to sample their wastewater, and report any breaches to the EA and NRW.[58]

- **The ability to hold water companies to account for non-compliance.** The speed and severity of penalties on water companies has attracted much commentary. The Commission has heard that the current enforcement approach has not been sufficient to drive behaviour change.[59] There are also questions over whether it is more cost effective for firms to pay a penalty than to comply in some cases.[60]

91. **The Commission is seeking views on where the regulatory oversight of the environmental performance of companies can be strengthened**.

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[54] Environment Agency, Environmental performance assessment (EPA) star ratings 2011 to 2023 - GOV.UK; Natural Resources Wales, Natural Resources Wales / Water reports
[55] Engagement with the Commission
[56] Environment Agency, 'Environment Agency investigation into sewage treatment works – Creating a better place'; Ofwat, 'Our investigation: Why, what, how, when - Ofwat'
[57] House of Commons Environmental Audit Committee, 'Water Quality in Rivers'
[58] Engagement with the Commission
[59] Engagement with the Commission
[60] Engagement with the Commission

Securing long term water supply

92. **Providing a secure and reliable supply of clean drinking water and sanitation services is a primary role of the water industry**.

93. **Water industry compliance with drinking water standards in England and Wales is world-leading.** Water companies consistently meet the stringent regulatory standards for drinking water, with 99.97% of samples in England and 99.96% of samples in Wales complying with regulatory standards in 2023.[61] Over 98% of people in the UK have access to safe and reliable sanitation and the 2024 Environmental Performance Index (EPI) rates the UK's drinking water safety at a perfect score of 100, ranking it among the safest globally. [62]

94. **The Commission has heard about the need for action to ensure that drinking water quality standards continue to be maintained to a high standard over the long term, including looking at whether the existing regulations should be reviewed and updated**.[63]

95. **The Commission is considering how to ensure continued high standards**, for example by updating regulations, increasing capability and capacity or extending DWI's regulatory powers.

Infrastructure resilience and delivery

96. **Safe drinking water and effective wastewater management requires resilient infrastructure and supply chains**.

97. **The Commission has heard that the true health of the water industry's asset base – its pipes, water treatment plants, reservoirs and pumping stations – is unclear**. Companies do not appear to have comprehensive asset maps or asset health information.

98. **In terms of monitoring infrastructure resilience and asset health, Ofwat requires companies to self-report annually on a limited number of metrics (mains repairs, sewer collapses, and unplanned outages)**. These metrics, however, are outcome-based and only present on failure, rather than tracking the current condition of assets.

99. **Replacement rates appear low**. The majority of mains pipes were built prior to privatisation (see Figure 6), and their replacement rate has decreased significantly post 2008.[64] The current replacement rate for waters mains is 0.1% annually, 10 times lower

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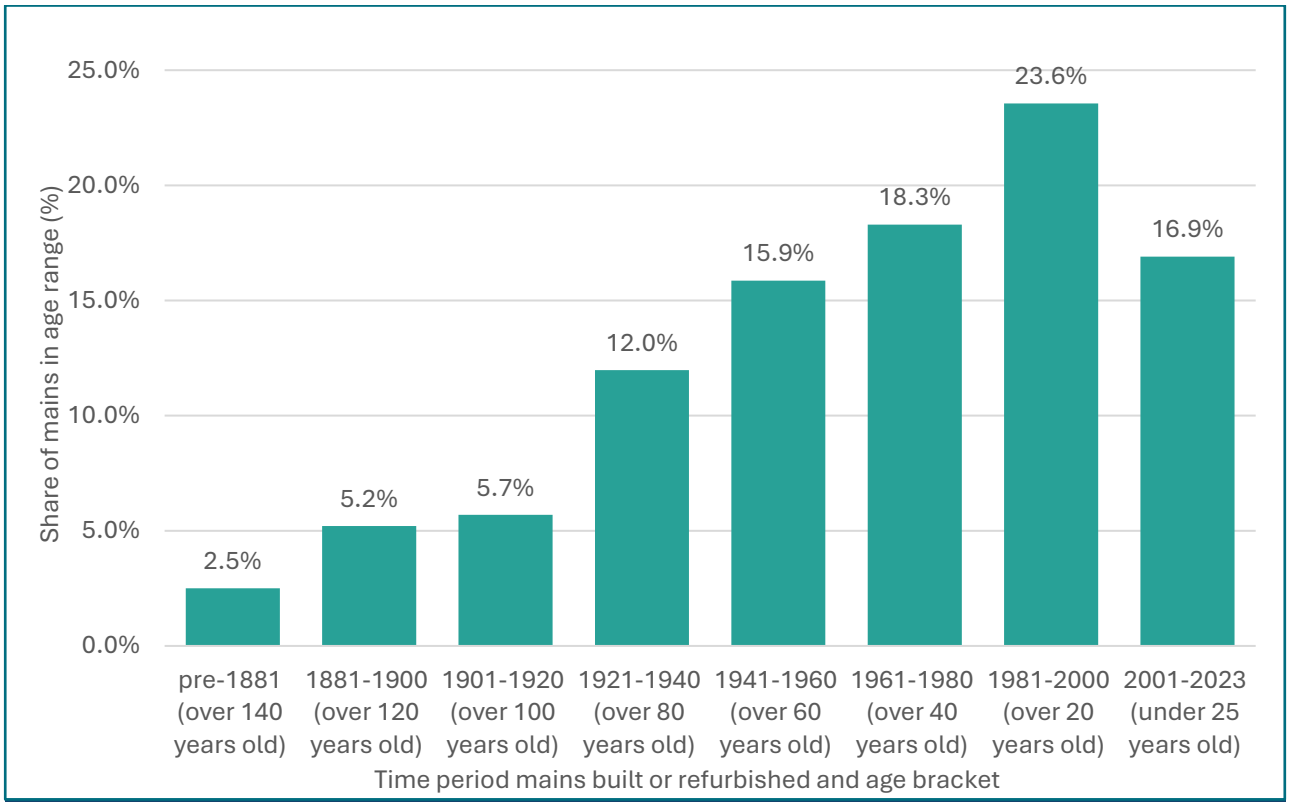
[61] The Drinking Water Inspectorate, 'Drinking Water 2023: The Chief Inspector's report for drinking water in England, Drinking Water 2023: The Chief Inspector's report for drinking water in Wales' (13 February 2025)
[61] Environmental Performance Index, '2024 Environmental Performance Index - Unsafe drinking water' (13 February 2025)
[62] Environmental Performance Index, Unsafe Drinking Water
[63] Engagement with the Commission
[64] Ofwat report that average mains renewal rates declined post 2008 due to the end of the drinking water quality improvement programme

than the European average while the replacement rate for wastewater assets is 0.2%, 3 times lower than the European average of 0.6%.[65]

Figure 6: Share of mains' length built or structurally refurbished in England & Wales by installation period, WASCs & WOCs, 2022/23, %



Source: Independent Commission analysis[66]

100. **The Commission has also heard that a lack of overarching resilience standards for infrastructure means companies do not always know what standards they should be aiming for**.[67]

101. **The Commission is seeking views on asset resilience and asset health**, including whether monitoring of water infrastructure should be improved, whether resilience standards are needed, and whether the current approach to asset renewal is adequate.

102. **Water company infrastructure must also be resilient to hostile threats, including on cybersecurity**. The Commission is interested in options to ensure the security of the sector.

103. **The Commission is also seeking views on water industry supply chains.** The water industry relies on other industries, particularly for the chemicals needed to source, treat and distribute water. The Commission has also heard concerns around construction supply chains given the significant new infrastructure planned in Price

[65] Options for a sustainable approach to asset maintenance and management, Economic Insight for Water UK
[66] Independent Commission analysis of Ofwat Data
[67] Developing resilience standards in Uk infrastructure, National Infrastructure Commission

Review 2024 (including 9 new reservoirs and a tripling of the rate of mains replacement).[68]

104. **The Commission is seeking views on the capacity and robustness of supply chains, particularly given the scale of new investment**.

Delivering innovation

105. **The Commission has heard views about innovation in the water sector and whether it is constrained or incentivised by the regulatory framework**. Initiatives such as Ofwat's Innovation Fund, and broader industry-wide bodies (for example, UK Water Industry Research) appear to have encouraged innovation.

106. **However, the Commission has also heard that risk aversion from both regulators and water companies could be stifling innovative approaches**. Environmental legislation, it has been argued, favours more 'certain' engineering approaches over newer, less tested options.[69]

107. **New technologies like AI appear to offer the potential to deliver better monitoring, mapping and prediction of infrastructure issues**. Rolling these out is likely to require new skills and attitudes, as well as resources from companies and regulators alike.

108. **The Commission has also heard concerns about the impact of Ofwat's Price Review process on innovation and whether the 5-year duration of the Price Review mitigates against companies pursuing longer-term innovative opportunities presented by new technologies**.[70]

109. **The Commission is seeking views on how the regulatory framework should support innovation**.

Water company ownership (Chapter 6)

110. **There are several models of ownership for water companies.** In England, three groups are publicly listed on the London Stock Exchange (Severn Trent, Pennon Group and United Utilities).[71] Others are owned by groups of private investors, including private equity funds, pension funds and international infrastructure companies. The proportion of publicly listed companies has decreased since privatisation (see Figure 7).

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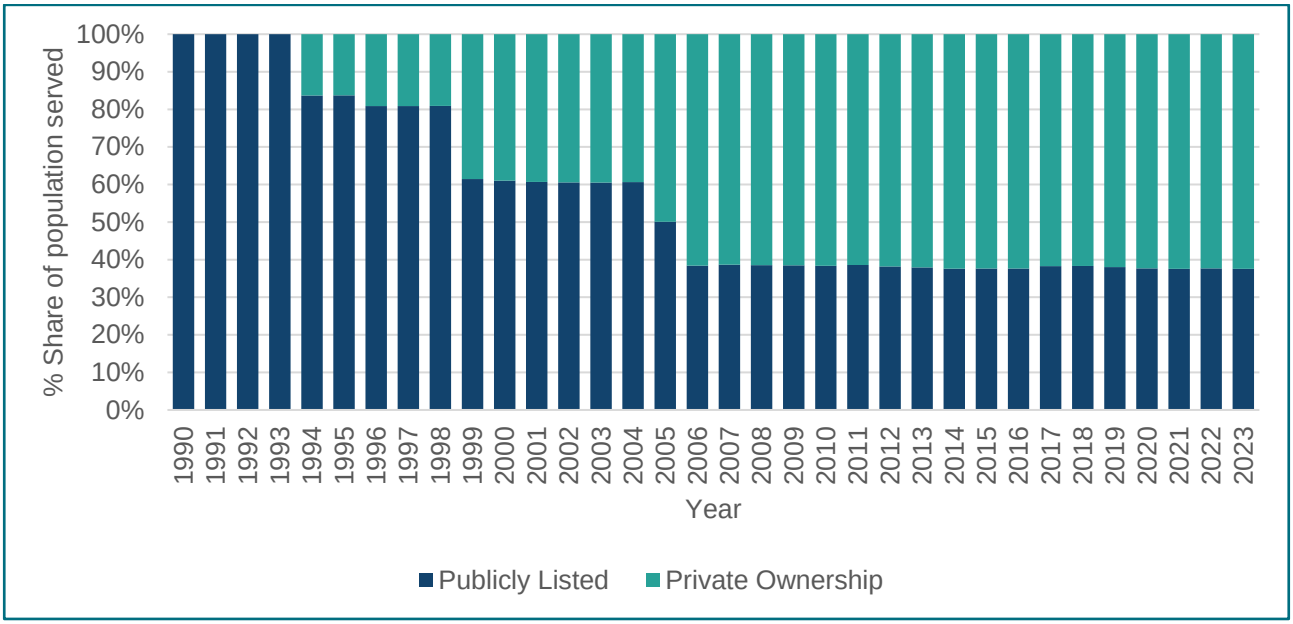
[68] Engagement with the Commission
[69] Understanding the value and limits of nature-based solutions to climate change and other global challenges
[70] Engagement with the Commission
[71] Severn Trent. 'Our shares | Shareholder centre | Severn Trent Plc', Pennon Group. 'Water and wastewater | Pennon Group PLC', United Utilities. 'Investor guide | United Utilities - Corporate'

Figure 7: Evolution of ownership, England, WASCs only, 1990 to 2023, share of population served, %



Source: Independent Commission analysis[72]

111. **Initial evidence does not suggest a clear causal relationship between ownership models and performance on a range of metrics**. Publicly listed companies often have better financial resilience, although a link to public trust is less clear.[73] Dŵr Cymru Welsh Water has a not-for-dividend model and enjoys higher public trust than the average, but demonstrates mixed performance across operational, financial and environmental outcomes.[74]

112. **On governance, the Commission notes that the UK government has already asked companies to change their 'Articles of Association' – the rules governing each company – to make the interests of customers and the environment a primary objective**. Consumer panels are being set up to involve consumers in decisions.[75]

113. **The Commission is interested in further views and evidence on different ownership and governance model options**.

[72] Independent Commission analysis of Ofwat data provided directly to the commission
[73] See recent monitoring and financial resilience reports published by Ofwat. Monitoring financial resilience - Ofwat
[74] Ofwat. 'Monitoring Financial Resilience report 2023-24 - Ofwat', Water Company Performance Report 2023-24 - Ofwat, NRW. 'Natural Resources Wales / Annual performance report for Dŵr Cymru (Welsh Water), CCW. 'Water Matters May 2024'
[75] Defra. 'Government announces first steps to reform water sector - GOV.UK'

Chapter 1: The history

Privatisation and early private investment (1989-91)

114. **The Water Act 1989 privatised the 10 regional water authorities in England and Wales.** The government first published its proposals to privatise the English and Welsh water industry in 1986. As part of these proposals, the government argued that profit would be an effective incentive for improving performance.[76] Significant investment was also needed to meet EU environmental standards since the European Commission had started prosecution proceedings against the UK government for non-compliance in the mid-1980s. Following the 1987 election, the government put an (amended) version of these proposals into place, with 10 private water and sewerage undertakers and 29 water-only companies created.[77]

115. **To make the sector attractive to investment, the government cancelled the long-term debt of £4.9 billion owed by the previous water authorities, provided a cash injection of £1.5 billion (the 'green dowry') and gave a capital tax allowance of £7.7 billion**.[78] All 10 water and sewerage companies (WASCs) were also floated publicly on the London Stock Exchange. The government initially retained a 'golden share' in each, preventing any individual or company from controlling more than 15% of voting shareholdings.

116. **Alongside privatisation, a new regulatory model was formed across England and Wales to oversee newly privatised water companies**, with the UK and Welsh governments responsible for setting the overall strategic framework and policy priorities within which the regulators must operate. Three regulators were established under the Water Act 1989 and the Water Industry Act 1991:[79]

    - The **National Rivers Authority** (which has been replaced by the **Environment Agency (EA)** in England and **Natural Resources Wales (NRW)** in Wales) – the environmental regulators
    - The **Drinking Water Inspectorate (DWI)** – the drinking water regulator
    - The Director General of Water Services and the Office of Water Services (**Ofwat**) – the economic regulator

[76] Water Act 1989
[77] THE DEVELOPMENT OF THE WATER INDUSTRY IN ENGLAND AND WALES, Ofwat and Defra, 2006
[78] THE DEVELOPMENT OF THE WATER INDUSTRY IN ENGLAND AND WALES, Ofwat and Defra, 2006 - In 1989 prices.
[79] Water Industry Act 1991

Investment and consolidation (1992-99)

117. **The government redeemed its golden shares in 1995, enabling holding companies to sell their regulated business and pursue take-overs and mergers**.[80] This led to a series of consolidations (for example, Sutton District Water merged with East Surrey Water in 1996 to form Sutton and East Surrey Water).[81] From the late 1990s Companies also began moving to private control (for example, Southern Water delisted in 1996).

118. **Relatively high dividends were also paid in this period (averaging 12% of regulated equity), compared to current standards.** This appears to have been by design, and it was recognised that, to make a success of privatisation, high returns were needed to attract investment.[82]

119. **However, high returns did coincide with genuine operational and environmental improvements and investment in the 10 years following privatisation**. Between 1990-91 and 1999-2000, companies invested approximately £44.4 billion in enhancing infrastructure (in 2022-23 prices).[83] Following the passage of the Water Act 1989, the Bathing Waters (Classifications) Regulations 1991 were produced, implementing the 1976 European Economic Community Bathing Water Directive.[84] The Urban Waste Water Treatment (England and Wales) Regulations 1994 were also brought into force. These respectively drove significant investment by water companies at the time in coastal and urban sewage treatment works. A severe drought in 1995 also led to an increased focus on addressing water efficiency;[85] leakage reduced by over 30% between 1994-95 and 1998-99.[86] Low water pressure was improved, and sewer flooding incidents also reduced during this period.[87] 1997 saw a one-off windfall tax levied against water (and other) utilities which could have induced more borrowing.[88]

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[80] THE DEVELOPMENT OF THE WATER INDUSTRY IN ENGLAND AND WALES, Ofwat and Defra, 2006
[81] SES. 'History of SES Water | SES Water'
[82] Calculated using statutory dividend / regulated equity.
[83] Ofwat. Long-term data series of company costs - Ofwat - 2022-23 prices have been used throughout the call for evidence document to maintain consistency with Ofwat's approach in their Price Review 2024 documents. This figure was updated from 2019-20 prices to 2022-23 prices using the ONS CPIH index.
[84] A review of implementation of the Bathing Water Regulations in England
[85] THE DEVELOPMENT OF THE WATER INDUSTRY IN ENGLAND AND WALES, Ofwat and Defra, 2006
[86] Ofwat. 'Leakage Dataset - March 2023 - Ofwat'
[87] THE DEVELOPMENT OF THE WATER INDUSTRY IN ENGLAND AND WALES, Ofwat and Defra, 2006– page 86
[88] THE DEVELOPMENT OF THE WATER INDUSTRY IN ENGLAND AND WALES, Ofwat and Defra, 2006– page 95

Restructuring and declining returns (2000-09)

120. **Companies continued to transition to private control.** A number of privately held companies also adopted novel structures. Some stakeholders have suggested use of Whole Business Securitisation (WBS) in the 2000s was an attempt to lower borrowing costs in a more hostile regulatory environment.[89] At a similar time, following financial challenges, Dŵr Cymru Welsh Water moved to a not-for-profit model, under which the company retains earnings for interest payments but does not issue new equity or pay dividends. By 2008, following the delisting of Yorkshire Water, only 3 water and sewerage companies in England remained publicly listed: Severn Trent Water, South West Water and United Utilities. Water company returns also continued to decline.[90]

121. **Changes in company structures appear to have coincided with increasing debt levels in the sector.** In 1991, gearing in the sector was 4%; by 2009, average gearing had risen to 72%. Several companies increased gearing well above average levels, including Anglian (to around 90% gearing in the late 2000s) and Southern (95% gearing in the late 2000s).[91] *Chapter 4, Financial Resilience* discusses gearing in further detail.

122. **Increased debt was used to fund further infrastructure improvements, although, the level of investment in the sector began to decline**. Between 2000-01 and 2009-10, companies invested approximately £29.5 billion in enhancing infrastructure.[92] There was a continued focus on implementing the Bathing Waters (Classifications) Regulations 1991 as well as the Urban Waste Water Treatment (England and Wales) Regulations 1994. New legislation was also brought into place, including regulations implementing the Water Framework Directive (WFD) in 2003, which created a new framework for managing the water system as a whole. The EU's 2006 Bathing Water Directive was also transposed into UK law through the Bathing Water Regulations 2008, with a new target for all bathing waters to achieve sufficient status by 2015. While these Directives drove new activity, enhancement spending declined by circa 20% relative to the previous decade.[93]

[89] Asset Securitization, Comptroller of the Currency Administrator of National Banks
[90] Price Review 1999 Final Determinations
[91] Based on industry average. Data provided by Ofwat.
[92] Ofwat. 'Long-term data series of company costs - Ofwat'
[93] Ofwat. 'Long-term data series of company costs - Ofwat'

Post-2008 financial crisis drift (2010-19)

123. **The water industry weathered the 2008 financial crisis, however, returns continued to decline.** Companies did not experience significant financial issues in the years immediately following the financial crisis. Despite this, returns continued to follow a downward trajectory.[94] To some extent, this decline appears to reflect broader macroeconomic trends, with low interest rates in the decade following the financial crisis. In line with other sectors, debt levels also stabilised at water companies at around 70% gearing.

124. **Industry structure saw some changes, with the adoption of new measures for competition.** In 2009, an independent review of competition and innovation in water markets by Martin Cave recommended the introduction of further competition in the sector.[95] This resulted in the sector being split into wholesale and retail suppliers from 2014. This enabled the creation of a retail market, whereby business customers can choose their water and wastewater supplier. There was also an expansion of the New Appointments and Variations (NAVs) regime, allowing new entrants to replace incumbent water and sewage companies.[96]

125. **The EA also shifted its approach during this period.** Prior to 2009, it had tested water company effluent using in-house laboratory facilities and on the ground inspections and sampling. From 2009, the EA moved to a model of 'Operator Self-Monitoring', with water companies expected to sample effluent and report results to it.

126. **The move to self-reporting – combined with the introduction of new monitors – did enable a significant expansion of the amount of data reported**. In 2013, government wrote to water companies instructing them to install Event Duration Monitors at storm overflows across England, to enable greater transparency over the frequency and duration of sewage discharges. This significantly increased public access to data on the scale of the sewage problem in England.[97]

127. **However, additional reporting did not appear to drive significant changes in company behaviour – and was accompanied by growing public criticism**. The expansion of environmental monitoring has also highlighted the extent of pollution incidents and the challenges current wastewater infrastructure faces in dealing with rainfall events and other capacity pressures. Despite increased public scrutiny, limited environmental improvements appear to have been made in the 2010s. Between 2009 and 2019, serious pollution incidents fell by 15% but the total number of pollution incidents increased.[98]

128. **Broader changes in regulatory responsibilities also happened during this period**. For example, the Water Act 2014 gave Ofwat an additional duty to further the

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[94] See *Chapter 4* for analysis of returns over time.
[95] Competition and innovation in the water markets (Cave review) - GOV.UK
[96] New Appointments and Variations (NAVs) - Ofwat
[97] Letter from Richard Benyon MP, Event Duration Monitoring - Storm Overflows - Annual Returns
[98] Independent Commission analysis of EA data.

long-term resilience of water and wastewater services. This coincided with Ofwat taking an increasing interest in company finances – with Monitoring Financial Resilience reports published annually from 2015-16. The DWI also gained new responsibilities during this period. For example, the Network and Information Systems Regulations 2018 created a new framework for managing the cyber security of critical UK sectors – which eventually resulted in the DWI adopting new responsibilities for overseeing water infrastructure cyber security.

Budget squeeze (2020-24)

129. **Since 2022, there has been a more challenging operating environment for water companies.** Macroeconomic conditions deteriorated, with interest rates increasing from 0.1% at the end of 2021 to a peak of 5.25% between August 2023 and August 2024 and input costs rising.[99] Water company finances have been further squeezed by increasing input costs (for example, energy) and a real terms decline in customer bills. This has coincided with increased press scrutiny and public interest in water quality, and a decline in public trust in water companies, with public pressure for a change of culture and increased transparency.[100]

130. **Ofwat has responded to these pressures by looking more closely at company finances.** For example, Ofwat has reduced the notional level of gearing for companies, signalling to companies to reduce debt.[101] More recently, Ofwat has made a series of changes to introduce stronger checks on company finances (for example, raising the cash lock-up condition, which imposes restrictions on dividend payments).[102] This monitoring and engagement with companies between Price Reviews could be characterised as a move towards a 'supervisory' rather than regulatory approach.

131. **Relative to Price Review 2014, more companies appear to have struggled to achieve the return set by Ofwat at Price Review 2019.** There has also been widening in company performance. Combined with increasingly negative political rhetoric in the sector, this appears to have contributed to financial challenges at some companies – with rating agency downgrades.[103]

132. **Governments across this period also responded to increased public scrutiny by bringing forward a raft of legislation to strengthen environmental expectations on companies**. The UK government introduced new environmental requirements, including under the Environment Act 2021, to set new, more stringent targets for pollution reduction and monitoring – storm overflow investment alone for Price Review 2024 is just under £12 billion.[104] This has contributed to significant increases in planned infrastructure spending at Price Review 2024 overall. Some companies have questioned whether this level of spending is deliverable given constraints on supply chains and there has also been push-back from consumer and environmental groups on the level of bill increases associated with this investment.

[99] Bank of England. 'Interest rates and Bank Rate | Bank of England'
[100] Water Matters 2024 - CCW
[101] Ofwat. 'PR24-draft-determinations-Aligning-Risk-and-Return.pdf'
[102] Returns and dividends - Ofwat
[103] Reports Directory | Moody's
[104] Ofwat. 'Price Review 2024 final determinations: Sector summary - Ofwat' – page 14

Current situation (2024-present)

133. **The combination of company decision-making, changes in regulatory approach, new government legislation and exogenous shocks has meant the water industry now faces multiple challenges**. These range from financial difficulties and uncertain asset health to public distrust and environmental weaknesses. At the same time, the industry needs to attract investor financing to fund the largest ever capital investment programme to meet environmental obligations following decades of underinvestment.

134. **However, there are significant differences between water companies, with leading performers showing strong environmental and financial performance in recent years**. Severn Trent Water and United Utilities were rated positively by both Ofwat on financial performance and the EA on environmental performance. Other companies such as Southern Water and Thames Water were rated poorly in 2023-24 on both financial resilience and environmental performance. Other WASCs show a mixture of environmental and financial performance, with some showing financial resilience concerns but performing well environmentally. Ofwat has noted that all water-only companies are showing financial resilience concerns (of differing magnitudes).

Table 1: Performance of Water and Sewerage companies (WASCs) & water-only companies (WOCs) in England & Wales as rated by the most recent Ofwat financial resilience status, Ofwat water company performance and the EA and NRW Environmental Performance Assessments

	Ofwat financial resilience status (2023-24)	Ofwat company performance category (2023-24)	Environment Agency and Natural Resource Wales environmental performance assessment rating (2023)
Water and Sewerage Companies (WASCs)			
Anglian Water	Standard	Lagging behind	2 stars
Dŵr Cymru Welsh Water	Standard	Lagging behind	2 stars
Hafren Dyfrdwy	Standard	Average	n/a
Northumbrian Water	Elevated concern	Average	3 stars
Severn Trent Water	Standard	Average	4 stars
South West Water	Standard	Average	2 stars
Southern Water	Action required	Lagging behind	2 stars
Thames Water	Action required	Average	2 stars
United Utilities	Standard	Average	4 stars
Wessex Water	Elevated concern	Average	4 stars
Yorkshire Water	Elevated concern	Average	2 stars
Water-only Companies (WOCs)			
Affinity Water	Elevated concern	Average	n/a
Portsmouth Water	Elevated concern	Average	n/a
South East Water	Action required	Average	n/a
South Staffs Water	Elevated concern	Average	n/a
SES Water	Elevated concern	Average	n/a

Source: Ofwat, Environment Agency and Natural Resources Wales[105]

Green = Ofwat financial resilience standard status, Ofwat company performance leading category, Environmental Agency and Natural Resource Wales Environmental performance assessment of 3 (above average company) or 4 (industry leading company) out of 4 stars.

Amber = Ofwat financial resilience elevated concern status, Ofwat company performance average category, Environmental Agency and Natural Resource Wales Environmental performance assessment of 2 (company requires improvement) out of 4 stars.

Red = Ofwat financial resilience action required status, Ofwat company performance lagging behind category. Environmental Agency and Natural Resource Wales Environmental performance assessment of one (poor performing company) out of 4 stars.

[105] Ofwat. 'Monitoring Financial Resilience report 2023-24 - Ofwat - page 7, Ofwat. 'Water Company Performance Report 2023-24 - Ofwat' - page 8, Environment Agency. 'Environmental performance assessment (EPA) star ratings 2011 to 2023 - GOV.UK', NRW. 'Natural Resources Wales / Annual performance reports for Hafren Dyfrdwy', NRW. 'Natural Resources Wales / Annual performance report for Dŵr Cymru (Welsh Water)'

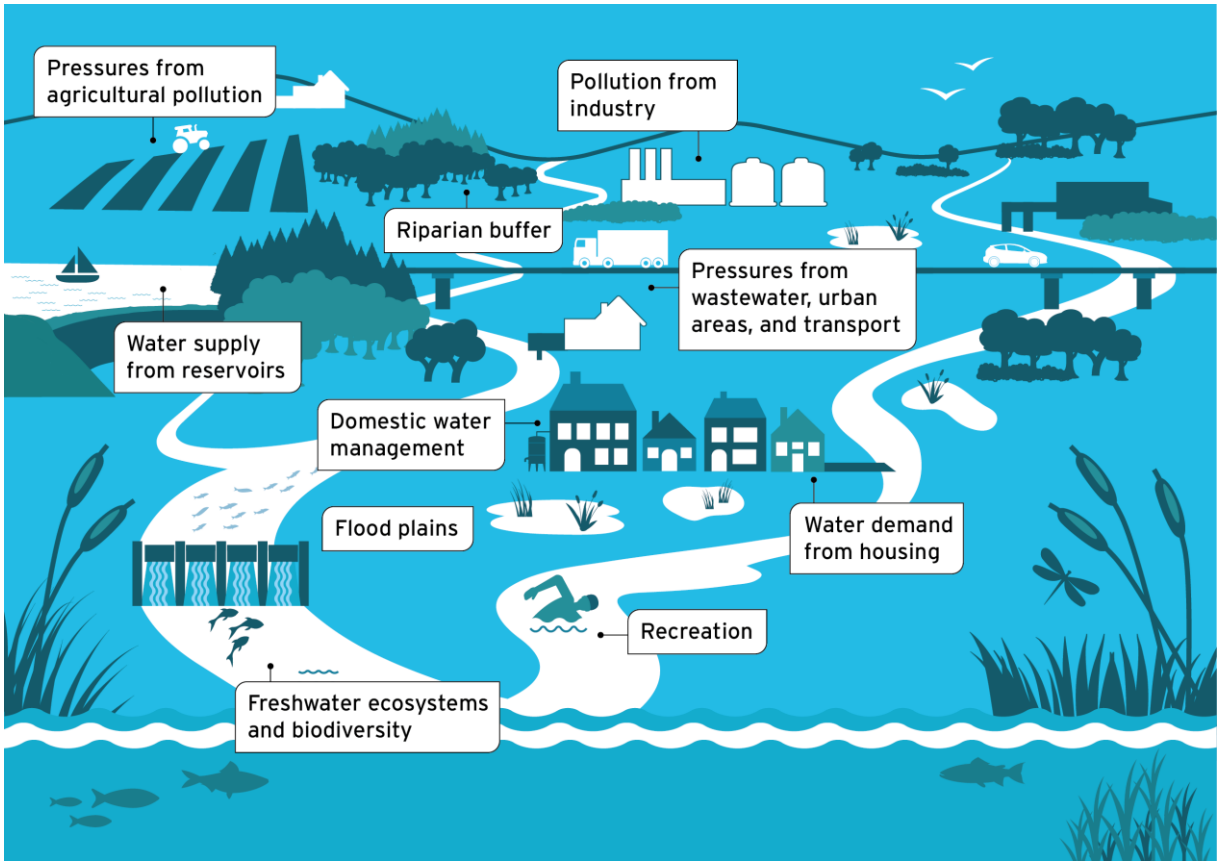
Chapter 2: Overarching framework for the management of water

135. **This section covers the system for managing water as a whole.** We have one water system that is facing many pressures, competing demands and low levels of public trust. It requires integrated planning and coordination between different groups, and clear strategic direction from government on priorities and trade-offs. This section also considers the water system's high-level legal framework and targets.

Management of water

Background

136. **Water management involves a wide range of sectors.** Local and regional governments, transport organisations, farmers, businesses, water companies, regulators, NGOs, and others all make decisions which affect the water system. These decisions have impacts on the quality and ecological sustainability of the water environment, the supply of water, as well as our public health, the risk of flooding, and our ability to enjoy the water environment. This range of decision-makers and demands on the water system can make the management of water complex, with trade-offs between different outcomes.



137. **The pressures on water are growing.** Climate change, population growth, and aging assets are causing increasing supply and pollution pressures, and there is an emerging

awareness of contaminants, such as per-and poly-fluoroalkyl substances (PFAS) ('forever chemicals') and microplastics, entering our waterways.[106]

138. **Alongside growing pressures on the water system, there are growing demands from the general public on the standards they expect their water bodies to meet**. As well as driving scrutiny of whether existing environmental regulations (and the system that oversees their implementation) are sufficient, this raises challenges around funding, cost and affordability. Box 1 below highlights increasing public anger on sewage discharges, for example.

Box 1: Sewage Pollution and Public Scrutiny

In recent years, the issue of sewage discharges into the UK's waterways has gained significant public and political attention, with a particular focus on the use of storm overflows. While storm overflows have been used as part of the combined sewage system for many years (in line with original Victorian design), they have recently come to the sharp attention of the public.

Monitoring data started to be published annually by the Environment Agency from 2021 and has been translated into live sewage maps, such as that run by Surfers Against Sewage.[107] Videos and photos shared on social media of sewage spills have demonstrated the scale of spills by water companies.

In addition to signposting where discharges were happening, these information sources highlighted potential non-compliance by water companies. Alongside high-profile investigations by the regulators (such as Ofwat's 2019 investigation into Southern Water) and increased public scrutiny of the financial affairs of some companies (including Thames Water), public trust in water and sewerage companies has been seriously eroded.[108]

The strength and breadth of public feeling on the current volume and frequency of sewage discharges has been felt at many levels. It is regularly the subject of parliamentary debate, media scrutiny and even television documentaries. [109] The public has named visible pollution in the water (including sewage) and sewage being discharged by companies as their top concerns for the water environment.[110]

In response, in England the UK government published the Storm Overflows Discharge Reduction Plan, which sets targets for water companies to reduce the use of storm overflows.[111] The direct costs of implementing the plan were estimated to

[106] Defra. 'Plan for Water: our integrated plan for delivering clean and plentiful water' GOV.UK, 2023
[107] Surfers Against Sewage, 'Live Sewage Map',
[108] Ofwat, 'PN 12/19 Southern water to pay £126m following Ofwat investigation', 2019; Ofwat, 'Customer trust and satisfaction in water companies falling in latest Ofwat and CCW research', 2024, UK Parliament EFRA Committee, 'EFRA Committee calls Thames Water in to give evidence, following concerns over its finances' , 2023
[109] Defra Press Office, 'Storm overflow discharges in the media – Defra in the media', 2022; Hansard, 'Storm overflow spillage', 2023; Defra, 'Government response to 'Our Troubled Rivers' documentary', 2023;
[110] Information Shared through EA Engagement with the Commission
[111] Defra, 'Storm overflows discharge reduction plan - GOV.UK', 2022,

be around £60 billion at the date of publication, to be paid for by companies and customers.[112] According to the UK government, this represents the largest investment plan in water company history.[113]

However, pollution caused by untreated sewage makes up only a small portion of the water industry's contribution to pressures affecting the water environment, and pollution from other sources significantly affects water bodies (shown in Figures 10 and 11).

139. **Many stakeholders increasingly emphasise the importance of managing water as a system to meet these growing challenges.[114]** For example, across much of the UK, the drainage and sewerage network is set up as a combined system, typical of Victorian design, with one pipe to take away both sewage, rainwater and road and surface run off.[115] As a result, excess rainwater can lead to the combined systems being overwhelmed. When this occurs, excess sewage and rainwater is discharged into rivers, lakes or the sea via storm overflows, which are built into the system as 'valves' to prevent properties from flooding or sewage backing up.

140. **Taking a system-wide approach can achieve multiple outcomes**. For example, sustainable drainage systems, which mimic natural water flow and are designed to reduce the impact of rainfall by using features such as soakaways, grassed areas, permeable surfaces and wetlands, can reduce the quantity of water entering combined sewer systems. This can therefore reduce pollution from untreated sewage ending up in our waterways via storm overflows, while also providing other benefits such as mitigating surface water flood risk and improving biodiversity.[116]

141. **Plans have been created by the UK Government and Welsh Government which seek to manage water holistically.** In England, both the Environmental Improvement Plan (EIP) (now under review by the current government), and the previous government's Plan for Water set out goals, targets, and policies across a range of activities impacting water, from water quality to water resources.[117] In Wales, the Water Strategy for Wales sets out the strategic direction for water policy and outlines the Welsh Government's approach to managing the water system over the long term.[118] Priorities are underpinned by the Well-being of Future Generations (Wales) Act 2015,

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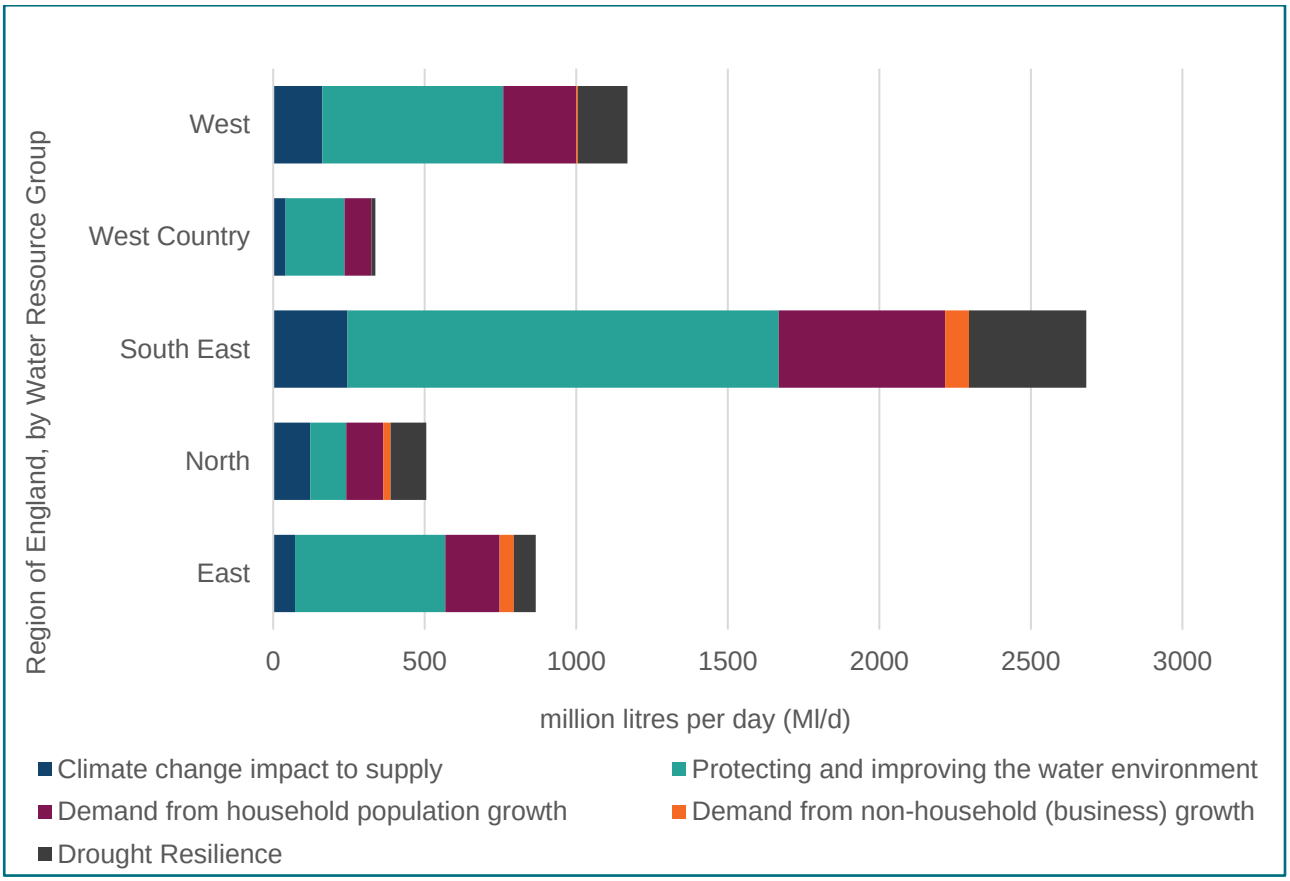
[112] Defra, 'Storm overflows impact assessment, 2023; Direct discounted costs to business, adjusted to 2024 price year using ONS GDP Deflators.
[113] Defra, 'Storm overflows discharge reduction plan', 2022
[114] IWMI. Water's Fundamental Truths: Part 2 – Why do we have to manage water as a system? - IWMI Blog
[115] Environment Agency. Combined Sewer Overflows Explained – Creating a better place
[116] Sustainable drainage systems | Local Government Association, Tackling CSO Overflows: By Use of Nature-Based Solutions - GreenBlue Urban
[117] Local Government Association. 'environganisatio 2023 - GOV.UK', GreenBlue urban. 'Plan for Water: our integrated plan for delivering clean and plentiful water - GOV.UK)'
[118] Welsh Government, 'Water Strategy for Wales', 2015,

which requires all public bodies listed under the Act to carry out sustainable development with the aim of achieving 'well-being goals'.[119]

142. **As an example of the range of pressures and sectors affecting water, Figure 8 shows estimated drivers of 2050 water need split by region in England, including water needs from population growth, business growth, protection of the water environment and requirements for drought resilience and the impact of climate change on supply**.[120] Around 55% of public water supply in England is used for household consumption, 21% is used for non-household consumption and another 21% lost to leakage.[121] Non-household consumption by volume includes highest sectors including retail, food and beverage services, education, accommodation and health.[122] Similar examples for water quality are included later in this chapter.

Figure 8: Predicted drivers of 2050 total daily water demand by region, England, in million litres per day



Source: Environment Agency data[123]

[119] Well-being of Future Generations (Wales) Act 2015

[120] A summary of England's revised draft regional and water resources management plans - GOV.UK. England only. Comparable data is not available for Wales as regional water resources plans do not cover all of Wales and data from Water Companies is collected on smaller scales.

[121] Environment Agency. Meeting our future water needs: a national framework for water resources

[122] MOSL. 'Water Efficiency dashboard'

[123] Presented by region as defined by England's 5 regional water resources groups which bring together water companies, key water users and other stakeholders operating in region. These include Water Resources

Current issues

143. The Commission has heard 4 broad issues concerning the effectiveness of long-term strategic planning for the water sector:

- A lack of clear prioritisation has been raised across public policy objectives, as well as a lack of articulation of costs and benefits, resulting in challenges in effective management of trade-offs.
- Plans do not appear to represent a holistic view of all the pressures and demands facing the water system.
- There appears to be a lack of coordination between sectors in both the development and delivery of water sector plans.
- There appear to be challenges to integrating long-term plans with clear funding mechanisms, with a possible overreliance on the water industry to fund solutions.

Long-term objectives and prioritisation

144. **While there have been efforts by the UK and Welsh Governments to create plans and strategies with a long-term, holistic view of water planning and management, these appear to have limitations**. The previous UK government's Plan for Water and Environmental Improvement Plan outlined a range of water improvement policies and actions in England.[124] The Welsh Government's Water Strategy for Wales sets out the policy direction for managing water in Wales.[125] However, the plans do not appear to establish a clear hierarchy of priorities between different public policy objectives and competing demands on the water system. The Commission has heard that this lack of prioritisation and alignment is reflected at local and regional levels. For example, water management planning on nutrient pollution and water scarcity has not been sufficiently aligned with the UK government's plans to increase housebuilding, leading to blocked development.[126]

145. **Furthermore, these plans and strategies do not appear to communicate a holistic view of the outcomes society wants and expects from the water system**. For example, the Water Framework Directive (WFD) seeks to provide an overarching strategy for the water system, with a target condition to be achieved. However, it focuses solely on environmental health and, within this, appears to take a narrow view of the objectives that water bodies should achieve, focusing on physical, chemical, and a limited range of biological elements.[127] There are also changing public expectations

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North, Water Resources West, Water Resources East, Water Sources South East, and West Country Water Resources. Data from: A summary of England's revised draft regional and water resources management plans - GOV.UK

[124] Defra, Plan for Water: our integrated plan for delivering clean and plentiful water - GOV.UK, 2023; Defra, Environmental Improvement Plan 2023 - GOV.UK, 2023

[125] Engagement with a Water Resource Management Group; Water Strategy for Wales - GOV.WALES

[126] Nutrient neutrality and housing development - House of Commons Library

[127] WCL_Blueprint_WFD_Position_Paper_July_2024.pdf; Three reasons why the Water Framework Directive (WFD) fails to identify pesticide risks - PubMed

on the water system more broadly and how people want to use and experience water, such as recreation, aesthetics, and access and this means a greater emphasis on public health outcomes may be needed.[128] Reporting from the Consumer Council for Water (CCW) shows that sewage in rivers is a pressing environmental concern among consumers, but the current water reporting system only considers pathogens from sewage and other sources in water bodies that are designated as bathing or shellfish waters.[129] The Bathing Water Regulations 2013 provide a distinct framework for monitoring waters for recreation, which are classified based on levels of E. coli and intestinal enterococci.[130] With increased interest in swimming and other water-based leisure activities outside the conventional bathing season and in non-designated waters, some stakeholders have sought to expand this monitoring to other water bodies.[131]

146. **In Wales, the Welsh Government's central strategy for water appears not to have been updated or assessed since publication in 2015**. The Water Strategy for Wales was published in 2015, and the deadlines for the short and medium-term actions outlined in the strategy's action plan have passed.[132] While the Welsh Government provided an update on actions taken under the strategy in 2016, there has since been no comprehensive update or progress reporting on the strategy and action plan.[133] This raises questions about the strategy's effectiveness, and whether it addresses emerging challenges in the water sector.

Coordination

147. **Stakeholders have raised that engagement through planning and legislation needs to engage customers more meaningfully and representatively on the wider benefits, or trade-offs solutions brought**. For example, the CCW has said that customers are willing to pay more for solutions that were nature-based, with greater environmental benefits, over man-made solutions. However, they weren't willing to write a blank cheque – they wanted proof of delivery and vulnerable customers to be supported through any price rises.[134] This nuanced position contradicts often-held assumptions that limiting bills is customers' primary focus and demonstrates the value of engagement.

148. **There appears to be a lack of coordination at a national level, where strategies are developed in silos without adequate consideration of how the targets and actions in one sector could impact another**. Examples of this exist in the UK Government's AI and Net Zero strategies, which both have high water needs but are

[128] Engagement through Independent Commission with Environment Agency
[129] Awareness and perceptions of river water quality - CCW, faecal-contamination-pressure-rbmp-2021.pdf
[130] The Bathing Water Regulations 2013
[131] Bathing Water Reform - Surfers Against Sewage
[132] Health standards framework english
[133] 160914-lg-water-strategy-english.doc, 160914-lg-water-strategy-annex-english.doc
[134] Engagement through Independent Commission with Consumer Council for Water; Consumer Council for Water (CCW) 'Keen to go Green? Customer preferences and priorities for waste water solutions - CCW'

not part of water resource plans.[135] This has also been an issue for housing development, as outlined in Box 3 below.

149. **Stakeholders have also noted a lack of coordination between national planning and local catchment actions.** The Rivers Trust's 'State of the Rivers' report contends that our current system of environmental management is inefficient, with a lack of organisations focusing on the regional scale which can coordinate between national and local activities. While some regional governance solutions have emerged organically, this common governance gap has been referred to as the 'missing middle'.[136] Water resources regional plans in England provide an example of how this could work for other water outcomes. These plans are designed to help coordination between companies' Water Resource Management Plans (WRMPs) and the goals in England's National Framework for Water Resources to ensure that the burden of achieving sustainable abstraction goals will be fairly shared between the water industry, farmers and other abstractors.[137] The UK Government's recent Devolution White Paper seeks to empower regional leaders to convene local partners to tackle shared problems that need a regional approach.[138] Box 5 sets out devolution further.

Box 2: Catchment Based Approaches

England

The Catchment Based Approach (CaBA), launched by Department Food and Rural Affairs (Defra) in 2013, has sought to foster a more local approach to water decision making. The CaBA involves coordinating policy and plans by all those who use water or influence land management in catchment areas in England and cross-border with Wales to achieve better, more cost-effective outcomes. It requires greater engagement and delivery by stakeholders at the catchment as well as at a local level, supported by the Environment Agency (EA) and other organisations.[139]

The CaBA has made some progress in demonstrating the benefits of a multi-stakeholder, civil society-led approach to water management. In 2022-23, 103 CaBA partnerships reported engagement with over 43,000 primary stakeholders, including 8,700 farmers. 93% of CaBA partnerships had worked with their local water company and a significant majority received funding or delivery support from water companies. Some stakeholders have identified strengthening catchment-based governance as a key requirement to more effectively deliver priority outcomes in the water sector.[140]

Funding for catchments is low. £15,000 per year is provided directly to Catchment Partnerships, a rate which has been unchanged since 2015-16.[141] This investment has

[135] National AI Strategy - GOV.UK, Net Zero Strategy: Build Back Greener - GOV.UK
[136] State of our Rivers Report 2024 | The Rivers Trust
[137] A summary of England's revised draft regional and water resources management plans - GOV.UK
[138] English Devolution White Paper - GOV.UK
[139] FRESH_WATER_FUTURE_MAIN_REPORT_WEB.pdf
[140] CaBA Monitoring and Evaluation Report, 2022-23, sswan-discussion-paper.pdf
[141] For Catchment Partnerships outside of London. In nominal terms. Water Resources Communication and Engagement Fund

been used to generate significant additional funding at a local level. During 2022-23, private funding ratios for CaBA partnerships resulted in around £3.50 of additional funding for every £1 directly invested by the UK Government. These non-government sources included water companies, businesses, lottery funds, EU funds, NGOs and community groups. They provided around £34 million of funding, an increase of £11 million from the previous year, in part due to increased water company investment.[142]

Wales

The Welsh Government and Natural Resources Wales (NRW) have implemented catchment scale working by bringing together stakeholders and adopting a collaborative approach to deliver improved environmental outcomes. An example of this is the Upper Wye Catchment Restoration Project, which involves NRW working with landowners, farmers, communities and local organisations to restore river corridors, create in-river habitats, and install structures to reduce pollution and prevent soil erosion.[143]

One of the key initiatives under catchment scale working is the identification of Opportunity Catchments. These are specific areas where NRW and its partners concentrate their efforts to achieve the best possible outcomes for water management. For example, in southeast Wales, efforts are focused on the Central Monmouthshire Opportunity Catchment, where nature-based solutions are deployed to improve water quality in the lower Usk and Wye catchments. This includes planting hedgerows along the watercourse to intercept water run-off and prevent livestock from entering the river.[144]

The Welsh Government has also convened 5 First minister-led River Summits to address water quality issues in Special Areas of Conservation (SAC) rivers and resultant constraints on development. The summits bring together senior representatives from regulators, water companies, developers, local government, farming unions, academia, and environmental bodies to develop a strategic and joined-up approach to tackling phosphorus pollution. The actions agreed through the Summits are set out in '*Relieving pressures on Special Areas of Conservation (SAC) river catchments to support delivery of affordable housing: action plan*'.[145]

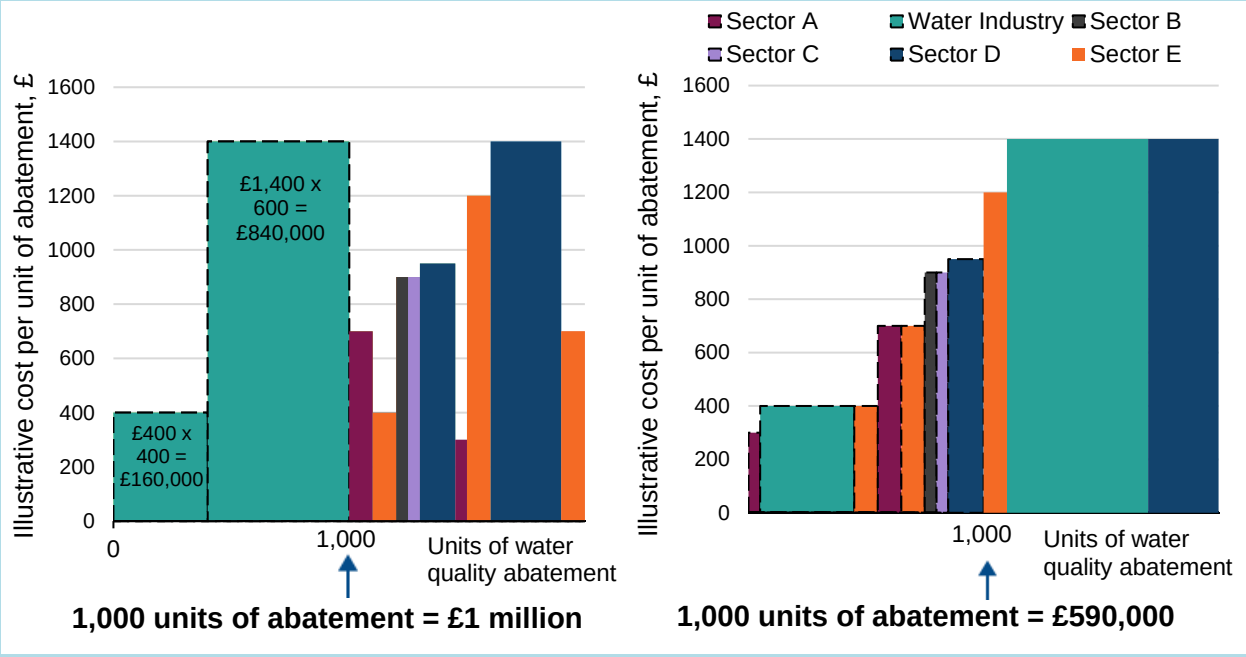
Funding & delivery issues

150. **The apparently fragmented approach by different sectors within a catchment appears to prevent the most effective approach to investment in the water system**. This can lead to single-outcome, end-of-pipe solutions (such as rainwater storage tanks to reduce the operation of storm overflows) being chosen over upstream or nature-based options which could have a wider range of benefits. Spending on water appears to be less efficient because of limitations on the ability to agree and fund

[142] Nominal terms, 2022-23 prices. CaBA Monitoring and Evaluation Report, 2022-23
[143] Upper Wye Catchment Restoration Project - Natural Resources Wales Citizen Space
[144] Natural Resources Wales / Project helps to deliver multiple benefits for nature and farming in Monmouthshire
[145] Written Statement: Second River Pollution Summit (20 March 2023) | GOV.WALES

collective actions at a regional or local level, or attribute responsibility for addressing issues in the water system. Keeping funding in silos means that spending is not always prioritised where it can have the biggest benefit-cost ratio in the catchment (as shown in Figure 9). [146]

Figure 9: Illustrative example of abatement costs by sector in a catchment



Source: Adapted from Frontier Economics[147]

Different sectors face different costs and incentives for water quality abatement activity. Without coordinated action on abatement solutions between sectors in a catchment, more costly solutions may be implemented by a water company, before lower cost solutions which could deliver the same outcomes.

Figure 9 demonstrates how a combination of solutions available to other sectors could provide the same level of abatement as a high-cost solution implemented by a water company. It shows an example where 1,000 units of abatement (left) is achieved through water industry action at a cost of £1 million, compared to a cost of £590,000 when a combination of action is taken across sectors (right). If funded by a water company, this approach could offer a cross-sector solution, at a lower cost to the water company (and bill payers) while providing wider benefits to local economies.

151. **Funding to address water body health is more readily available in the water industry than in other sectors impacting the water system**. There is a mechanism to require water company investment and increased customers' bills through the Price

[146] FRESH_WATER_FUTURE_MAIN_REPORT_WEB.pdf; OUTCOMES BASED REGULATION
[147] Example with illustrative data, figures do not represent true values for water quality abatement activity within a catchment or sector. Frontier Economics, Outcomes Based Regulation 2021

Control process and wider regulation of the water industry, but other sectors that impact the water system do not have an equivalent mechanism. This can potentially create an overreliance on the water industry to deliver environmental improvements over other sectors.

152. **Levers to require action on water from sectors outside the water industry appear to be more limited.** In England, agriculture was identified as having the most impact on water bodies with 45% of water bodies impacted by agriculture and rural land management in 2019.[148] In Wales, agriculture is identified as the most frequent cause of failures to meet Good Ecological Status (GES), with 23% of water bodies impacted by the sector.[149] Nutrient pollution from farming can have significant impacts on water body health from a wide range of agricultural sources.[150] The River Wye is an example of this, where over 70% of excess nutrients and sediment in the stretch of the river in England have been identified as entering from agricultural land.[151]

153. **Both the UK Government and Welsh Government have introduced regulatory measures to mitigate the impact of agricultural pollution, such as the Farming Rules for Water in England and the Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021 in Wales**.[152] In 2023, EA inspections in England found that more than 50% of farms which were inspected had at least one area of non-compliance with the Farming Rules for Water.[153] In Wales, NRW inspected 203 farms between November 2023 and March 2024 and found 63% to be non-compliant with one or more of the regulations on the first visit.[154]

154. **Stakeholders have questioned whether the strategic water planning framework could be improved in relation to the scale and targeting of agriculture-related actions**.[155] As shown in Figure 10 for England and Figure 11 for Wales, agriculture-related sectors have been identified as having the most significant impact, with the water industry as second highest sector of impact. Urban and transport sectors also have a significant impact on water bodies, impacting 11% of water bodies in both England and Wales.[156] Other sectors of impact include industry, the domestic general public, local and central government and mining and quarrying.

155. **The nature of water regulation appears to make it difficult to deliver cross-sector solutions.** The water industry uses billpayer money to pay for actions that will address

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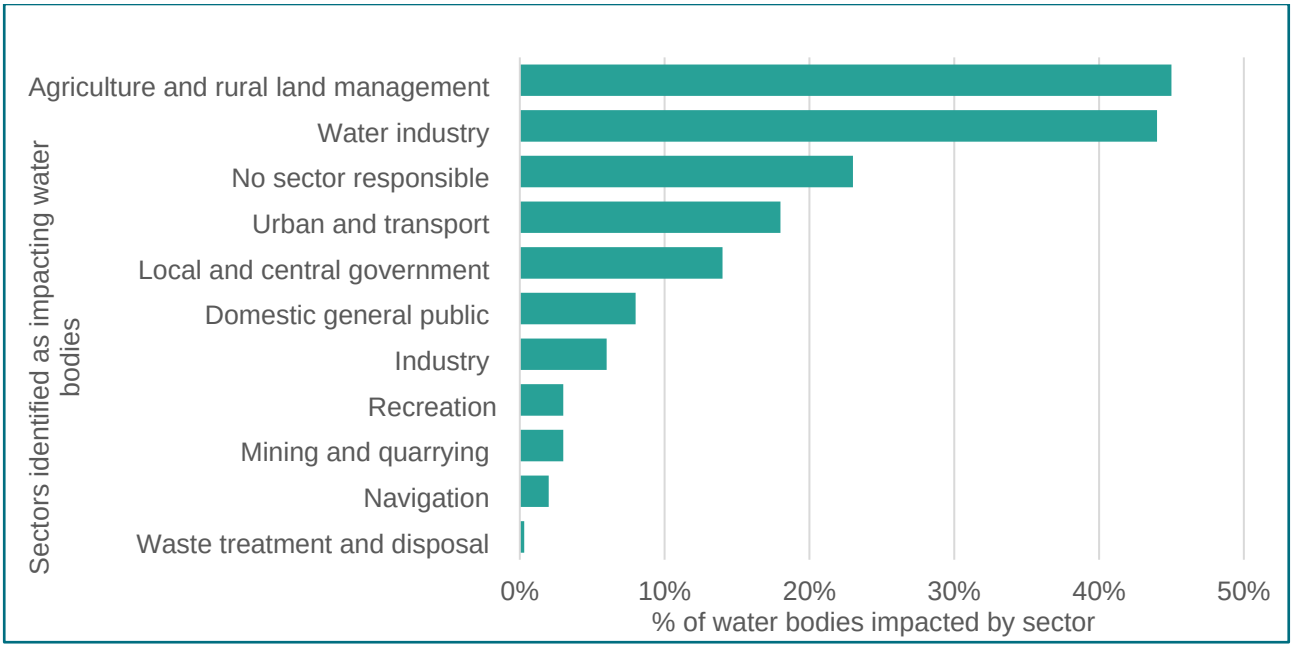
[148] Challenges data for England | Catchment Data Explorer. Count of reasons for not achieving good status with a confidence status of 'confirmed' and 'probable', where the latest classification is less than good status. Note that multiple reasons can apply to a single water body.
[149] Data provided by Natural Resources Wales
[150] agricultural-and-rural-land-management-challenge-rbmp-2021.pdf; Reducing agricultural pressures on freshwater ecosystems - POST
[151] River Wye Action Plan - GOV.UK
[152] Farming rules for water from April 2018 - GOV.UK; The Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021: guidance for farmers and land managers | GOV.WALES
[153] Working with farmers to protect our future land – Creating a better place
[154] Natural Resources Wales / Performance report 2023-24
[155] FRESH_WATER_FUTURE_MAIN_REPORT_WEB.pdf
[156] Data provided by Natural Resources Wales to the Commission, Analysis of Data Provided by EA from 25 YEP B3 evidence pack

water industry pollution, even if there is a cheaper action delivered by another sector which could deliver the same outcome or even have wider benefits. While schemes allowing water companies to work in partnership with others to meet regulatory requirements (for example, reducing diffuse nutrient pollution by changing land use) have been attempted on a trial basis, they have not been mainstreamed.[157] However, some have questioned the fairness of asking water bill payers to fund non-water industry actions such as payments to farmers for action on water.[158] For example, there is a risk that the water industry could end up paying for actions which farmers should already be taking to comply with regulations or which are simple good practice, rather than providing genuinely additional benefits to water outcomes.

Figure 10: Percentage of water bodies impacted by sector, England, 2019



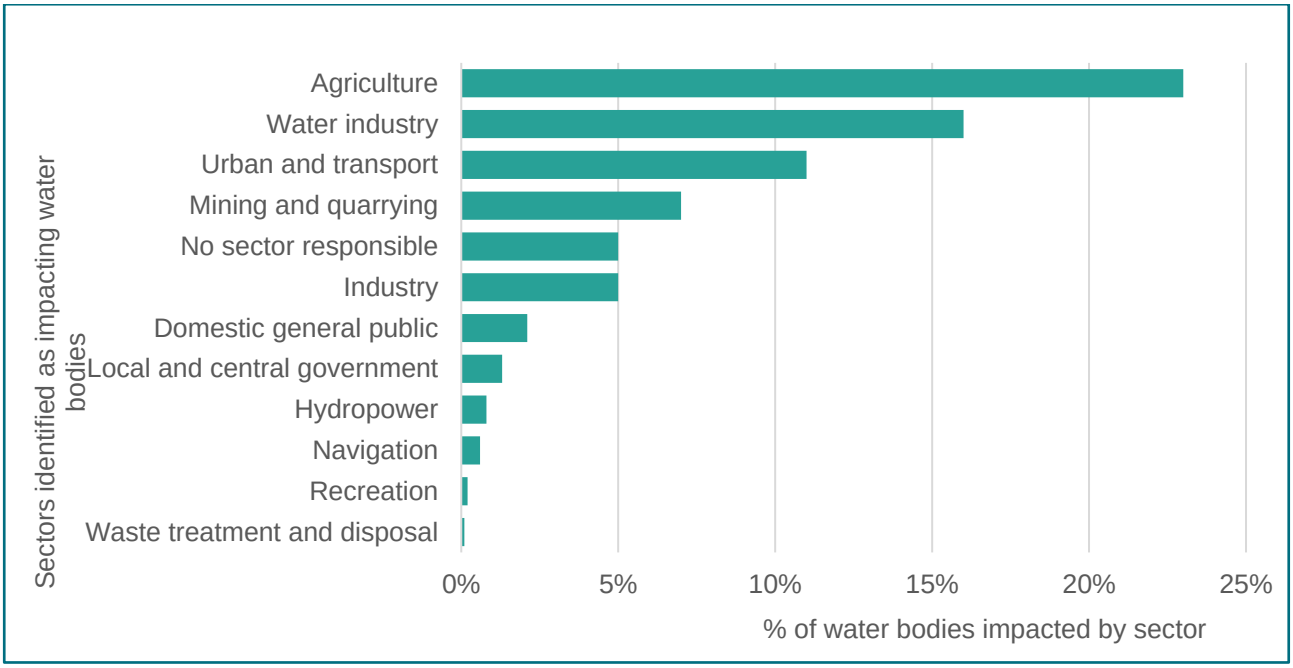
Source: Independent Commission analysis[159]

[157] Catchment Nutrient Balancing was trialled for the River Petterill, allowing water companies to work in partnership with other sectors to address pollution upstream. Transforming the River Petteril

[158] Engagement with the Commission with NGOs.

[159] Figures are taken from the 2019 set of probable and confirmed reasons for not achieving good status (RNAGs), linked to 2016 WFD classifications, 'No sector responsible' covers those situations where it is not possible to assign failure to achieve good status to the activities of a specific sector, used mainly for invasive non-native species. Around 6% of water bodies have one or more RNAGs where the sector responsible is still under investigation. Around 5% of water bodies have one or more RNAGs caused a different sector to those listed in the figure. Percentages are based on the total number of water bodies in England, not just those not achieving good status. Data from: 25 YEP B3 evidence pack

Figure 11: Percentage of water bodies impacted by sector, Wales, 2019



Source: Natural Resources Wales[160]

156. **In addition to funding issues within the water sector, the Commission has heard views on the opportunities and limitations regarding the water industry's contribution to economic growth**. The box below provides a deep dive into the water industry's current contribution to economic growth, as well as areas where there is potential for it to contribute more.

Box 3: Growth and development

The water industry already contributes both directly and indirectly to economic growth, directly through the gross value added (GVA) it provides, and indirectly through supply chains and other industries which rely on water. **The direct gross value added (GVA) in the UK water industry was £21.1 billion in 2022**. Of this, around £17.6 billion was generated in England.[161]

The water industry is already a large employer and new investment at Price Review 2024 is estimated to create 30,000 new jobs supported by 4,000 new apprenticeships.[162] In 2023, there were an estimated 73,900 employees in the water collection, treatment, supply and sewerage sector in Great Britain.[163] The majority of employees are based outside of London and salaries are above average. In 2023 the median average salary across the UK for the water collection, treatment and supply sector

[160] Analysis provided directly to the Independent commission by NRW. Data from: Natural Resources Wales
[161] SIC 36 and 37. Adjusted to 2024 prices using ONS GDP deflators. Regional gross value added (balanced) by industry: all ITL regions - Office for National Statistics
[162] https://www.water.org.uk/investing-future/pr24
[163] SIC 36 and 37. Total employment including employees and working proprietors. ONS, Industry (two, three and five-digit Standard Industrial Classification) – Business Register and Employment Survey (BRES): Table 2', 2023.

was £37,888, and the sewerage sector was £37,742. For both sectors the average salary was around 30% higher than the average across all industries (£29,511).[164]

Recently, the water industry does not always appear to have delivered broader economic objectives, such as supporting the growth in demand for water supply and sewerage services that new developments bring. For example, the 2022 Strategic Policy Statement from government to Ofwat asked that water companies "have regard to the impact of their operations on the UK government's target to increase the supply of new homes".[165] However, in some areas water companies' infrastructure capacity cannot accommodate additional demand without causing damage to the environment. Restrictions placed by Natural England and the EA on new developments in areas where there are concerns about nutrient pollution, water demand, or wastewater capacity means that some development is delayed, more costly, and sometimes cannot go ahead. [166] These issues are likely to increase in the future, with water demand expected to increase due to population growth and water supply to reduce due to climate change.[167]

These restrictions may impact the speed and number of homes built, as well as the building of commercial properties. The EA had objected to major planning applications in Oxford that add additional pressure to Oxford's sewage treatment works and also objected to Oxford's draft Local Plan 2040 on the grounds of insufficient sewage capacity.[168] Oxford City Council argued that 'the lack of sewage capacity could impact the delivery of more than 4,000 homes and over 500,000 square metres of commercial space that are planned in Oxford up to March 2028'.[169] Water scarcity was also limiting development in Cambridge, where over 9,000 homes and over 500,000 square metres of commercial space have only been able to proceed after the EA lifted its objections. A new Water Scarcity Group and an updated Water Resources Management Plan for the area, which includes the building of a new reservoir, will support sustainable development.[170]

While a different approach to future planning may have helped avoid restrictions on capacity and supply grounds, it is not clear that this is a problem for the water industry alone to solve. For example, there is currently no legislative clarity where the responsibility for network expansion lies. This may become particularly pertinent where extremely high use developments, such as data centres, are built without clear consideration of the impacts on the network. It may be appropriate in such cases that developers share the costs of network expansion with water companies. This may also

[164] Table 5.7a. 2023. Annual pay – Gross. SIC 36 and 37. Earnings and hours worked, UK region by industry by two-digit SIC: ASHE Table 5 - Office for National Statistics

[165] February 2022: The government's strategic priorities for Ofwat - GOV.UK (www.gov.uk), 'Developer Services/Connections market' section. This referred to the Johnson government's target which was in place in February 2022. The current government introduced housing targets in July 2024.

[166] https://commonslibrary.parliament.uk/research-briefings/cbp-9850/

[167] https://www.gov.uk/government/publications/a-review-of-englands-draft-regional-and-water-resources-management-plans/19b2f89b-e5ad-4387-afab-884c275437ee

[168] Statement on the state of Oxford's sewage treatment system and related planning objections | Oxford City Council

[169] Statement on the state of Oxford's sewage treatment system and related planning objections | Oxford City Council

[170] Addressing water scarcity in Greater Cambridge: update on government measures - GOV.UK

be appropriate for other, less intensive, forms of development where it is capacity and not environmental concerns which are preventing development.

Other planning issues include the availability of local plan data to enable water companies to meet the requirement that their Water Resource Management must plan for future development.[171] Further, water companies are not statutory consultees on most planning applications, meaning that they have little direct influence on developments.[172] Additionally, in England, there is an automatic right for developments to connect to the public sewer network, and legislation which would make this conditional upon the provision and approval of sustainable drainage systems (SuDS) has not been implemented.[173] The Welsh Government introduced a legal requirement for SuDS to be included in new developments in 2019.[174] Better system planning, described later in this chapter, may help to achieve consistent outcomes.

[171] Water resources planning guideline - GOV.UK (www.gov.uk)
[172] Water companies are listed as statutory consultees only for certain development involving the boring for or getting of oil and natural gas for shale: Ministry of Housing, Communities and Local Government, 'Consultation and pre-decision matters - GOV.UK' (updated 1 April 2022, viewed on 14 February 2025); UK Parliament Written questions: 'Water Companies: Planning Permission' (UIN 134334, tabled on 8 January 2021)
[173] Department for Environment, Food & Rural Affairs, 'The review for implementation of Schedule 3 to The Flood and Water Management Act 2010' (10 January 2023, viewed on 14 January 2025); UK Parliament Written questions: 'Land Drainage' (UIN HL4365, tabled on 23 January 2025)
[174] Sustainable drainage regulations come into force | GOV.WALES

Management of the water environment

Background

157. **In England and in Wales, the Water Framework Directive Regulations (WFD) currently provide the overarching statutory framework for the water environment**.[175] Other regulatory frameworks, such as the Urban Waste Water Treatment Regulations 1994 and the Bathing Waters Regulations 2013, also drive action in the water environment.[176] However, the WFD provides the overarching target condition for the water environment and the framework for achieving it.

158. **River Basin Management Plans (RBMPs), under the WFD, set out how the UK and Welsh governments will meet environmental objectives, driving aspects of water regulation and planning**. The EA and NRW are required to produce and consult on the plans, which are then signed off by the Secretary of State or Welsh ministers respectively.[177]

159. **The WFD requires governments to 'aim to achieve' Good Ecological Status (GES) for all surface water bodies by 2027.**[178] 75% of water bodies in England and 94% of water bodies in Wales have been assessed as technically being able to achieve GES.[179] However, at the last classification, only 16% of water bodies assessed in England, and 40% in Wales, reached this standard or better.[180] There is no published plan in place for these objectives beyond 2027. NRW has completed, and the EA has begun the first stage of consultation on the next cycle of RBMPs, which will cover the period from 2027-2033.[181] While the regulations implementing the WFD will not stop applying after 2027, they do not provide for a scenario beyond 2027. The UK and Welsh governments will need to decide what, if anything, should follow this objective after 2027.

160. **The GES metric classifies each water body and is used for reporting on the water environment in England and Wales.** The WFD requires data on a range of different

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[175] The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017

[176] Urban Waste Water Treatment (England and Wales) Regulations 1994; Bathing Water Regulations 2013

[177] The EA manage the 7 river basin districts in England. NRW manage the Western Wales river basin district. Natural Resources Wales and the EA jointly manage the Dee and Severn river basin districts.

[178] Around 5,000 water bodies are assessed in each year, this includes rivers, canals, lakes, estuaries and coastal water bodies, but exclude Sites of Special Scientific Interest, ditches and surface water transfers. Information from: Surface water status - GOV.UK. In Cycle 2 of the WFD monitoring data and classification standards there was lower number of water bodies being assessed due to new WFD regulations guidance, water bodies below 10 km^2 are no longer required to be included in assessment, this resulted in 4,655 surface waters being assessed in 2019. EA Engagement with the Commission

[179] Although there has been no specific assessment of whether the target of 75% of water bodies is technically feasible, this target was derived by adding up number of water bodies that had been set an objective of Good Ecological Status or Good Ecological Potential through individual water body status objectives, which are takes into account where benefits of achieving good outweigh the costs as well as technical feasibility. Plan for Water: our integrated plan for delivering clean and plentiful water - GOV.UK

[180] EA, B3: State of the water environment, 2019; Natural Resource Wales, Natural Resources Wales / River basin management plans 2015-2021, 2021

[181] Working Together Consultation - Natural Resources Wales Citizen Space - Citizen Space; Working Together 2024 - Environment Agency - Citizen Space

water quality ‘elements’ to produce a water body classification. This includes physical, chemical, and biological elements. It has a ‘one out, all out' rule in which a water body can only achieve ‘good’ if *all* elements are ‘good’.[182] Water bodies in protected sites are subject to different requirements and must go further than GES to reach ‘favourable condition.’[183] Groundwater and artificial or heavily modified water bodies are subject to different objectives.[184]

Current issues

161. The Commission has heard 3 broad issues concerning the current approach to management of the water environment:

- Governance challenges, with decisions affecting the water environment often appearing to be made in silos.
- An apparent lack of progress being made in achieving apex environmental objectives, including GES.
- Potential issues in relation to the approach to monitoring and classification of water bodies in England and Wales.

Governance

162. **RBMPs do not appear to be driving coordinated action on the water environment.** Local and regional governments, regulators, transport organisations, farmers and others all make decisions which affect the water environment, but these decisions appear to be largely made in silos and at different geographic scales.[185] While consultations are held during the development of RBMPs, the full range of actors and sectors which impact river basins are not brought together to agree actions or priorities.[186] This lack of alignment means that the full set of pressures in an area may not be considered when developing plans, which could lead to missed opportunities to use land and resources more effectively.

163. **RBMPs aim to improve the water environment and do not seek to address other issues in the water system, such as supply**.[187] In a recent case, relating to the Upper Costa Beck, the High Court found that the programme of measures set out in the Humber RBMP, to meet the environmental objectives in the WFD, should have

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[182] Department for Environment, Food & Rural Affairs, ‘Plan for Water: Annex A: Assessing the status of water bodies’, 2023
[183] Comission engagement with Natural England
[184] For artificial or heavily modified surface water bodies, objectives are set for ecological potential and chemical status. For groundwater, objectives are set for quantitative and chemical status. Environment Agency: ‘River basin management plans, updated 2022: current condition and environmental objectives’ (22 December 2022)
[185] Commission engagement with eNGOs
[186] Engagement with the Commission
[187] River flows form part of the assessment of the status of surface water bodies, and groundwaters will need to be present in amounts that meet quantitative criteria, but the use of water resources for water supply is not part of the framework. Parliamentary Office of Science and Technology, ‘River Basin Management Plans’, December 2008: Number 320

been set at an individual water body level rather than at a river basin district level. The Secretary of State for Defra and the EA have appealed this decision and judgement is awaited.[188] Depending on the outcome of the appeal, this could impact current RBMPs more widely and how they must be produced in the future.

164. **Cost-benefit assessments of individual actions for the water environment appear to be limited and are not evaluated wholesale against the overall cost of achieving environmental objectives**. For example, the EA and NRW produce catchment economic appraisals to assess the costs and benefits of measures aimed at improving the water environment, which inform decisions on setting water body objectives and contribute to a national economic assessment published alongside RBMPs.[189] This assessment was last updated in 2022.[190] However the EA did not produce assessments of the costs and benefits of any WFD action in Price Review 2024, as this was not material to decisions that the EA was able to take under legislation, given the 2027 deadline. This amounts to around £8.4 billion of investment in Price Review 2024 on which cost benefit analysis was not undertaken by the EA. This equates to approximately 19% of the total enhancement expenditure of £44.5 billion at PR24.[191] In previous Price Reviews, the EA appeared to allow actions to support the achievement of GES to be deferred until later Price Reviews.

Progress towards the GES objective

165. **The apparent lack of progress towards the GES objective has been attributed to inadequate governance, monitoring, and funding**. For example, Blueprint for Water has argued that the ability of the WFD to drive improvements in water bodies in England is undermined by a lack of capacity and resources within key bodies such as the EA. They say that this is further exacerbated by a lack of clear governance, gaps in monitoring, and a failure to ensure that measures outlined in plans are specific, time-bound, and adequately funded.[192] The Office for Environmental Protection (OEP) similarly concluded that the failure to achieve the GES objective has been a result of poor implementation, rather than the legislation not being fit for purpose.[193]

166. **There are some strengths of the WFD which may be worth preserving in a future system.** While acknowledging the weaknesses in implementation outlined above, a range of environmental organisations including the OEP support the retention of the GES objective – arguing that it provides an ambitious, holistic, legal objective to drive

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[188] Courts and Tribunals Judiciary, 'Pickering Fishery Association (claimant/respondent) v Secretary of State for Environment, Food and Rural Affairs (defendant/appellant)', Court of Appeal Civil Division live hearings (16 January 2025)
[189] Appendix A: Catchment appraisal process - GOV.UK
[190] EA Engagement with the Commission, Investment requirements for England's river basin management plans - GOV.UK
[191] The total WFD enhancement driver allowance at PR24 is approximately £4.4 billion, with an additional £4 billion estimated being delivered through the WRMP. In total WFD expenditure is estimated at around £8.4 billion for PR24. Ofwat engagement with the Commission.
[192] Wildlife and Countryside Link - Blueprint for Water
[193] The OEP - OEP finds 'deeply concerning' issues with how the laws in place to protect England's rivers, lakes and coastal waters are being put into practice, 9 May 2025

action to improve overall water quality and prevent degradation. Blueprint for Water has remarked that the objective provides a well-established, rigorous framework to assess the health of the water environment, which underpins much other planning and decision making.[194]

167. **The UK government has acknowledged questions over the technical achievability of the GES objective in the context of changing pressures on the environment and changing water use**.[195] The EU member states which face similar water management challenges to England and Wales, such as high population density and intensive agricultural practices, also have a high proportion of water bodies failing to achieve GES.[196]

Monitoring and classification

168. **Some have said that that the GES classification and monitoring system masks progress and may distort investment in the water environment**.[197] The 'one out, all out' principle for the GES objective drives a high standard of improvement for the water environment but may mask its true condition, as a water body is classified according to its lowest scoring element. This principle can obscure nuance and trends, as progress on a range of elements may not be reflected in the classification. Current monitoring is used for regulatory purposes and therefore sampling may be biased to where known problems exist, meaning improvements elsewhere may be excluded.[198] Taken alone, this could discourage actions which would have significant benefits in water bodies and instead focus investment only where changes in classification could be secured. Stakeholders have also said that alternative sources of monitoring evidence which could support the existing system, such as citizen science, are not used to their full potential.[199]

169. **The exclusion of many small water bodies from the WFD means that a large proportion of water bodies in England and Wales are not regularly monitored**. Collectively, small water bodies make up over 70% of water bodies in England and Wales and are ecologically important, including for priority species and as spawning grounds.[200] A lack of monitoring could make it difficult to identify and address pressures on small water bodies, which stakeholders have highlighted risk being deprioritised given their individual contribution to meeting environmental objectives is limited.[201] Achieving broader environmental objectives, like the biodiversity targets in the

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[194] OEP, 'A Review of the implementation of the Water Framework Directive Regulations and River Basin Management Planning in England', 2024
[195] Government response to the Office for Environmental Protection report on the implementation of the Water Framework Directive Regulations and River Basin Management Planning in England
[196] European waters getting cleaner, but big challenges remain — European Environment Agency
[197] Engagement with the Commission through NGO roundtable
[198] Commission engagement with the EA. Classification results reported in RBMPs are used to assess compliance with RBMP individual water body status objectives. Monitoring is therefore targeted where there are known pressures or where action has been taken to address these.
[199] ResetForFreshwaters.pdf
[200] WCL_Small_Waters_Charter_2024.pdf
[201] Charter for Small Waters - Freshwater Habitats Trust

Environment Act 2021, may be challenging without action on smaller water bodies. The EA is working to address these monitoring gaps, such as through the Natural Capital Ecosystem Assessment monitoring programme.[202]

170. **Adding new monitoring elements into the existing framework can have a significant impact on classification results and obscure progress**. If elements cannot be technically improved, then this can lead to distorted monitoring of progress, and ineffective targeting of action. In 2019, the EA introduced a wider programme of chemical monitoring under the WFD to test for ubiquitous, persistent, bioaccumulative, and toxic substances (uPBTs). This resulted in all assessed water bodies across England failing to achieve Good Chemical Status.[203] In Wales, 455 of the 714 water bodies (63%) were not assessed for these substances, resulting in a default 'High' chemical status classification for Welsh water bodies.[204] There is currently no feasible technical solution to remove uPBTs from water bodies entirely and some will take a long time to naturally drop to required levels, if they can at all.[205] This highlights that while it is important to monitor additional threats, expanding the existing classification system may not provide greater clarity on the state of the water system and required actions to improve it.

[202] Natural Capital and Ecosystem Assessment Programme - GOV.UK
[203] State of the water environment indicator B3: supporting evidence - GOV.UK
[204] Afonydd Cymru - Water Framework Directive Chemical Assessments In Wales
[205] Coverage on water targets and River Basin Management Plans – Defra in the media

Strategic direction for the water industry

Background

171. **In England, there are various long-term objectives and targets that direct the actions of water and sewerage companies.** These include the WFD objectives, as described later in this chapter and two statutory Environment Act 2021 targets to reduce water demand and to reduce phosphorus pollution from wastewater.[206] Other targets have been articulated in various, non-statutory ways. These include the targets in the Storm Overflows Discharge Reduction Plan, the EA's National Framework for Water Resources, and those in additional strategic documents such as the previous government's EIP and Plan for Water.[207] While not always expressed or monitored as explicit targets for the sector, water companies' contributions are key to meeting wider government objectives such as the Environment Act 2021 biodiversity targets, Net Zero objectives, and economic growth.[208] The environmental requirements on the water industry are set out in more detail in *Chapter 5*.

172. **In Wales, the Well-being of Future Generations (Wales) Act 2015 (Well-being Act) and the Environment (Wales) Act 2016 frame the policy and legislation that water companies must comply with**.[209] This legislation embeds principles of long-term planning and sustainable management of resources which has led to the introduction of further targets for the water industry, such as storm overflow targets (through the Better River Quality Taskforce Action Plans) and phosphorus reduction targets for SAC rivers. Additionally, the Welsh Government published a White Paper in 2024 on environmental principles, governance and biodiversity targets.[210] This paper set out the legislative plans to establish statutory biodiversity targets for Wales. Water companies would be required to contribute towards these.

173. **It is the role of both UK and Welsh governments to set policy direction and, where appropriate, make trade-offs.**[211] While regulators in England and Wales operate independently of respective governments (further detailed in *Chapter 3*) ministers may publish strategy documents on the policy objectives of the water industry, and have powers to issue guidance and, in some cases, directions as to how regulators should exercise their functions.

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[206] The Environmental Targets (Water) (England) Regulations 2023
[207] Storm overflows discharge reduction plan - GOV.UK; Meeting our future water needs: a national framework for water resources - GOV.UK; Environmental Improvement Plan 2023 - GOV.UK; Plan for Water: our integrated plan for delivering clean and plentiful water - GOV.UK
[208] The Environmental Targets (Biodiversity) (England) Regulations 2023; February 2022: The government's strategic priorities for Ofwat - GOV.UK
[209] Well-being of Future Generations (Wales) Act 2015; Environment (Wales) Act 2016
[210] Environmental principles, governance and biodiversity targets: White Paper | GOV.WALES
[211] National Infrastructure Commission, 'Strategic Investment and Public Confidence' (October 2019)

Box 4: Strategic Policy Statement

A Strategic Policy Statement (SPS) is separately published by the Defra Secretary of State (SoS) and Welsh ministers, to guide Ofwat on strategic priorities and objectives to follow when carrying out its relevant functions in relation to the water industry. In practice it is published once per Price Review cycle (every 5 years) and previous UK governments have stated an expectation that this will happen no more frequently than once a Parliament.[212] Ofwat regulates water companies in England and in Wales and must comply with the SPSs published by both governments.

The Welsh government have set up a Price Review Forum (PRF) for Price Review 2024 to bring water companies, regulators and customer advocates together to inform water company business plans and delivery strategies. There is no direct equivalent in England.

Box 5: Devolution

The regulation of water companies operating wholly or mainly in England is ultimately a matter for the UK government. The regulation of water companies operating wholly or mainly in Wales is a matter for the Welsh government. The Secretary of State, Welsh ministers, Ofwat, the EA and NRW have statutory duties to cooperate, and framework documents and Memoranda of Understanding are in place to support this.

Water industry planning frameworks

174. **In addition to high-level targets, objectives and outcomes, water companies in England and Wales are subject to a variety of planning processes**. For environmental outcomes, the River Basin Management Plan (RMBP) objectives, which run to a 6-yearly cycle, are translated into a 'programme of measures' which inform the actions water companies need to take through the Water Industry National Environment Programme (WINEP). While the WINEP itself is not statutory, companies' actions included in the WINEP include interventions to meet WFD, RBMP and other statutory requirements, as well as certain non-statutory requirements. In Wales, this process occurs through the National Environment Programme (NEP). WINEP and NEP are delivered in 5-year cycles to coincide with the Price Review and build on monitoring and investigations from previous cycles. Natural Resources Wales's Core Management Plans for Special Areas of Conservation rivers are updated on an ad hoc basis.

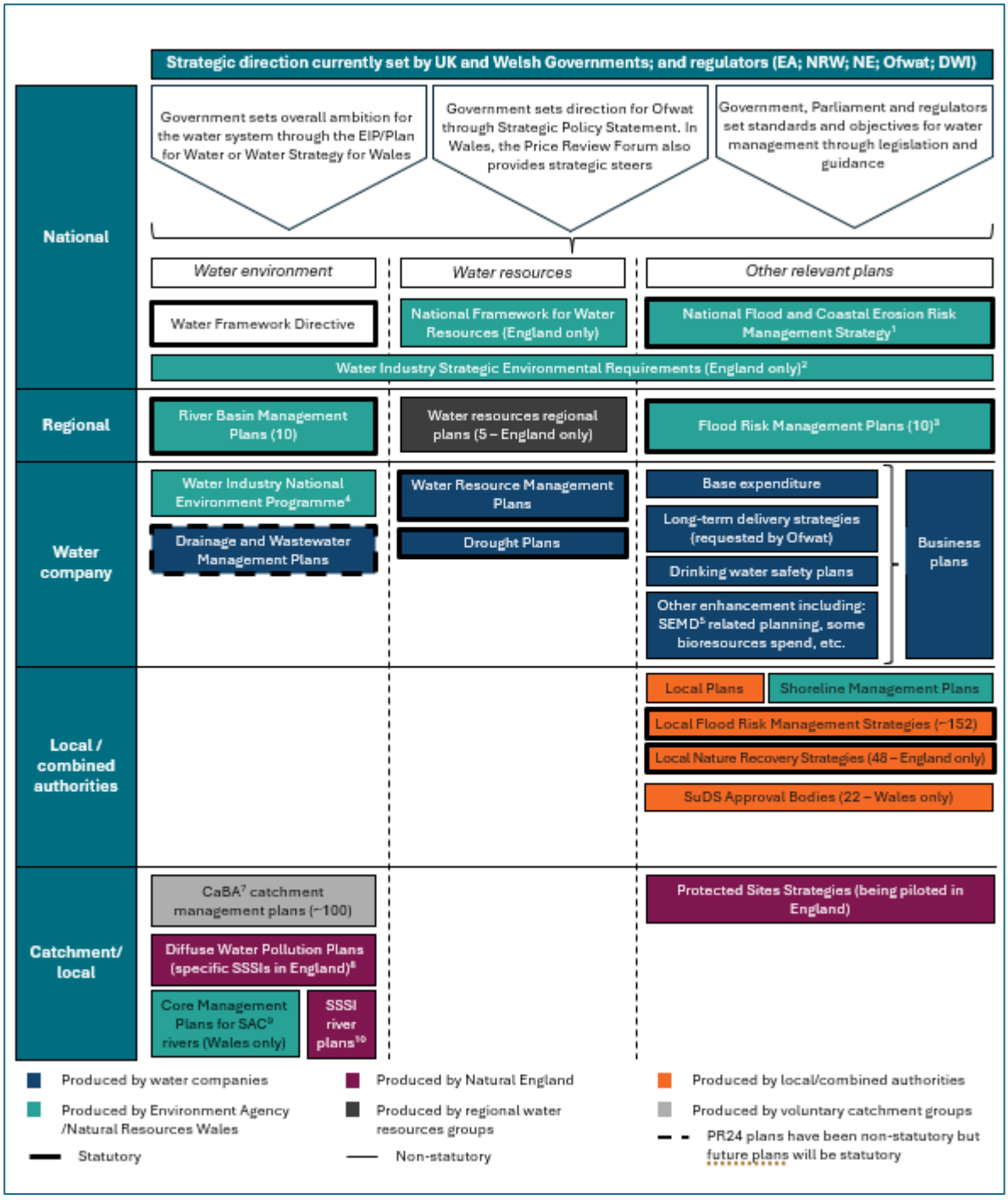
175. **Water companies also have direct statutory duties to produce certain plans.** This includes WRMPs, under which companies must set out the actions they have identified as necessary to improve drought resilience, adapt to climate change, and meet the targets set in the National Framework for Water Resources and the water demand

[212] Department for Business Innovation & Skills, 'Principles for Economic Regulation' (April 2011)

target set through the Environment Act 2021 (to reduce the use of public water supply in England by 20% by 2037-38 from the 2019-20 baseline).[213] Companies also produce statutory drought plans, linked to their WRMPs, setting out how they will maintain a secure water supply and protect the environment during dry weather and drought. For Price Review 2029, water and sewerage companies (WASCs) will also be required to produce Drainage and Wastewater Management Plans (DWMPs), under which companies must identify interventions to reduce pressures on their drainage and wastewater systems. Companies have produced DWMPs on a voluntary basis for Price Review 2024. WRMPs and DWMPs are run on a 5-yearly basis, to coincide with the Price Review, but have 25-year timescales (divided into 5-yearly delivery periods in line with Price Reviews).

[213] The Environmental Targets (Water) (England) Regulations 2023

Figure 12: **Overview of the key planning frameworks affecting the water industry**



Notes

(1) In Wales, this is produced by the Welsh Government rather than NRW[214]
(2) Produced jointly be the EA and Natural England (NE)
(3) Future requirements to produce these plans were revoked through the Retained EU Law Act 2023. The current plans cover the period to 2027.
(4) Known as the National Environment Programme in Wales
(5) Security and Emergency Measures Direction 2024, discussed in Chapter 5

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[214] 40996 National Strategy for Flood and Coastal Erosion Risk Management in Wales (English); Welsh Government engagement with the Commission

(6) Greater Manchester Combined Authority
(7) Catchment Based Approach
(8) Sites of Special Scientific Interest (SSSI); plans are produced jointly by EA and NE
(9) Special Areas of Conservation
(10) SSSI river and lake restoration plans

Source: Modified from various sources[215]

176. **Figure 12 provides an overview of some of the key planning frameworks relevant to the water industry in England and Wales.** It sets out some of the key strategic plans across the water environment, water resources, and other water-related outcomes (such as flood risk and land use planning). It is not exhaustive. Figure 12 shows which organisation is primarily responsible for producing each plan, although many of the plans are not just the work of one organisation.

177. **Regulators are responsible for scrutinising these long-term plans at various points throughout the planning processes, including some scrutiny of costs**. The EA and NRW sign off on whether companies' long-term plans demonstrate credible interventions to meet the required outcomes, with some limited consideration of economic evidence.[216] NE and the DWI also have a role in providing guidance for and being consulted on these plans for WRMPs. For water companies in England, the WINEP includes 'statutory plus' obligations, which are obligations set out in primary or secondary legislation, which can include an assessment of benefits and, in some cases, an additional step of affordability testing. Where an action is considered disproportionately expensive, alternative objectives or timescales can be set.[217] Where an action is included as 'statutory' in WINEP, water companies must complete these actions to fulfil statutory obligations and, while costs and benefits should be understood, these are not material for the EA in assessing what actions are necessary. The EA cannot agree an alternative timescale for meeting statutory requirements where the timeline is expressly prescribed.[218] Regulators' tools to scrutinise and enforce against non-delivery of the plans are described in *Chapters 3* and *5*.

178. **However, the ultimate decision on funding the plans is determined by Ofwat's scrutiny of companies' business plans through the 5-yearly Price Reviews**. Not everything included in companies' 5-year business plans is covered by one of the long-term plans or programmes described. For example, enhancement expenditure such as SEMD related planning (described in *Chapter 5*), Net Zero spend in England, and some bioresources spend are not included in any specific plans, as well as much of companies' base expenditure (described in *Chapters 4* and *5*). [219] For the first time at Price Review 2024, Ofwat has also required companies to set out their 5-year business

[215] Water industry strategic environmental requirements (WISER) - GOV.UK ; PR24-and-beyond-Final-guidance-on-long-term-delivery-strategies_Pr24.pdf; Governance of flood risk management | Local Government Association
[216] Commission engagement with the EA
[217] Water industry strategic environmental requirements (WISER) - GOV.UK
[218] Commission engagement with the EA
[219] Water UK 'Water_UK_DWMP_Framework_Report_Main_280519.pdf'; Defra, 'Water industry national environment programme (WINEP) methodology - GOV.UK'

plans in the context of a 25-year long-term delivery strategy, although these plans are non-statutory.[220]

Current issues

179. The Commission has heard 3 broad issues concerning the current approach to strategic planning for the water industry:

- Long-term targets and objectives for the water industry do not appear to clearly map onto the business planning and Price Review process, with limited guidance on the hierarchy of priorities and trade-offs.
- Water industry planning frameworks are resource-intensive, complex and do not always appear to add up to a coherent whole.
- The current 5-year Price Control planning cycle appears to constrain evolving and emerging policy requirements and pose challenges for the sequencing of improvements to meet long-term plans.

Targets and objectives

180. **Stakeholders have raised that there is no long-term government water industry strategy in England or Wales with clear guidance on the hierarchy of priorities and trade-offs**.[221] The SPS sets out the UK and Welsh governments' expectations of Ofwat, but not to water companies directly, nor to other water regulators. The SPS is also refreshed every 5-year Price Review period, limiting its ability to provide long-term strategic direction. This can be particularly challenging to long-term planning for complex issues such as Net Zero, increasing resilience to climate change, and adapting to population growth. Both governments' SPS documents have been subject to scrutiny for not providing detailed direction and guidance on trade-offs and specific, measurable, achievable, relevant and time-bound objectives. In England, stakeholders have stated that they struggle to assess how regulators have delivered against the stated priorities.[222] In Wales, some stakeholders have raised concerns in the past about the effectiveness of the SPS to Ofwat, highlighting that the previous SPS for Price Review 2019 did not provide sufficient detailed direction on the Welsh Government's desired aims, which allowed for greater interpretation over the desired outcomes.[223] Some have also criticised the current SPS in England for focusing on short-term political objectives at the expense of long-term solutions.[224] It has also been challenged for not always being consistent with the planning cycles in the regulatory framework. For example, storm overflows now represent the largest single investment programme for the industry but only recently emerged as a priority.[225]

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[220] Price Review 2024 and beyond: Final guidance on long-term delivery strategies
[221] Strategic Investment and Public Confidence
[222] Summary of responses and government response - GOV.UK
[223] Afallen Report: Welsh Government Price Review 2019 Review Project, provided to the Commission
[224] Regulator and Industry Representatives Engagement with the Commission
[225] Strategic policy statement for Ofwat - GOV.UK

181. **We have heard that there is a need for clarity on maintaining affordable bills and a deliverable and financeable plan, while also delivering investment to meet current environmental standards**. While this is recognised in the Welsh Government's latest SPS to Ofwat and more broadly through the Well-being Act, previous steers from the Welsh Government have emphasised minimising bill increases which has subsequently reduced the scope for investment on environmental outcomes.[226] In England, while the Water Industry Strategic Environmental Requirements (WISER) published by the EA and NE lists exhaustively all the relevant legislative requirements for the water industry, it does not provide an overarching strategic or prioritised guiding vision.

182. **The arrangement of having Ofwat implement a regulatory approach across both England and Wales can lead to circumstances where differences between policy positions appear not to be accurately reflected, even where these are clearly expressed**. For example, the Welsh government has raised concerns with Ofwat's regulatory approach for managing storm overflows, where Ofwat has maintained use of a frequency metric – which is more aligned to the policy approach taken by the UK government – while the Welsh government's position is to focus on overflows that cause environmental harm as opposed to frequency of spills.[227] This also reflects feedback from Welsh stakeholders on Price Review 2019, where some felt that regulatory decisions were more influenced by the UK government's steer.[228] Additionally, Ofwat's comparative assessment approach and focus on encouraging competition does not always align with the Welsh government's collaborative ways of working embedded within the Well-being Act.[229]

183. **Where there are clear outcomes, supported by a coherent delivery programme of targets, these appear to have successfully secured some water industry investment and better long-term improvements**. For example, the regulators have indicated that WRMPs have played a significant and successful role in improving the provision of sustainable water supplies in England and Wales since they became statutory.

184. **However, stakeholders have raised that time-bound targets which are too narrow or fast can risk unintended consequences.** For example, the ambitious targets in the Storm Overflows Discharge Reduction Plan in England, require rapid action now to enable companies to stay on track with delivery of the 2035, 2045 and 2050 targets. This appears to have incentivised companies to opt for 'grey' infrastructure solutions.[230] Water UK's National Storm Overflows Plan for England states that 71% of the improvements contained in the plan will be "traditional-engineered" solutions, with only 25% offering some kind of nature-based element and potential additional

[226] Welsh Government engagement with the Commission
[227] Welsh Government engagement with the Commission
[228] Afallen Report. 'Welsh Government Price Review 2019 Review Project, shared with the commission'
[229] Welsh Government engagement with the Commission
[230] Engagement with the Commission

benefits.[231] The narrow focus of the targets on storm overflows also means not all of this investment will contribute to meeting WFD objectives for water quality and Good Ecological Status.[232]

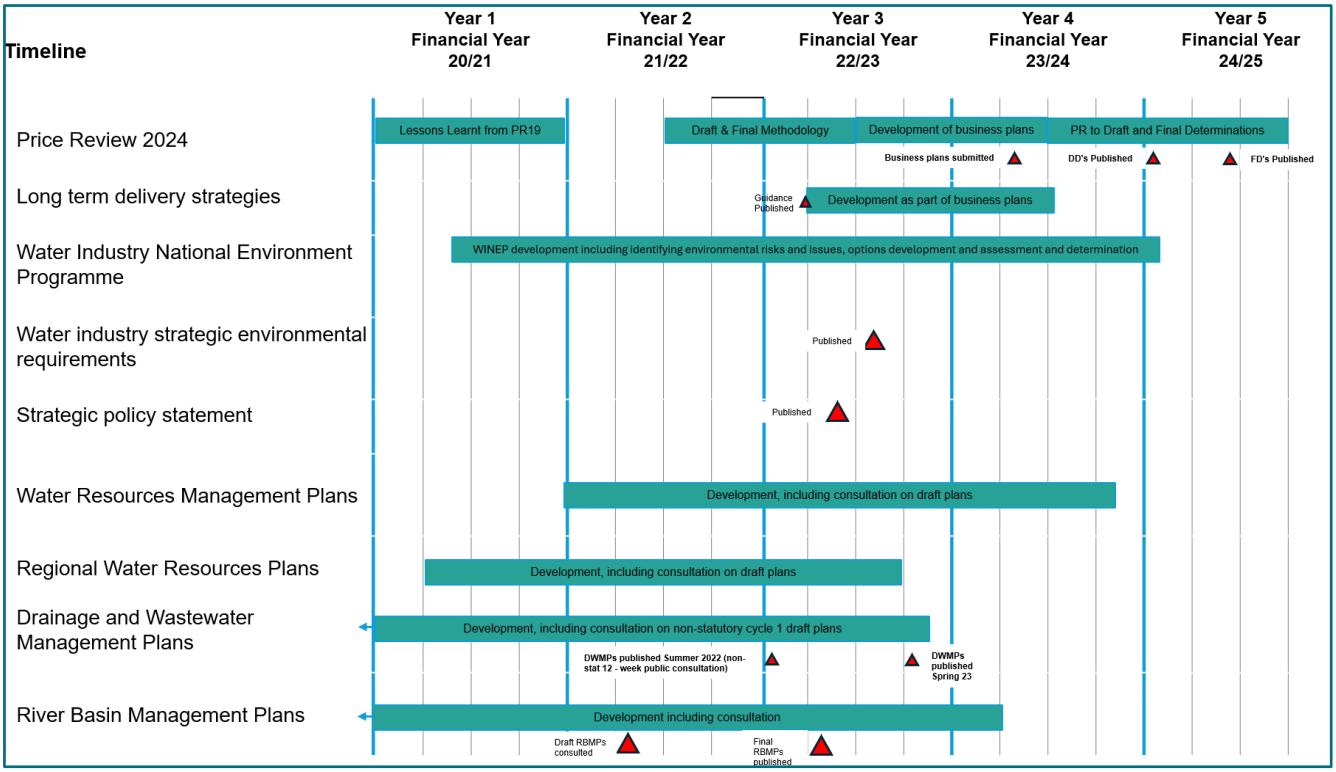
Water industry planning frameworks and regulator scrutiny

185. **Water industry planning appears to have become more resource intensive for all, and there is a need to consider how better to achieve outcomes**. The fragmented nature of the planning landscape has created confusion for companies, regulators and other stakeholders involved in planning, such as eNGOs and consumer groups. Stakeholders have reported that there is no common language, scenarios or underlying assumptions across plans, sometimes leading to incoherent outputs.[233] In addition to the burden this creates for water companies and regulators, consumer groups and eNGOs have reported the large resource burden of feeding into the multiple engagement points across distinct plans, meaning they struggle to engage meaningfully at each point and therefore across all elements which may affect them.[234] These issues have been compounded over time, as new planning frameworks have been added. For example, within the current Price Review 2019 cycle (2020-25), water companies and regulators have been required to develop 7 distinct planning elements (Figure 13).

186. **Ofwat has also reported that they are frequently reviewing plans within very tight timescales.** For example, significant elements of business plans sit outside WINEP, NEP and WRMPs (which account for around 70% of the proposed total spend at Price Review 2024 final determinations).[235] The Commission notes that the lack of pre-scrutiny of these additional elements may leave Ofwat with only a few months to scrutinise tens of billions of pounds in investment before making its draft determinations.[236]

[231] WEB_Water UK National Storm Overflows Plan for England_0.pdf
[232] Commission engagement with the EA
[233] Engagement with the Commission (covering companies, eNGOs, trade bodies and consumer groups)
[234] Engagement with the Commission (covering companies, eNGOs, trade bodies and consumer groups)
[235] Ofwat Final Determinations in the 2024 Price Review
[236] Engagement with the Commission

Figure 13: Planning elements within Price Review 2019



Source: Ofwat[237]

187. **Ofwat, the EA, NRW and the DWI have been required to scrutinise ever larger levels of proposed investment but it is not clear that processes were intended to handle such a large level of spending**. Price Review 2024 will involve a significant increase in infrastructure delivery by water companies – environment enhancement allowances for Price Review 2024 total £23.9 billion, compared to around £5.7 billion at Price Review 2019.[238] The EA and NRW's roles are designed primarily to work with companies to identify actions needed to meet statutory requirements and targets - they do not appear to consistently consider value for money or the deliverability of projects (described further in *Chapter 3*).[239] Ofwat scrutinises costs once the strategic planning process has already identified necessary actions, focusing on achieving efficient costs of delivery. A number of stakeholders have indicated this system does not work effectively, as the costs and benefits of the intervention are not fully considered in parallel.[240]

188. **In Wales, NRW has raised concerns that, for Price Review 2024, water companies in Wales may be unable to fully fund statutory obligations required for legal compliance – as identified in the NEP – while maintaining affordable bills for**

[237] Commission engagement with Ofwat
[238] Ofwat analysis presented to the Commission. Only high-level figures are available for early price controls. For Price Review 2014 Ofwat did not provide separate WINEP allowances as they provided overall total expenditure allowances. For this period company business plan requests were used to estimate the scale of the WINEP. Figures have been indexed by CPIH.
[239] Commission engagement with the EA and NRW
[240] Commission engagement with NGOs, industry representatives and regulators

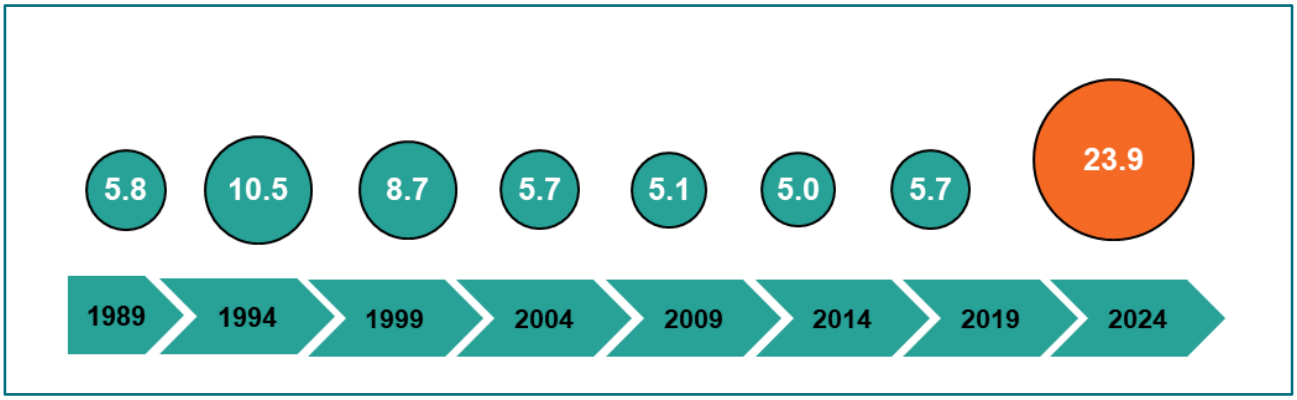
customers.[241] This appears to be challenging to resolve because questions of affordability and the urgency of the environmental improvement sit with different regulators.

189. **Discussion of the challenges flowing from overlapping regulatory responsibilities are set out in more detail in *Chapter 3***.

Challenges with the 5-year cycle and lack of alignment with long-term plans

190. **The current planning frameworks appear to have led to water companies back-loading delivery.** For example, regulators have pointed to issues with distant targets such as the WFD GES objective and the objectives of WRMPs, where targets can be too remote and not require gradual progress.[242] At the beginning of Price Review 2019 there were 40 outstanding WINEP WFD schemes from Price Review 2014.[243]

Figure 14: Estimated historical environmental expenditure allowances (WINEP/NEP), England & Wales, 1989 to 2024, £billion, 2022-23 prices



Source: Ofwat[244]

191. **The 5-yearly Price Review cycle is not always aligned with necessary elements for longer-term planning.** Statutory long-term planning frameworks such as DWMPs and WRMPs are refreshed every 5 years, in line with the Price Review process. However, others are misaligned, such as the 6-yearly RBMP process.

192. **Stakeholders have criticised misalignment between the 5-yearly cycle and changing legislation or emerging priorities within the 5-year period**. New planning requirements or emerging political priorities that do not align with the Price Review cycles can lead to wasted effort and poor co-ordination of outcomes or delayed delivery. For example, the Storm Overflow Discharge Reduction Plan in England and the Better River Quality Taskforce Action Plans in Wales were introduced part way through the Price Review 2024 planning process. As part of the optioneering process

[241] Wales-PR24-Forum-Strategic-Steer-to-Dwr-Cymru-Welsh-Water-English.pdf
[242] Commission engagement with Ofwat and the EA
[243] Commission engagement with the EA
[244] Ofwat analysis provided directly to the Independent Commission. Only high-level figures are available for early price controls. For Price Review 2014 Ofwat did not provide separate WINEP allowances as they provided overall total expenditure allowances. For this period company business plan requests were used to estimate the scale of the WINEP. Figures have been indexed by CPIH.

for Price Review 2024 WINEP water companies presented multiple options and explored the availability of best value approaches. Of the 2,700 WINEP improvement actions, where the EA consider more than one option could have been supported, 78% were least cost with no best value alternative. Least cost options tend to be the more certain, grey solution, with higher carbon cost and lower wider benefits.[245]

193. **We have heard from the EA that the policy requirements to meet new legislation resulted in reduced optioneering times which limited the opportunity to develop partnership and catchment-based approaches**.

194. **Furthermore, some significant programmes for Price Review 2024 appear to lack a 'value for money' case.** For example, the previous UK government published an updated Impact Assessment alongside its Storm Overflows Discharge Reduction Plan in 2023. It set out the Benefit Cost Ratio of delivering the Storm Overflows Discharge Reduction Plan at 0.11 in an optimistic scenario, meaning that for every £1 spent, roughly only 11 pence in value is gained. While the previous UK government accepted that there is a large number of non-monetised benefits associated with storm overflow improvements, they concluded that it is not possible to say with certainty whether the overall policy would have a Benefit Cost Ratio above 1 if all identified benefits could be fully monetised. The government also noted the limits of assessing benefits at a national level – as more benefits may be identified when conducting a detailed Cost Benefit Analysis at a scheme or catchment level.[246] However, given the scale of the Storm Overflow programme at approximately £60 billion, this highlights an example where overriding government objectives of reducing spills may have prevailed over an economic assessment of costs versus benefits for customers.[247] We also note that sewage discharges only cause water quality failures at 7% of water bodies compared to more significant sources of pollution such as farming which accounts for 40% of failures, and urban and transport pollution which causes 18% of failures to achieve Good Ecological Status in England (based on 2022 data).[248]

Areas where the Commission is seeking views

195. The Commission is seeking views on stakeholder proposals across the following 5 areas:

- Whether there should be an integrated water management framework to improve the management of the water system across sectors and outcomes.

- Whether the geographical scales for planning and delivery in the water system are appropriate and provide sufficient accountability, including through democratic structures.

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[245] Commission engagement with the EA
[246] Storm Overflow Discharge Reduction Plan Impact Assessment (September 2023) - Impact Assessment template. Benefit Cost Ratio calculated for monetised costs and benefits in 2020 present value terms.
[247] Best estimate of direct monetised costs from Defra 2023 Impact Assessment. Adjusted to 2024 prices.
[248] Environment Agency publishes Event Duration Monitoring data for 2022 - GOV.UK

- The need for further strategic direction to help overcome silos in water planning and funding to improve implementation.

- Whether the current environmental objectives and planning frameworks reflect the right outcomes and incentivise the action needed to deliver them.

- Whether the current water industry planning frameworks are effectively producing the desired outcomes, or whether changes could enable better planning in aid of delivery, at both a water industry, regulator and government level.

196. We encourage readers to respond to our questions on these topics via Defra's online consultation tool, Citizen Space. The questions on Citizen Space are also included at Annex A: Call for Evidence questions.

Integrating water management

197. **The Commission is seeking views on whether improvements are needed to integrate water management – a 'system planner' role has been suggested as a way of overcoming siloed decision-making in the water system**. This could act as a central planning authority at a national, regional and/or catchment level, deciding on the best actions for the water system. They could look solely at the water industry or wider and integrate action across the water system when making long-term plans. For example, at a national level, there has been discussion on the merits and drawbacks of a 'national water grid' which could act to ensure companies build interconnectors for strategic water transfers between regions and to oversee operation of transfers to ensure fair allocation of water in times of drought.[249]

Box 6: System planning – the National Energy System Operator (NESO)

The National Energy System Operator (NESO) is responsible for system planning in the energy sector. The NESO was formed in October 2024 as the Independent System Operator and Planner under the Energy Act 2023. Its primary duties are to promote Net Zero, efficient and economic systems for electricity and gas and to ensure security of supply for current and future users. To do this, NESO undertakes strategic planning (for example, planning connections to the grid), operates the electricity network (by ensuring that energy demand and supply align), and provides advice and analysis.[250] Ofgem announced in 2023 that they plan to introduce Regional Energy Strategic Planners (RESPs) to ensure there is appropriate accountability and effective coordination for strategic planning at a sub-national level.[251]

198. **A more radical version of this systems planning role could pool together existing funding streams at a local or regional level when deciding where interventions**

[249] Institute for Civil Engineers, 'What are water transfers and interconnections?', 2015; United Utilities, Severn Trent and Thames Water, 'What role for System Operators in the water sector?', 2017; UK Parliament Hansard, 'Water: National Grid', 2012
[250] What we do | National Energy System Operator
[251] Future of local energy institutions and governance

are needed. This approach could allow for more effective consideration of costs and benefits, outcome delivery, and efficient allocation of funding, as well as offering a more democratic and collaborative approach to water management. This approach is not unprecedented internationally: for example, regional water authorities in the Netherlands are responsible for regional flood protection, water quantity, water quality and wastewater treatment, all of which they largely self-finance using revenues from the regional water authority taxes.[252] This option would be a significant departure from the existing model whereby interventions are largely funded and decided on a company-by-company basis. Pooling funding may require an alternative approach to regulatory oversight, long-term planning and price control, and potentially to compliance and enforcement across sectors.

199. **There are alternative options to better bring together stakeholders within catchments to deliver more local decision making and inform better national decision-making**. We are seeking views on how to balance the democratic benefits of very local planning with the need to efficiently fund large programmes of work across a large area. Improved governance at a very local level could allow a greater range of groups' involvement in decision-making and ensure that solutions are tailored to local needs. This may be achieved through expanding existing initiatives, such as the catchment-based approach, including increasing the funding and accountability of local groups. However, given the likely constraints around the possibility of increasing taxes to fund local groups, this could have implications for the range of actions that billpayers would be expected to fund – for example, nature restoration actions currently paid for using public funding, or not funded at all, may in this scenario need to be funded through water bills.

200. **Operating at a larger spatial scale, such as at a regional level, could allow for economies of scale and more effective investment outcomes**. We are interested in whether there needs to be some decision-making or coordination role at a national and/or regional level to ensure that plans are specific enough to be useful at a local level and that they collectively add up to support national targets.

201. **The Commission is also seeking views on whether decision-making on water should be aligned with hydrological or administrative boundaries**. Hydrological features, like rivers and streams, within a wider catchment, do not follow local or regional government boundaries. Planning under the WFD currently aligns with hydrological boundaries, such as river basins. This reflects the natural flow of water bodies and their environment but means that there is no existing democratic structure aligned to these plans to support and enforce their implementation. Administrative structures have democratic accountability and are linked into broader planning structures (such as town and country planning).

[252] The-Dutch-water-authority-model.pdf

Clearer strategic direction

202. **Stakeholders have suggested that there is a need for clearer long-term strategic direction on the overall management of water in England and Wales, and within the water industry regulatory framework**. It is argued that this would give guidance on priorities and trade-offs and ensure outcomes are clear and reflect those priorities. This could: provide greater stability for investors; provide certainty for supply chain planning and improve delivery; allow water companies and regulators to anticipate and mitigate emerging risks; provide clearer expectations for governments, regulators and the public to hold water companies to account, and; encourage water companies and regulators to take a holistic approach to fixing problems at the source and mitigate end-system issues. The Commission is seeking views over to what extent such overarching guidance should be a responsibility for government versus the regulators or other levels of governance.

203. **The Commission is seeking views on how well the Price Review Forum has worked to guide the water industry in Wales, and whether there should be greater adoption of collaborative processes in Wales and, or in England**. Examples of other precedents include the negotiated approach taken in Scotland, which establishes a collaborative framework that emphasises customer engagement to ensure investment priorities reflect customers' expectations of the sector.[253] Collaborative approaches may potentially lend themselves particularly well to Wales where there is already an established emphasis on collaborative working between government and water companies, and fewer companies to work with. However, the Commission is also interested in views on whether such approaches have potential for greater use in England, for example, in combination with greater sub-national governance (described previously).

Targets and objectives

204. **The Commission welcomes views on what objectives should be pursued in any future vision for the water environment.** There is no right answer to this question, but there is a need to identify what the priorities for the water system should be and decide how trade-offs should be made between these priorities. The Commission is considering if and how the framework of objectives for the management of the water environment, currently set through the WFD and RBMPs as described in this chapter, should be broadened. This could include extending the range of environmental factors it considers, such as through the inclusion of additional pollutants or nature restoration. Beyond this, the Commission is considering suggestions to include public health, recreation, and other outcomes which society increasingly seeks from our water bodies in the targets or objectives for the water system. There is likely to be a trade-off between ensuring that the breadth of policy objectives included in the framework includes and prioritises what people care about, while ensuring the framework is

[253] Independent Customer Group - Scottish Water

affordable, provides value for money, and is straightforward to navigate and implement.

205. **The Commission is seeking views on whether and how the WFD should be reformed.** This includes what objectives should be pursued for the management of water, how these should be monitored, and how the costs and benefits of any targets could be balanced against each other.

Water industry planning frameworks

206. **The Commission is seeking views on whether the current water industry planning frameworks are effectively producing the desired outcomes, or whether changes could enable better planning in aid of delivery – at the water industry, regulator and government level**. The Commission has heard that water industry business planning is currently overly complex, with overlapping plans which do not always appear to work well together or with wider stakeholder planning and delivery. It has been said that the large number of plans do not add up together to a meaningful whole, which can make it harder to navigate trade-offs and ensure the right solution for the best value. Options could include reviewing the various constituent elements of the water industry planning cycle (for example, WINEP, DWMP, WRMP) and identifying opportunities for streamlining and integration of plans.[254] It could also involve reviewing government oversight and strategic direction setting for the Price Review process, including how government communicates its expectations to the water industry, as well as the management of cost-benefit trade-offs. There may also be a need to review the ways in which the regulators work together throughout the Price Review process to assess value for money and deliverability, as well as environmental outcomes, in addition to considering how engagement practices with local stakeholders regarding the delivery of infrastructure improvements can be improved.

207. **The Commission has heard divided views on whether companies' planning, particularly over the long-term, could be improved by adjusting the length of the Price Review cycles**.[255] Options could involve either a longer cycle, a shorter cycle or a rolling funding cycle with long-term guidelines and more frequent, smaller revisions where needed, such as to the WACC (described in *Chapter 4*). A longer-term cycle may not work due to unforeseen challenges. Conversely, some stakeholders have suggested short cycles can address risks like cyber threats.[256] Some have said that the length of the cycle is an unhelpful focus, and we are also interested in hearing views on how the existing cycle could be improved – such as through greater flexibility for long-term projects or short-term, reactive necessities. For example, some major projects are already subject to longer-term price controls through mechanisms such as

[254] Stakeholder engagement with the commission (covering consumer groups, environmental non-government organisations, trade bodies, Ofwat, Natural England, Environment Agency, and industry representatives)
[255] Engagement with the Commission (covering regulators and water companies).
[256] Commission engagement with the DWI

Direct Procurement for Customers (DPC) and SIPR (see *Chapter 4*). Other options, such as introducing a systems planner, could bring water industry planning closer to wider planning for water management. As outlined previously, some stakeholders have suggested a system whereby local or regional-level plans, produced by an accountable governance body, would dictate investment priorities for water companies – alongside others such as farmers, developers, and local authorities – and guide long-term outcomes, with a reduced role for water industry regulators. Such options would need to consider how water companies would still plan in the long-term to maintain their assets.

208. **In particular, the Commission is also seeking views on whether there are any further ways that the water sector could contribute proactively to economic growth**. As outlined in Box 3 in this chapter, the Commission appreciates that the water industry has recently been accused of constraining growth in some parts of the UK. The Commission would like to receive evidence on whether the water sector has broadly limited or enabled growth, and options for water infrastructure and wider infrastructure development to support future growth.

Chapter 3: The regulators

209. **This chapter describes the regulators which oversee water industry activity and considers their effectiveness.** It discusses the regulators' overarching structural functions and how they interact. It does not cover the detail of water industry economic regulation nor specific water industry delivery outcomes, which are covered in *Chapters 4* and *5* respectively.

Background

210. **Regulation is a fundamental mechanism which government uses to achieve public policy objectives.** It seeks to ensure that private companies, organisations or individuals take account of externalities and public policy objectives that would not otherwise be reflected in their behaviour. In the case of the regulated utilities model, economic regulation is also in place to ensure both that monopoly power is not abused and to provide incentives for investment.

211. **Regulators are established to enforce laws, rules and regulations, helping to achieve public policy objectives**. They monitor the behaviour of individuals and organisations, supervise the use of resources, and seek to secure compliance with statutory provisions. They are often set up as independent or quasi-independent bodies to ensure that regulatory decisions are made based on evidence and sector-specific expertise, with limitations on political interference.

212. **To be effective, regulatory frameworks need to be clear, consistent and predictable.** They need to drive performance improvements of those they regulate while avoiding unintended consequences. They need to be trusted by the public and they need to ensure proportionate action is taken where there are failings.

The regulators of the water industry in England and Wales

213. **Ofwat (the Water Services Regulation Authority) is responsible for economic regulation of the water industry in England and Wales**. The provision of water and wastewater services is a natural regional monopoly and the scope for competition is constrained. Economic regulation is therefore required to protect consumers from the abuse of monopoly powers, such as high costs and poor service, and to incentivise the investment that the water system requires. Ofwat has statutory duties to protect the interests of consumers, ensure that water companies properly carry out their statutory functions, and that they are financed to do so, and to secure the long-term resilience of water companies.[257] Ofwat primarily achieves this through its Price Review process to set price controls for the sector – that is, the setting of companies' levels of spending via customer bills. The Price Review process and how Ofwat scrutinises companies' proposed spending plans to ensure these are cost efficient are covered in detail in *Chapter 4*. Ofwat also performs functions related to water company

[257] Ofwat, 'Our duties - Ofwat'

performance and oversight, including ensuring water companies deliver environmental improvements efficiently, ensuring companies are adequately maintaining their assets, and reviewing operational performance.

214. **The Environment Agency (EA) and Natural Resources Wales (NRW) are the principal environmental regulators of the water industry in England and Wales respectively**. The EA has a statutory aim to protect or enhance the environment, contributing towards the objective of achieving sustainable development.[258] NRW's core purpose is to sustainably manage natural resources.[259] Both regulators, as well as UK and Welsh ministers, have a duty to secure compliance with environmental objectives set out in River Basin Management Plans (as covered in *Chapter 2*).

215. **In addition, Natural England has a statutory purpose to ensure that the natural environment in England overall is conserved, enhanced, and managed for the benefit of present and future generations**.[260] The equivalent function in Wales is the responsibility of NRW.

216. **The Drinking Water Inspectorate (DWI) has statutory duties to ensure the quality and sufficiency of public drinking water supplies**. Inspectors (including the Chief Inspector of Drinking Water) are appointed to act on behalf of the Secretary of State (and Welsh ministers) under section 86 of the Water Industry Act 1991 (WIA91) to assess and enforce drinking water quality so as to provide assurance that safe and acceptable drinking water is supplied to those receiving a public water supply.[261] The DWI is the collective name for inspectors and the Chief Inspector.

217. **Requirements on water companies are primarily implemented and enforced by these regulators through permits, licences and standards**. Regulators monitor compliance (including by collecting data and working with companies to manage issues and risks), oversee overall performance, and have a range of enforcement tools which they can deploy where companies breach requirements.

218. The environmental regulators and the DWI also work with the water industry to plan strategically how they will meet regulatory requirements, as set out in *Chapter 2*.

219. Further specifics on how the regulators work in practice are set out in *Chapter 5*, which describes water industry delivery outcomes.

The role of government and accountability to Parliament

220. **As outlined in *Chapter 2*, the UK and Welsh governments are responsible for setting overall strategic direction for the sector and having sponsorship or oversight of the regulators**. The regulators also have direct or indirect accountability to the UK Parliament and the Senedd. Ofwat is a non-ministerial department, working

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[258] Environment Agency, 'Environment_Agency_Framework_Document.pdf'
[259] Natural Resource Wales, 'Natural Resources Wales / Our roles and responsibilities'
[260] Natural England, 'About us - Natural England - GOV.UK'
[261] Drinking Water Inspectorate, 'Enforcement Policy – Drinking Water Quality Regulation - Drinking Water Inspectorate'

independently of government in line with the principle of independent economic regulation. The UK and Welsh governments have limited powers of direction over Ofwat but have a sponsorship function. Ofwat is directly accountable to the UK Parliament and the Senedd, including for the money it spends. The EA is a non-departmental public body sponsored by the Department for Environment, Food and Rural Affairs (Defra) and Natural Resources Wales (NRW) is a Welsh Government Sponsored Body. Both operate at arm's length of government, but ministers have powers of direction over how they exercise their functions. They are accountable to Parliament and the Senedd via Defra and Welsh ministers. The Drinking Water Inspectorate (DWI) operates as a separate business unit within Defra and carries out statutory functions delegated to the DWI (inspectors and the Chief Inspector) by the Secretary of State or Welsh ministers. Defra and Welsh ministers also have regulatory duties and powers, including in relation to enforcement, assigned to them through WIA91.

Other bodies

221. A series of other bodies play important roles in the overall regulatory framework. The extent of their powers and duties varies. This includes:

- **Consumer Council for Water (CCW)** – the independent voice for water consumers in England and Wales. They provide free help and advice to customers, including support for customers who have not been able to resolve a complaint against their water company.[262]

- **Competition and Markets Authority (CMA)** – the principal competition and consumer protection authority in the UK.[263] Water companies may ask Ofwat to refer Price Review decisions for reconsideration by the CMA (see *Chapter 4* for more info).

- **The Office for Environmental Protection (OEP)** – which holds the UK government and public authorities in England to account in relation to environmental requirements.[264]

- **The Interim Environmental Protection Assessor for Wales (IEPAW)** – a non-statutory role created by the Welsh Government to advise Welsh ministers on the functioning of environmental law in Wales.[265]

222. **Figure 15 provides a visual representation of the regulatory framework as it now stands, and Annex C provides a summary of the role, duties and functions of the principal regulatory bodies**.

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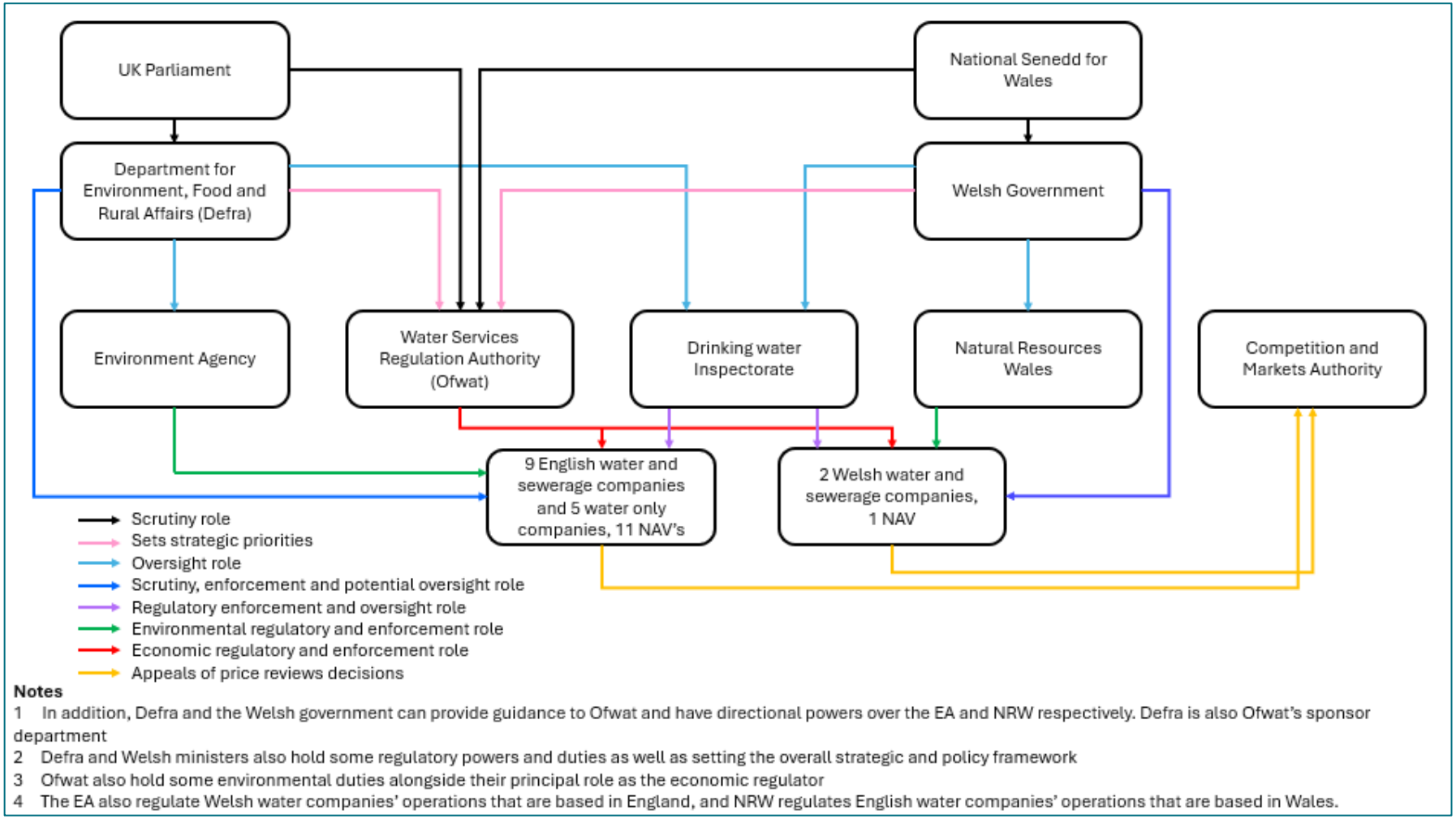
[262] Consumer Council for Water, 'About us - CCW'
[263] Institute for Government, 'Competition and Markets Authority | Institute for Government'
[264] Office for Environmental Protection, 'Office for Environmental Protection | Office for Environmental Protection'
[265] Interim Environmental Protection Assessor for Wales, 'Interim Environmental Protection Assessor for Wales | GOV.WALES'

Figure 15: Overview of the legislative and regulatory framework



Notes

1 In addition, Defra and the Welsh government can provide guidance to Ofwat and have directional powers over the EA and NRW respectively. Defra is also Ofwat's sponsor department

2 Defra and Welsh ministers also hold some regulatory powers and duties as well as setting the overall strategic and policy framework

3 Ofwat also hold some environmental duties alongside their principal role as the economic regulator

4 The EA also regulate Welsh water companies' operations that are based in England, and NRW regulates English water companies' operations that are based in Wales.

Source: Modified from diagram provided by the National Audit Office[266]

[266] National Audit Office, '[The economic regulation of the water sector]'

Current Issues

223. The Commission has heard 4 broad issues concerning the role of the regulators which oversee the water industry:

- Multiple regulators with possible differing and/or overlapping areas of focus
- Potential gaps in regulatory oversight
- Possible issues relating to capacity, capability and culture
- Questions around the effectiveness of government oversight of the regulatory system

Multiple regulators with different and/or overlapping areas of focus

224. **Stakeholders have voiced concerns about regulators having conflicting requirements, with, in certain cases, the same or similar matters being regulated twice, and differing standards being used to regulate activity**.[267] For example, Ofwat uses performance incentives to hold water companies to account for delivery outcomes. In recent years, these have been expanded to cover environmental and drinking water targets in addition to operational targets. For Price Review 2024, incentives cover issues including water supply interruptions, biodiversity, pollution incidents, bathing water quality and river water quality, among others.[268] There appears to be some overlap with the system of permit compliance that the EA and NRW implement which also require these outcomes to be secured.

225. **Dual requirements may create confusion about which standards water companies need to meet.** In relation to storm overflow monitoring, for example, English water companies have a statutory duty to publish discharge data from storm overflows in near real time in a clear and publicly accessible format. Ofwat is the authorised enforcement authority for this duty under Section 18 of the Water Industry Act 1991.[269] However, several aspects of the duty appear to overlap with the EA's responsibilities. The EA has requirements relating to monitoring and reporting of discharges (including a duty to provide an annual data return of discharges) in its permits for storm overflows. The conditions attached to these permits include requirements relating to monitoring and reporting of discharges.

226. **Stakeholders have also highlighted issues regarding overlapping enforcement approaches of Ofwat and the EA**.[270] It appears that this has, in certain cases, led to concerns of 'double-jeopardy', with investigations and enforcement activity being brought by both regulators on very similar issues. For example, Ofwat, EA, NRW, and Defra and Welsh ministers all have enforcement duties and powers in relation to

[267] Engagement with the Commission
[268] Ofwat, 'PR24-final-determinations-Delivering-outcomes-for-customers-and-the-environment.pdf'
[269] Water Industry Act 1991 section 18
[270] Engagement with the Commission; Sky News, Three water companies facing £168m combined fine over sewage failings | Money News | Sky News; Ofwat, 'Thames, Yorkshire and Northumbrian Water face £168 million penalty following sewage investigation'

wastewater treatment requirements arising from the Water Industry Act 1991 and the Urban Waste Water Treatment Regulations (UWWTD) 1994.

227. **In recent years both the EA and Ofwat have launched investigations into water companies regarding compliance at waste water treatment works**.[271] Water companies in England have raised concerns around Ofwat's interpretation of environmental requirements differing from the EA's, a lack of clarity in the regulatory framework, and a lack of coordination between regulators.[272] While Ofwat's enforcement action extends to water companies in Wales, NRW has stated that they do not plan to initiate a similar investigation at present as they have worked with Dŵr Cymru and Hafren Dyfrdwy to rectify non-compliant sites at the earliest opportunity.[273]

228. **Overlapping remits also appear to make it harder for the public to get a 'single version of the truth' on water company performance, exacerbated by multiple regulatory reporting requirements**. Ofwat, the EA/NRW and the DWI all separately report on the annual performance of water companies against a series of metrics. The EA/NRW and the DWI report on environmental and drinking water quality metrics respectively. Ofwat report on a series of operational metrics, such as consumer and financial matters but they also report on environmental and drinking water metrics utilising data from the EA/NRW or the DWI. Regulators then categorise a water company overall differently, using either a star rating system or as 'leading/average/lagging'.

229. **We have also heard evidence of possible structural tensions within the regime when overseeing and assuring water companies' investment plans and managing trade-offs**. As outlined in *Chapter 2*, the environmental regulators and DWI do not appear to fully consider value for money when setting environmental and drinking water standards, managing water resources, and working with companies to plan the investments that they are required to deliver. For example, the EA requires companies to identify technically feasible Water Industry National Environment Programme (WINEP) options that meet the required environmental objectives and achieve the widest environmental benefits. The EA is not required to scrutinise the costs, nor does it have oversight of water company delivery capacity to assess whether delivery is likely to be technically feasible within the forthcoming asset management period (AMP).[274] It is ultimately the responsibility of Ofwat to decide on what or how much should be funded and to challenge schemes on the basis of cost efficiency. However, Ofwat is not always involved in the environmental optioneering process early enough to be able to do this effectively. We understand that the tight deadlines in Price Review 2024, with the previous government bringing in a range of new policies late in

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[271] Environment Agency, 'Environment Agency investigation into sewage treatment works – Creating a better place'; Ofwat, 'Our investigation: Why, what, how, when - Ofwat'

[272] Ofwat, 'Thames, Yorkshire and Northumbrian Water face £168 million penalty following sewage investigation' ; Engagement with the Commission; Sky News, Three water companies facing £168m combined fine over sewage failings | Money News | Sky News

[273] Natural Resource Wales, 'Annual environmental performance report for Dŵr Cymru Welsh Water 2023'; Natural Resources Wales, 'Annual environmental performance report for Hafren Dyfrdwy 2023'

[274] Engagement with the Commission

the day, led to companies rushing to develop solutions ahead of finalising business plans, which left little opportunity for Ofwat to be brought in to conduct early cost challenge.

230. **However, it appears that there has been strong coordination mechanisms more recently.** For example, the Regulators' Alliance for Progressing Infrastructure Development (RAPID) is a partnership for the regulators (Ofwat, the DWI and the EA – plus NRW in an advisory capacity) to provide advice and recommendations to each other on the development of strategic water resource solutions.[275] RAPID appears to have enabled better joint working to plan and finance long term water supply projects in England and Wales.[276] However, RAPID currently only covers water resources and not wastewater.

Gaps in oversight

231. **As well as areas of overlap, the Commission has also heard that there are some gaps in regulatory oversight.** Initial engagement with water companies and environmental NGOs, for instance, has highlighted gaps in oversight on infrastructure resilience and asset health.[277] For example, while Ofwat is required to ensure that companies are 'resilient', there is no single regulator looking at the overall state of the sector's assets. More detail on the impact of the regulatory regime on infrastructure can be found in *Chapter 5*.

232. **Some have noted that there may be a gap in regulators' powers to hold companies to account for delivery of infrastructure projects**. We understand that, currently, Ofwat primarily uses performance commitments to incentivise companies to deliver actions committed to in the Price Review but does not routinely conduct inspections or detailed tracking of individual projects to assure that a company has delivered what they said they would. (More detail on Ofwat's approach to the use of Performance Commitment Deliverables is set out in *Chapter 4*). The EA or NRW, meanwhile can take enforcement action if assets breach permit conditions, which are typically timed to coincide with the end of the Price Review delivery period. However, we have heard that there may be inadequate mechanisms for regulators to take action prior to the point of failure. We understand that, to help address this issue, the regulators have committed in Price Review 2024 to expand reporting mechanisms to oversee delivery, including through the establishment of a new Delivery Monitoring Framework.[278]

Capacity, capability and culture

233. **Stakeholders have commented that regulators have faced funding challenges which have impacted their regulatory oversight of the sector**.[279] The EA, in

[275] Ofwat, 'RAPID - Ofwat'
[276] House of Lords, 'House of Lords - The affluent and the effluent: cleaning up failures in water and sewage regulation - Industry and Regulators Committee'
[277] Engagement with the Commission
[278] Ofwat, 'PR24-final-determinations-Expenditure-allowances-V2.pdf'
[279] House of Commons 'Water Quality in Rivers'

particular, has faced significant funding cuts in previous years – with its environmental protection budget being more than halved between 2009-10 and 2019-20, from £170 million to £76 million (£260 million to £86 million in 2022-23 prices).[280]

234. **The UK government has taken steps to increase the EA's funding more recently, including through updating the charging scheme by which the EA recovers the cost of some of its activities from the water industry**. The 2024 update to the EA water quality charges has enabled the EA to commit to delivering 4,000 inspections by the end of 2024-25 and 10,000 by the end of 2025-26.[281] Further information of the EA's inspection and monitoring regime is set out in *Chapter 5*.

235. **For their water company enforcement activity the EA is largely funded through Grant in Aid (GiA)**. [282] The Commission has heard from stakeholders that funding cuts within the EA may have impacted their enforcement capabilities.[283] Through the Water (Special Measures) Act 2025, the UK government has expanded powers for the EA and NRW to cost recover for their enforcement work.

236. **The latest annual scrutiny of NRW undertaken by the Climate Change, Environment and Infrastrcuture Committee, meanwhile, highlighted NRW's significant budgetary pressures which resulted in a recruitment freeze and the subsequent scaling back of deprioritised services**. [284]

237. **Ofwat's functions have gradually been expanded by government and this has been met with an increase in their funding settlement, with an £11.3 million funding increase in 2023**.[285] However, there may still be a need to consider the capacity of Ofwat to perform all its duties and functions to its full extent, with some questioning whether they have the necessary resources given the scale of the Price Review.

238. **The DWI's regulatory functions have been increased by government.** They currently have a headcount of 58 and have taken on further duties to enforce the Security and Emergency Measures Direction (SEMD) and Network Information Systems (NIS).[286] They will also have a future role in regulating third parties under Ofwat's Direct Procurement for Customers (DPC) approach and have taken on more policy advice, communications activities and reporting due to the general high profile of the water industry. Some have questioned the status and positioning of the DWI as a team based within a government department rather than as an arms-length body.[287]

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[280] UK Parliament, 'Environment Agency: Enforcement Budget - Hansard - UK Parliament'
[281] Department for Environment, Food and Rural Affairs, 'Impact Assessment for the Water (Special Measures) Bill'
[282] Department for Environment, Food and Rural Affairs, 'Impact Assessment for the Water (Special Measures) Bill'
[283] UK Parliament, Water quality in rivers - Environmental Audit Committee
[284] Natural Resource Wales, 'CCEI Committee, Natural Resources Wales - Annual Scrutiny 2023-24'
[285] Ofwat, 'Enforcement capacity bolstered with £11m funding increase - Ofwat'
[286] Engagement with the Commission
[287] Engagement with the Commission

239. **In addition to funding issues, some stakeholders have questioned whether the regulators have the right skills and capabilities to perform their functions efficiently and effectively**. The EA has noted that they have had issues with recruitment and retention of the necessary skills, including in new and emerging technologies, and that salaries being offered in the private sector for comparable roles are greater than that which the EA can often offer.[288] We have also heard evidence that Ofwat's lack of engineering expertise may limit their ability to effectively supervise water company plans and performance.[289] This was noted to be particularly the case where water companies are seeking project delays or additional funding due to complex build requirements and supply chain constraints.

240. **It appears that environmental regulators may have limitations in their technological capabilities.** In light of the expansion of monitoring technology, regulators are increasingly required to process and audit huge quantities of data, and stakeholders have questioned whether these capabilities are held within the environmental regulators.[290] Legacy IT systems are still utilised within the EA.[291] The National Audit Office noted difficulties with the implementation of the EA's digital and technology transformation programmes, which were also impacted by wider Government activity, such as Brexit preparations.[292] The EA itself has been clear that it needs to enhance its digital and technological capabilities and upskill its workforce to effectively regulate the sector.[293] There has been progress more recently with changes to permitting services as well as improvements to digital infrastructure proposed through the EA's Water Industry Transformation Programme.[294]

241. **In NRW, work has been undertaken to replace legacy systems and functionality provided by its former parent bodies**, however NRW has noted there is more work to be able to integrate and bring together different platforms and systems as well as developing new skills and capabilities.[295]

242. **Some stakeholders have commented that there may also be cultural and organisational challenges within the regulators.** The Commission has heard of the professionalism, dedication and determination of regulatory teams. They are operating in a complex environment, with high levels of public and political scrutiny. Stakeholders have called for the use of more nature-based solutions, and the Commission has heard that the regulatory culture may be risk-averse which has limited their wider rollout.[296]

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[288] Environment Agency, 'committees.parliament.uk/writtenevidence/126765/html/'
[289] Engagement with the Commission
[290] Written evidence provided to the UK Parliament, committees.parliament.uk/writtenevidence/22501/pdf/
[291] Environment Agency, 'A new approach to ensure regulators and regulations support growth'; Environment Agency, 'Environment Agency Chief Regulator's report 2023-24 - GOV.UK'
[292] National Audit Office, 'Modernising Defra's ageing digital services - NAO report'
[293] Environment Agency, 'How we're bringing change to water industry performance – Creating a better place' (viewed on 17 February 2025), Environment Agency, 'Water industry: letter to water companies from Environment Agency CEO - GOV.UK'
[294] Environment Agency, 'How we're bringing change to water industry performance – Creating a better place'; Environment Agency, 'Supporting growth through regulatory reform: response from Environment Agency CEO to the Prime Minister - GOV.UK'
[295] Natural Resources Wales, 'Natural Resources Wales / Digital strategy 2022-25'
[296] Engagement with the Commission

It appears regulators may be overly prescriptive on the means of implementation and therefore are not incentivised to look at bigger picture, innovative and more cost-effective solutions. We have also heard that complex organisational structures within regulators can make it challenging for water companies to get consistent and clear direction and guidance.[297] Finally, and as explored in more detail in *Chapter 4,* Ofwat has held and maintained a view that decisions taken by water companies about their capital structure, including the amount of debt they take out and their ownership model, are for companies and the market to decide on.

243. **In Wales, stakeholders have commented on a lack of enforcement by NRW.** Some have expressed concerns that the level of enforcement is disproportionately low compared to the number of incidents, with NRW opting to issue warnings despite the severity of some incidents.[298]

244. **We have also received mixed views on the relationship between regulators and water companies, with some highlighting a 'revolving door' of senior regulator officials moving to work in water companies and vice versa**.[299]

Government guidance and oversight of regulators' duties

245. **There also appear to be challenges with government oversight of regulatory duties**. Government and Parliament have asked the regulators, particularly Ofwat, to take on new duties which may have added to the complexity in regulatory remits, without it appears, offering sufficient direction on how to balance trade-offs. At the outset of privatisation, Ofwat's objectives were to protect consumers and ensure the effective operation of companies and delivery of statutory functions. In 2014, the UK Parliament legislated to provide Ofwat with a new primary duty related to resilience. In 2024, the UK government introduced a growth duty to regulators, which stakeholders have expressed concerns about given the perceived tension between economic growth and the environment.[300] During the passage of the Water (Special Measures) Act 2025, amendments have been made to expand regulatory duties – including for a new duty on Ofwat to consider the environment.[301] Ofwat now has 5 general duties with respect to the water industry, plus a range of other objectives and duties, such as its general environmental and recreational duties, which it must balance in delivering its functions.

246. **Some have argued that respective governments have not provided clear enough guidance to help regulators to balance their objectives and trade-offs**.[302] For example, some stakeholders have argued that Ofwat has prioritised its duty to consumers, keeping water bills low, in place of infrastructure investment.[303] There does appear to have been some political pressure on the importance of ensuring customers

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[297] Engagement with the Commission
[298] Engagement with the Commission
[299] Windrush Against Sewage Pollution 'Corruption control or turning a blind eye?'
[300] Wildlife and Countryside Link, 'Growth_Duty_Ofwat_freshwater_pollution_impacts.pdf'
[301] Wildlife and Countryside Link, 'Water_Bill_Report_Nov_18th.pdf'
[302] House of Lords, 'The affluent and the effluent: cleaning up failures in water and sewage regulation'
[303] House of Lords, 'The affluent and the effluent: cleaning up failures in water and sewage regulation'

are protected from rising bills.[304] Ofwat's Chief Executive has challenged the contention that Ofwat has overly focused on its consumer objective – setting out that, during the 2019 Price Review, "[Ofwat] did not reject a single scheme on the grounds of affordability".[305]

247. **In addition, stakeholders argue that governments could do more to oversee the performance of regulators.**[306] The current model involves differing levels of accountability and oversight for the different regulators. The National Audit Office, in a broad review of environmental regulation in England, noted that Defra "has limited data on the effectiveness of its regulation to inform decisions about future activities and where to prioritise resources".[307] The report noted that, while progress has been made, limited oversight may constrain the ability of the UK government to understand the regulators' activities.

Areas where the Commission is seeking views

248. The Commission is seeking views on stakeholder proposals for changes to the regulatory structure across the following 5 areas:

- Reviewing the respective statutory duties and responsibilities of regulators
- Strengthening government guidance to the regulators
- Introducing new or expanded regulatory coordination mechanisms
- Reviewing the capability and funding arrangements of the regulators
- Merging regulators or establishing new authorities

249. We encourage readers to respond to our questions on these topics via Defra's online consultation tool, Citizen Space. The questions on Citizen Space are also included at Annex A: Call for Evidence questions.

Reviewing the respective statutory duties and responsibilities of regulators

250. **The Commission is seeking views on whether it is necessary to review the respective statutory duties and responsibilities of regulators**. This could involve examining the responsibilities of each regulator (their objectives, duties and functions) and assessing whether these are right, clear and manageable, and how any intersecting elements can be appropriately managed. Where regulators are deemed to have accumulated too many duties, or where duties overlap, this could result in a removal or consolidation of responsibilities. In contrast, where regulators are already in practice serving a function, or should be but do not have a corresponding statutory duty, this could result in an expansion of duties.

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[304] Department for Environment, Food and Rural Affairs, 'A water industry that works for everyone - GOV.UK'
[305] Written evidence provided to the UK Parliament, 'committees.parliament.uk/oralevidence/11401/html/'
[306] National Audit Office, 'Regulating to achieve environmental outcomes'
[307] National Audit Office, 'Regulating to achieve environmental outcomes'

Strengthening government guidance to the regulators

251. **Some stakeholders have suggested that governments strengthen their guidance to the regulators.**[308] The Commission is considering whether government guidance could clarify how to resolve trade-offs between regulators, maintaining their distinct duties. Clear guidance to regulators could set out the long-term plan regulators should be working towards, how they should interpret their duties, and who is responsible for what. This would need to be balanced with appropriate structures to maintain the independence of the regulators. Further information is set out in *Chapter 2*.

Introducing new or strengthening existing coordination mechanisms

252. **The Commission is interested in whether there needs to be new or expanded regulatory coordination mechanisms.** While we have heard of notable examples of positive collaboration such as RAPID to support water infrastructure development, stakeholders have suggested there is scope for further coordination.[309] Some stakeholders have suggested a mechanism for the Ofwat-led Price Review process to include negotiation or enhanced feedback between Ofwat and the other water regulators to ensure their inputs are fully considered, particularly at decision points which will affect the balance of costs and benefits of the investment package overall.[310] This could be similar to the historic Quadripartite Groups, where companies would meet with the DWI, Defra, Ofwat and the EA together to discuss investment priorities, or to the current Price Review Forum in Wales (see *Chapter 2*).[311]

Reviewing the capability and funding arrangements of the regulators

253. **The Commission is seeking views on the capability and the funding arrangements of the regulators.** This could involve an assessment of the resources, skills and capabilities that the regulators need to be efficient and effective, looking again at the funding settlements of the regulators as well as their charging mechanisms and considering whether they are appropriate. Some have argued for an expansion in the skills mix within regulators.[312] Lessons could be drawn from other regulated sectors where they deploy risk, delivery and engineering expertise to supervise and scrutinise the operational and financial activity of companies. Investment into digital technology to transition from legacy systems may also be required. The use of technology could be expanded, such as digitised permitting systems and greater use of AI and big data to assess compliance and monitoring data.

254. **Changes in the culture of regulation could also be considered to help ensure regulators are operating in line with an agreed vision for the water industry**.

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[308] House of Lords, 'The affluent and the effluent: cleaning up failures in water and sewage regulation - Industry and Regulators Committee
[309] House of Lords, 'The affluent and the effluent: cleaning up failures in water and sewage regulation'
[310] Engagement with the Commission
[311] Review of Ofwat and consumer representation in the water sector
[312] Engagement with the Commission

255. **The Commission is seeking views on whether the DWI, as a regulator, should continue to be based within Defra or instead become an arms-length body to ensure they can recruit the capabilities they require**.[313]

Merging regulators or establishing new authorities

256. **Others have suggested exploring more fundamental reforms – such as merging regulators or establishing new authorities.**[314] The argument made for the merging of the regulators is to encourage improved coordination, delivery and consideration of trade-offs. There are examples from other sectors where one regulator balances both the economic regulatory role as well as the policy, content and sector regulation. This includes the Civil Aviation Authority and Ofcom as set out in the case study below. Some stakeholders have also called for the creation of a new function to deliver better water system planning (see *Chapter 2*).

Box 7: Combined responsibilities – the Civil Aviation Authority (CAA) and Ofcom

Several regulators have a mix of regulatory objectives that must be balanced alongside one another.

The Civil Aviation Authority (CAA)

The CAA conducts a number of different types of regulation in the aviation sector:

The CAA regulates the fair treatment of consumers. The CAA support consumers by enforcing legislation relating to issues such as price transparency and passenger rights during flight disruption.

The CAA regulates airports with significant market power. Currently only Heathrow and Gatwick are deemed to meet market power tests and are therefore subject to price control by the CAA. For these airports, similar to Ofwat, the CAA agrees operating and capital expenditure allowances, and sets a cost of capital against which investors are remunerated.[315]

The CAA is responsible for overseeing UK aviation safety. The CAA's safety plan sets out at how it satisfies itself that all aspects of the aircraft flight are safe, from proper design and maintenance to training and qualification of staff. This is underpinned by relevant legislation.[316] A recently completed ICAO safety audit rated the UK Civil Aviation Authority (CAA) as one of the best aviation safety regulators in the world, a view supported by the Department for Transport's (DfT) review of the CAA.[317]

Ofcom

Ofcom regulates 3 different sectors from both a content and economic regulation perspective, as well as providing consumer support services:

[313] Engagement with the Commission
[314] Written evidence provided to the UK Parliament, 'Water Companies: Regulation and Financial Stability - Hansard - UK Parliament'
[315] UK Civil Aviation Authority, 'Economic regulation of Heathrow Airport: H7 Final Decision – Summary'
[316] UK Civil Aviation Authority, 'The CAA safety plan | Civil Aviation Authority'; UK Civil Aviation Authority, 'UK Regulations | Civil Aviation Authority'
[317] Civil Aviation Authority review: report - GOV.UK

Broadcasting – Ofcom maintains and enforces content standards broadcasters must comply with, oversees certain companies – designated as public service broadcasters – to make sure they have diverse and correct content, and maintains a licensing regime for TV and radio providers.[318]

Telecommunications – Ofcom provides consumer advice on coverage, imposes quality conditions (for example enabling free calls to emergency services) which all communication networks must comply with, as well as regulating prices and competition within the telecommunications market.[319]

Postal industries – Ofcom requires Royal Mail to provide certain services at a uniform price throughout the UK.[320]

[318] Regulating public service broadcasters - Ofcom
[319] A summary of Ofcom's rules for phone and broadband providers - Ofcom
[320] Royal Mail and the future of the universal service obligation - House of Commons Library

Chapter 4: Economic regulation

257. **This section covers the economic regulation of the water industry.** The provision of water and wastewater services is a natural regional monopoly, and the scope for competition is very constrained. Economic regulation – for example, through price controls – exists to protect consumers from the abuse of monopoly powers such as high costs and poor service and to provide incentives to drive efficiency and company performance.

Price control

Background

258. **Economic regulation is intended to incentivise natural monopoly companies to act in the public interest and deliver investment for a fair price**. Water companies mostly operate as regional monopolies because water is heavy and difficult to move. However, Ofwat has a duty to protect the interests of consumers, wherever appropriate, by promoting effective competition.[321] In practice, Ofwat does this by both 'simulating' and 'introducing' competition. Ofwat's specific attempts to introduce competition in the water industry are covered later in this chapter. This section focuses on Ofwat's general approach to simulate competition through economic regulation.

259. **The overarching constituents of economic regulation are common across sectors, although the technical execution varies**.[322] Ofwat's Price Review is composed of 3 key building blocks:

- Setting cost allowances for the amount water companies may spend
- Setting rates of remuneration for their investors
- Setting additional performance incentives

260. **Ofwat engages with companies during the Price Review process to determine these building blocks.** Companies are also able to submit evidence to the Competition and Markets Authority (CMA) and appeal determinations where they feel Ofwat has allowed for insufficient funding through the Price Review. Box 8 provides further detail on Ofwat's Price Review methodology.

261. **Ofwat has continually amended its price control framework, in some cases with the intent to approximate the effects of a competitive market**. For example, Outcome Delivery Incentives (ODIs) were introduced by Ofwat at Price Review 2014 in response to the 2011 Gray Review of Ofwat which emphasized the need for Ofwat to adopt a more outcomes-focused approach to regulation and consumer

[321] Section 2, Water Industry Act "exercise and perform [its functions] in the manner it considers is best calculated to further the consumer objective to protect the interests of consumers, wherever appropriate by promoting effective competition". Water Industry Act 1991
[322] Different economic regulators adopt slightly different approaches to, for example, setting base allowances or calculating the cost of capital.

representation in the water industry.[323] At Price Review 2024, Ofwat also introduced Price Control Deliverables (PCDs), which are output-based and similar to ODIs in approach, to further incentivise companies to fully deliver against their allowances.[324]

Box 8: Ofwat's Price Review Process

Every 5 years, Ofwat scrutinises water companies' proposed spending in business plans and accordingly sets the prices water companies can charge customers over the AMP. Ofwat therefore protects consumers by scrutinising companies' level of planned costs for investment and for operating the system and ensures that these are cost-efficient. Ofwat also sets performance targets for companies – covering customer service levels and environmental performance.

Expenditure allowances

Ofwat's Price Review draws on the 'RPI-X' model of price controls as a regulatory solution to the potential problem of monopolies overcharging. This is the price mechanism for incentivising efficiency and remuneration of companies' Regulatory Asset Base (RAB). Ofwat sets allowances for water companies' expenditure which are indexed within the Price Review period by a measure of inflation with 'X' broadly reflecting the scope set by the regulator for efficiency improvements within the industry. [325] Ofwat assesses the cost-efficient level of allowances to maintain and enhance the RAB, taking into account reasonable productivity improvements alongside additional quality requirements.

Ofwat's price mechanism is intended to proxy market competition and deliver productive efficiency as it provides strong incentives for water companies to deliver cost reductions. Once Ofwat has set allowances to deliver the RAB, where companies manage to spend less by identifying efficiencies, they are able to retain a portion of the difference as profit. It is also intended to tackle information asymmetries between Ofwat and companies through providing a price discovery process – since companies' spending behaviour in previous periods can be used to reveal companies' efficient cost levels.

Under this approach, Ofwat sets prices over the 5-year AMP, based on an assessment of what an efficient company should be spending. The regulator is able to come to this assessment through a combination of comparative benchmarking between companies' spending proposals *within* each period as well as company specific performance assessments *across* periods. Since Price Review 2014, Ofwat has implemented its price mechanism through the use of revenue controls, setting in advance the revenue companies may recover over the AMP through setting cost allowances for the amount water companies may spend.[326]

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[323] Review of Ofwat and consumer representation in the water sector - GOV.UK
[324] PR24 final determinations: Price control deliverables appendix - Ofwat
[325] Originally the Retail Price Index, but this has since transitioned with Price Review 2019 to the Consumer Price Index as the new national statistic. pap_tec20150525w2020app1.pdf
[326] PR24 final determinations: Expenditure allowances - Ofwat

As part of this mechanism, Ofwat sets separate cost allowances for base and enhancement spending. For 'base' (that is operating and maintenance) expenditure, Ofwat primarily relies on modelling companies past spending and benchmarking between companies. Ofwat's base allowances are set based on historical expenditure, future projections and company proposals. For 'enhancement' (that is new investment) expenditure, Ofwat considers companies' proposals for future spending, and uses a mixture of econometric comparisons between companies, and assumptions about the cost of particular investments. Ofwat then sets separate allowances for base and enhancement over the 5-year period. From Price Review 2014 onwards, these allowances have been set on a total expenditure basis. Prior to Price Review 2014, separate allowances were set for operating and capital expenditure, this approach was rejected because of concerns it was leading companies to prioritise capital expenditure at the expense of operating expenditure (see below).[327]

As above, companies are incentivised to underspend against allowances. Where companies under- or overspend, underspending is shared with – while overspending is borne by – customers and stakeholders. While this cost sharing approach encourages companies to pursue cost efficiencies, the key rationale is that it also further helps incentivise companies to reveal their efficient levels of spending. This efficiency mechanism was first introduced at Price Review 1999 and has been refined across subsequent Price Review cycles.[328] It also insulates companies where they significantly overspend. At Price Review 2024, Ofwat has set cost sharing rates ranging between 40-60% depending on the quality of companies' business plans.[329]

The process depends on the accuracy of water company business plans. As part of their assessment of plans, Ofwat will typically challenge water companies to deliver their plans more efficiently and at a lower cost to customers. There are other variables that can impede the delivery of plans. As discussed later in this chapter, cost shocks, including unexpected price rises, can place pressure on spending plans. It is therefore important that water companies forecast infrastructure need and cost accurately.

Remuneration of investors

In the 1990s, Ofwat further developed and incorporated the concept of the Regulatory Capital Value (RCV) to ensure privatised water companies remained attractive to investment. When the RCV was originally set for each company, it was based on the average market value of each company, not the true value of its assets. Since privatisation, Ofwat has adjusted the RCV upwards to account for net new capital expenditure at each Price Review. Ofwat also adjusts the RCV downwards to account for RCV 'run-off', which is intended to ensure that each generation pays their fair share for the assets they are benefiting from. Importantly, the RCV is not a reflection of the actual value of companies' assets. Instead, the RCV is a 'construct,' designed to serve as a

[327] https://www.ofwat.gov.uk/wp-content/uploads/2022/01/PR14_Review_Paper_Jan_2022.pdf
[328] PR99-final-determinations-document.pdf page 89; Microsoft Word - development_of_water_industry270106.doc page 61
[329] Quality and ambition summary - Ofwat

commitment device to investors by providing a reliable proxy for the market value of the regulated company.[330]

Beyond setting specific allowances for companies, Ofwat also sets a cost of capital (the cost of equity and debt that companies use to finance themselves).[331] Companies finance their RAB through longer-term borrowing and equity so that investment is paid for over time and as it grows over time, they are allowed to increase prices to reflect rising costs of financing the larger asset base. Like other regulators, Ofwat sets the weighted average cost of capital (WACC) using the 'Capital Asset Pricing Model (CAPM)' methodology, using estimates of the cost of equity and debt for companies with similar risk levels, and an assumption about the notional level of 'gearing'.[332] Under this approach, a single figure is set for the Weighted Average Cost of Capital (WACC) that applies equally to all companies. The amount of money companies are able to reclaim through bills for the cost of capital is then a function of the assumed WACC and companies' RCVs. In practice, companies will have different levels of gearing to the notional level and may face different capital costs, and the true WACC companies face may therefore differ from the regulatory WACC. In principle, for any given level of gearing, some companies will have cheaper financing costs than average. Outperforming the WACC with cheaper financing rates is a source of profit for companies.

Performance incentives

Ofwat's current Price Review process goes further from the original 'RPI-X model' by including Outcome Delivery Incentives (ODIs) and Price Control Deliverables (PCDs) to address 'externalities' or public policy objectives. The original model was judged to be lacking a framework for ensuring monopoly companies achieved service quality levels. To tackle this issue, at Price Review 2014, Ofwat introduced an ODI framework, following recommendations in the 2011 Gray review to pursue outcomes-focused regulation.[333] ODIs are not unique to the water industry; Ofgem makes use of an Output Delivery Incentive mechanism, similarly to Ofwat.[334] Under this model, alongside setting price limits, Ofwat also sets targets or service improvements over the 5-year period. If companies over- or under-perform against these targets, then they are rewarded or penalised in the form of an increase or decrease on allowed returns. This provides an incentive to improve quality as well as secure efficient costs. From Price Review 2024, Ofwat has also introduced Price Control Deliverables alongside ODIs, where if companies fail to deliver specific schemes funded through bills, the Price Control Deliverables mechanism will enable funding to be reclaimed.[335]

The way Ofwat sets ODIs has changed since their introduction at Price Review 2014. Originally, the intent behind ODIs was to encourage companies to internalise costs and

[330] RD 04/10: Regulatory capital values 2010-15 - Ofwat
[331] PR24_final_methodology_Appendix_11_Allowed_return.pdf
[332] Ofwat set a notional capital structure that is consistent for all companies with an assumed notional gearing level for each Price Review period. PR24_final_methodology_Appendix_11_Allowed_return.pdf
[333] Review of Ofwat and consumer representation in the water sector - GOV.UK
[334] DSO Incentive Report 2023-24
[335] PR24 final determinations: Price control deliverables appendix - Ofwat

benefits associated with service improvements. Customers were asked by each company how much they would pay for a given improvement in, for example, leakage levels, and then companies were rewarded or penalised with reference to this valuation, depending on levels of improvement. The reliability of customer panels was, however, subsequently challenged.[336] At the same time, all companies overperformed against at least some of their targets at Price Review 2014. Ofwat's review of Price Review 2014 found that a quarter of performance commitments were met four years ahead of schedule, and may have encouraged Ofwat to view ODIs as insufficiently stretching in some cases.[337] Overall, 9 out of 17 companies received net outperformance payments during the period and outperformance payments for the industry were greater than underperformance payments.[338] Ofwat responded at Price Review 2019 by moving away from customer panels to a more top-down approach to setting targets, and greater use of benchmarks that applied equally to all companies. Ofwat also declared its intent to 'sharpen' incentives at Price Review 2019.[339] Price Review 2024 appears to represent a continuation in this trend, with Ofwat moving towards a more standardised, top-down approach to setting ODIs, albeit with increased safety mechanisms. Ofwat also introduced at Price Review 2024 a backstop Outturn Adjustment Mechanism to rebase ODI returns to ensure that overall impacts are fair to both customers and investors, where there is materially different performance than expected.[340]

Further technical detail on Ofwat's Price Review process, including its approach to setting base, enhancement, the cost of capital and ODIs can be found in Annex D.

Current issues

262. The Commission has heard 8 broad issues concerning the current economic regulation model:

- Complexity of the Price Review process
- Prioritisation of bills at the expense of resilience
- An over-reliance on benchmarking
- Challenges in how Ofwat sets enhancement allowances
- Using historical data to set base allowances
- Whether the WACC is competitive with other sectors
- Challenges with attempts to simulate competition, including through ODIs
- Challenges in the assurance of investment delivery

[336] Lessons Learned PR14
[337] PR14-Review-Discussion-paper-on-findings.pdf page 18
[338] PR14-Review-Discussion-paper-on-findings.pdf page 41
[339] PR19 Final Determinations – Delivering outcomes for customers policy appendix
[340] PR24 final determinations: Delivering outcomes for customers and the environment page 65

Complexity of the Price Review process

263. **The Commission has heard that Ofwat's Price Review has become increasingly complex over time.** The Price Review 2024 process has taken 3 years from the publication of working papers in May 2021 to the publication of Final Determinations in December 2024, with extensive documentation produced.[341] If companies elect to appeal their determinations to the CMA this is likely to take a further 12 months. Since Price Review 2009, Ofwat has also moved from a single price cap to three revenue controls, introduced a two-step Quality and Ambition Assessment for business plans, and extended the requirements for companies to publish long term delivery strategies.[342] These increasing requirements may be because Ofwat are seeking to overcome information asymmetries and to uncover water companies' true costs in advance rather than after the fact. Stakeholders have, however, questioned whether the current level of complexity and documentation is creating unnecessary challenge and distraction from the core delivery programme.[343]

Prioritisation of bills at the expense of resilience

264. **The Commission has heard that Ofwat's Price Review process focuses too much on price scrutiny and keeping bills low, and that this may have been at the expense of longer-term resilience**.[344] If the effect of inflation is removed, water bills have reduced nearly every year since 2014.[345]

265. **While customers have paid lower bills in recent years, this has also meant that water companies have received less in-period revenue**. The Commission has heard stakeholders express concerns about the long-term impact of this approach on the health of the sector's infrastructure.[346] There is also a view, however, that lower bills have reflected lower financing costs rather than reduced funding for infrastructure.

An over-reliance on benchmarking

266. **Some stakeholders have questioned whether Ofwat has gone too far in its use of econometric benchmarking to compare water companies through the Price Review**.[347] Ofwat's approach to scrutinising allowances assumes that companies can meaningfully be compared to each other and across periods. However, the Commission has heard various complaints from water companies that Ofwat's reliance on benchmarking does not capture differences in areas such as current performance levels, population density, amounts of rainfall, soil conditions and infrastructure timelines – which may make costs higher or lower for a given company. Ofwat can control for these factors to some degree through econometric modelling. For example, Ofwat has controlled for population density and urban rainfall, as well as making

[341] 2024 price review - Ofwat
[342] Long-term delivery strategies - Ofwat, PR24_final_methodology_Appendix_12_QAA.pdf
[343] From Commission engagement with water company investors
[344] From Commission engagement with Ofwat and water company investors
[345] Ofwat data provided directly to the Independent Water Commission
[346] GIIA Response to Ofwat's PR24 Draft Determinations .pdf, Engagement with the Commission
[347] From Commission engagement with company investors

company specific adjustments. But companies have questioned whether this is sufficient. One of the other factors that affects base expenditure allowances is a historical 'upper quartile' performance benchmark. This is intended to increase efficiency and protect customers in the absence of a competitive market, but some water companies have noted that it can be very challenging for lower performing companies to catch up and ever reach the upper quartile. Stakeholders have identified this issue as particularly pertinent in relation to maintenance – for example, Thames Water has complained Ofwat's funding decisions have left them with an 'asset health deficit'.[348]

Challenges in how Ofwat sets enhancement allowances

267. **The Commission has heard that Ofwat faces different challenges when assessing enhancement and base allowances.** Assessing enhancement appears to be inherently more difficult than base and at the same time enhancement spend has increased over time. When companies undertake similar enhancement projects, Ofwat is able to use benchmarking for comparison. For many other projects, however, Ofwat must rely on a mixture of 'deep' and 'shallow' dives with companies to test the value for money of proposed spending.[349] This may be more burdensome to Ofwat and to water companies than the mostly econometric modelling Ofwat uses for base.[350] More fundamentally, as covered in *Chapter 2,* Ofwat is constrained in its ability to scrutinise enhancement spending by the fact this is agreed upstream as part of investment plans by EA, NRW and the DWI, without full regard to cost, benefits, affordability or deliverability.

A historical approach to base allowances

268. **Stakeholders have questioned whether Ofwat's historical approach to setting base allowances may have contributed to resilience issues in the sector**.[351] Ofwat primarily relies on companies' historical spending (but there is some assessment of future projections and company requests) when assessing base expenditure. Past maintenance spending during the period being used to set allowances may have been below what had been required. This may have been because allowances had been incorrectly set in the past by Ofwat, because companies were forced to adjust their plans in-period, or because companies had spent allowances in different ways. An overreliance on using historical data for benchmarking could therefore capture inaccuracies and trap water companies into successive spending periods in which allowances are lower than what is required.

269. **Stakeholders have argued that there is a disconnect between investment planning frameworks and Ofwat's approach to base allowances**. Ofwat does not, for example, appear to fully assess base allowances with reference to planned

[348] Asset Health Deficit
[349] PowerPoint Presentation
[350] PR24-draft-determinations-Expenditure-allowances-Base-cost-modelling-decision-appendix.pdf
[351] Reckon report WS2 2024.pdf page 4

spending identified under Water Resource Management Plans (WRMPs) and Drainage and Wastewater Management Plans (DWMPs).

270. **The Commission has also heard from water companies that Ofwat lacks engineering expertise and that this could impact funding decisions around base**.[352] Ofwat has, however, agreed in Price Review 2024 to review the settlement for base where companies provide evidence they need to spend more.[353]

Whether the WACC is competitive with other sectors

271. **Investors have recently raised concerns about the Price Review's impact on the attractiveness of the sector.**[354] Ofwat estimates the WACC with reference to the cost of equity and debt, and conducts a financeability assessment to check whether allowances granted at a given PR will support equity and debt issuance. Considerations around the length of the Price Review process, including the frequency of setting the WACC, are covered in *Chapter 3*. However, as covered in *Chapter 4, Investment*, investors maintain that the overall package of returns allowed by Ofwat has declined over time and is no longer sufficient to secure the additional investment required. At Price Review 2019, 4 water companies appealed to the CMA – resulting in, among other things, an increase in the allowed WACC; the CMA felt it was appropriate to 'aim up' on the WACC, reflecting risks facing the sector.[355] At Price Review 2024, investors have been even more vocal about risks and volatility facing the sector and the credit rating for the sector has been downgraded.[356] Ofwat has responded by increasing the WACC to 4.03% at Final Determinations from 3.72% at Draft Determinations.[357] However, 6 companies have appealed to the CMA for Price Review 2024 – the highest number yet.

Challenges with attempts to simulate competition, including ODIs

272. **Stakeholders have questioned whether Ofwat has gone too far in attempting to find proxies for competition in the water sector**.[358] This is illustrated through the methodology of ODIs, for example. Calibration of ODIs has proven to be challenging, with different approaches to setting targets used at Price Review 2014, 2019 and 2024. The impact of ODIs on companies has also changed in recent Price Reviews, moving from marginal net rewards at Price Review 2014 to significant penalties at Price Review 2019 (data to 2023-24).[359] Figure 16 suggests that a proportion of equity returns have been wiped out by ODIs in Price Review 2019 due to company underperformance. However, to see the full scale of impact on returns, a holistic view needs to be taken as factors such as finance and expenditure outperformance play in to overall returns. Some stakeholders have argued ODIs are now too challenging and

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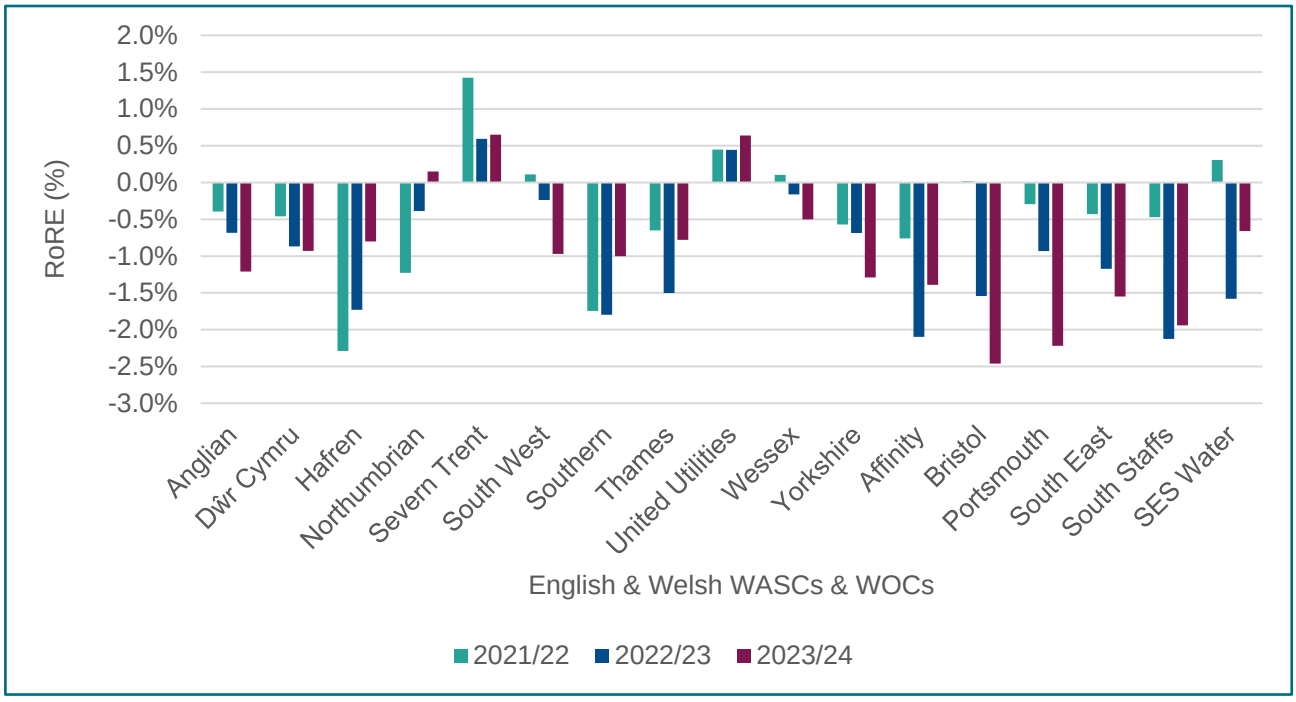
[352] From Commission engagement with water company investors
[353] PR24 final determinations: Roadmap for enhancing asset health understanding in the water sector - Ofwat
[354] Ofwat in danger of repeating same mistakes say water investors | GIIA,
[355] Final report – CMA PR19 Price Determination
[356] Moody's downgrade of regulated water utilities
[357] PR24 final determinations: Aligning risk and return - allowed return appendix - Ofwat
[358] Price Review 24 Bristol Water Submission
[359] PR19-final-determinations-Allowed-return-on-capital-technical-appendix.pdf, PowerPoint Presentation

will not enable poor performing companies to improve. Others have argued that increased volatility associated with ODIs may lead investors to demand higher returns, exacerbating issues with the WACC.[360] The baseline position by Ofwat in determining stretching ODIs has also been questioned by some, noting that for companies in turnaround, the level of progress that can be made in-period will not be equivalent to stronger performers.

Figure 16: ODI performance since 2021-22, as a % of return on regulated equity (RoRE), England & Wales, WASCs & WOCs



Source: Ofwat[361]

Challenges in the assurance of delivery

273. **Water companies are allowed to underspend against Ofwat cost allowances by identifying cost savings.** Water companies work with the EA, NRW and DWI to agree investment plans, before putting proposals forward to Ofwat on the revenue required to deliver these plans. As set out previously, Ofwat scrutinises these proposals, and provides allowances based on an assessment of cost efficiency. Companies are permitted to spend less than their agreed allowance; where this happens, companies can keep a proportion of the difference as profit, with the other proportion being shared with customers. This is intended to promote efficiency, where companies can find ways of delivering projects for less.

274. **Where companies fail to deliver projects, this may result in enforcement action by the regulators – but some have raised concerns about the extent to which project delivery has been assured historically**. Where projects have been agreed through investment plans, failure to deliver them may result in a breach of, for example, EA and NRW permits, where these projects are permitted. However, we have heard

[360] From Commission engagement with water company investors
[361] Data from: Ofwat Monitoring Financial Resilience reports: 2021-22, 2022-23, 2023-24

that a proportion of agreed investment is not permitted (for example, underground infrastructure investment). Ofwat does not currently have an inspection function. Prior to 2014, Ofwat undertook a detailed approach to assurance, assessing outputs, performance and expenditure. Following the Gray review in 2011, Ofwat moved to an outcomes-based approach, with less assurance of output delivery. PCDs do go some way to incentivise companies to fully deliver outputs, however, these were only fully introduced at Price Review 2024 (although, some scheme specific performance commitments existed in Price Review 2019). PCDs will also only cover around 38% of total expenditure at Price Review 2024.

Areas where the Commission is seeking views

275. The Commission is seeking views on stakeholder proposals where improvements could be made to economic regulation, across the following 7 areas:

- Customer bills balance
- Changes to base
- Changes to enhancement
- Changes to the WACC
- Changes to ODIs
- Changes to PCDs
- A more supervisory approach

276. We encourage readers to respond to our questions on these topics via Defra's online consultation tool, Citizen Space. The questions on Citizen Space are also included at Annex A: Call for Evidence questions.

Customer bills balance

277. **The Commission is seeking views on how the level and growth in customer bills should be balanced against other considerations like resilience as part of the Price Review process**. For example, in Scotland, the water regulator has moved to a new model of 'ethical based' regulation. As part of this approach, Scottish Water is expected to set out a strategic plan, with an overall level of investment and principles for prioritising projects within this envelope (but not necessarily an agreed list of outputs).[362] This approach is intended to allow Scottish Water to operate with greater transparency and collaboration, shifting the regulator's focus towards ensuring spending decisions align with long-term public interest rather than solely on price control.[363] In return for greater flexibility, the regulator expects greater 'candour' in conversations with the company.[364] The Commission is interested in views on whether this model could be applicable to England and Wales. There is a different ownership

[362] 2021-27 Methodology refinements.pdf
[363] Prospects for prices.pdf
[364] Prospects for prices.pdf

model in Scotland and the Commission is interested in whether this has any bearing on the efficacy of an 'ethical based' regulation model.

Changes to enhancement

278. **The Commission is interested in whether the Price Review process should separate enhancement expenditure from base expenditure more formally, given their differences**. The Commission is also interested in views on whether cost could be factored into the investment planning process earlier (for example, by providing the EA and NRW with a duty to consider cost). The Commission wants to explore options to address the unique challenges associated with assessing enhancement. One option would be to run separate processes for base and enhancement expenditure. For example, base spending could be assessed on an annual basis, while enhancement could be assessed on multi-year basis (like the current 5-year Price Review) or a staggered basis (with enhancement allowances agreed as and when new projects come to Ofwat).

Changes to base

279. **The Commission is seeking views on whether Ofwat should take a more bottom-up approach to base spending.** For example, the Commission has heard that in Scotland, the water regulator sets base expenditure relative to the value and expected life of specific assets which require maintaining or upgrading.[365] In this way the regulator takes the infrastructure need as its starting point and sets allowances from there. This is clearly distinct from Ofwat's approach in which base expenditure is derived largely from past spending, though Price Review 2024 did introduce more forward-looking elements. The Commission is interested in views on whether this option should be extended to Ofwat's Price Review process at future Price Reviews. The Commission is also interested in whether and how the connection between investment plans and Ofwat's base scrutiny process could be strengthened. For example, when setting base allowances, Ofwat could formally consider planned investment through WRMPs and DWMPs.

Changes to the WACC

280. **The Commission is seeking views on potential changes to the WACC at future Price Reviews.** Options could include 'aiming up' on the WACC, as the CMA did at Price Review 2019. This would mean Ofwat set a WACC above their central estimate, to reflect the risk of underinvestment. The Commission would also like to receive evidence on alternative timescales for the WACC estimate, which is currently reviewed as part of the PR process every five years. The Commission would also welcome views on whether the CMA appeal process has been effective in reassessing water industry Ofwat determinations appropriately.

[365] 2024 07 05 Reckon WS2 Annex 2.pdf

Changes to ODIs

281. **The Commission would also like to explore the role of ODIs within the Price Review and their effectiveness in delivering performance outcomes**. This includes whether it has enough flexibility built in to allow companies to deal with events such as cost shocks (for example sharp rises in inflation), and ideas for improvements to baselines and assumptions that would allow poorly performing companies to turnaround their performance without creating negative incentives for the industry. A range of different options could be considered.

282. **Most radically, outcomes- or outputs-based approaches could be scrapped entirely at future Price Reviews.** This could reduce perceived risks to investors in the sector, but it may also reduce incentives for companies to improve and deliver good performance. Alternatively, companies' exposure to explicit incentives and/or deliverables could be reduced or increased in some way.

Changes to PCDs

283. **The Commission would like to explore whether existing mechanisms for scrutinising investment delivery, such as PCDs, are sufficient**. As noted, the Commission has heard complaints that delivery of water company infrastructure is not appropriately scrutinised. Ofwat has introduced PCDs at Price Review 2024 to strengthen scrutiny of delivery. The Commission would like to gather views on this mechanism, including both whether it goes far enough, and the costs associated with introduction, as well as views on PCD methodology.

A more supervisory approach

284. **Economic modelling and analysis will always be a key element of economic regulation, but the Commission is interested in alternative approaches to regulatory scrutiny**. As the regulatory system has evolved, Ofwat's duties have grown as has the complexity of economic regulation. It now appears that traditional economic regulation alone is not sufficient to manage market failures in the water industry. Recognising this, one option – covered in more detail later in *Chapter 4, Financial resilience* – would be for Ofwat to supplement economic regulation with a more formal supervisory function.

Box 9: Can water companies turn around poor performance?

It is important the environmental and other standards are clear and enforceable, and that companies faces consequences for breaking the law. The public rightly expect that when companies fail to comply with the law, they are appropriately penalised. As covered in *Chapter 5*, the regulators have a range of powers to enforce against wrongdoing.

However, companies also need incentives to improve. Enforcement should not only be punitive; it should also serve a restorative function. The Commission has heard from some stakeholders, however, that the regulatory regime does not provide incentives for improvement. For example, the bottom 6 performers in the Price Review 2009 Service

Incentive Mechanism adjustment (Thames, Southern, South East, South West, Portsmouth, and Dee Valley (now Hafren Dyfrdwy), and those which received negative adjustments at Price Review 2014 as a result, are also all still in net penalty at Price Review 2019 (based on 2020-24 performance).[366]

The Commission has heard some the regulators' enforcement roles can sometimes be in tension with supporting company improvement. In most cases the regulators are statutorily required to use their enforcement powers where they find evidence of failure. This can mean the regulators have limited discretion over when to use enforcement powers when they find evidence of failure. Some stakeholders have also complained that financial penalties can also prevent poor performers from improving.

The Commission has also heard a number of specific complaints about the Price Review process:

- The ODI mechanism can embed gaps between over- and underperformers. In order to incentivize companies to improve, expected returns from meeting targets through the ODI mechanism should be set to exceed costs companies incur when investing towards improving. However, this may not always be the case and, where it is not, there is a risk that companies are disincentivised from improving**.**[367]
- Benchmarking may not adequately account for a companies' specific circumstances. The Price Review does include various mechanisms for adjusting allowances based on company characteristics. However, stakeholders have questioned whether these adequately capture differences between the size or complexity of the areas that water companies serve.
- As discussed earlier, the approach to setting allowances in the Price Review is based primarily on historical data. This may mean that previous errors (for example, underspending on maintenance) get baked into future calculations with limited opportunities for correction. This may also not account for the acceleration of development needs in a particular region during a spending period or for unexpected investment needs.

[366] Internal Commission Analysis
[367] Engagement with the Commission

Customer bills

Background

285. **Customers are charged for their water and sewerage services by the company which serves the area they live in, which means customers in different regions are charged different amounts**. As the charges determined by Ofwat through the Price Review are individual to each company and consider a range of circumstances and investment needs, customers across the country are charged at different rates for the provision of water and sewerage services.

286. **For 2024-25 the average bill in England and Wales is forecast to be £440, which is around £1.20 per day**.[368] Figure 18 below highlights the variability in annual bills between companies.

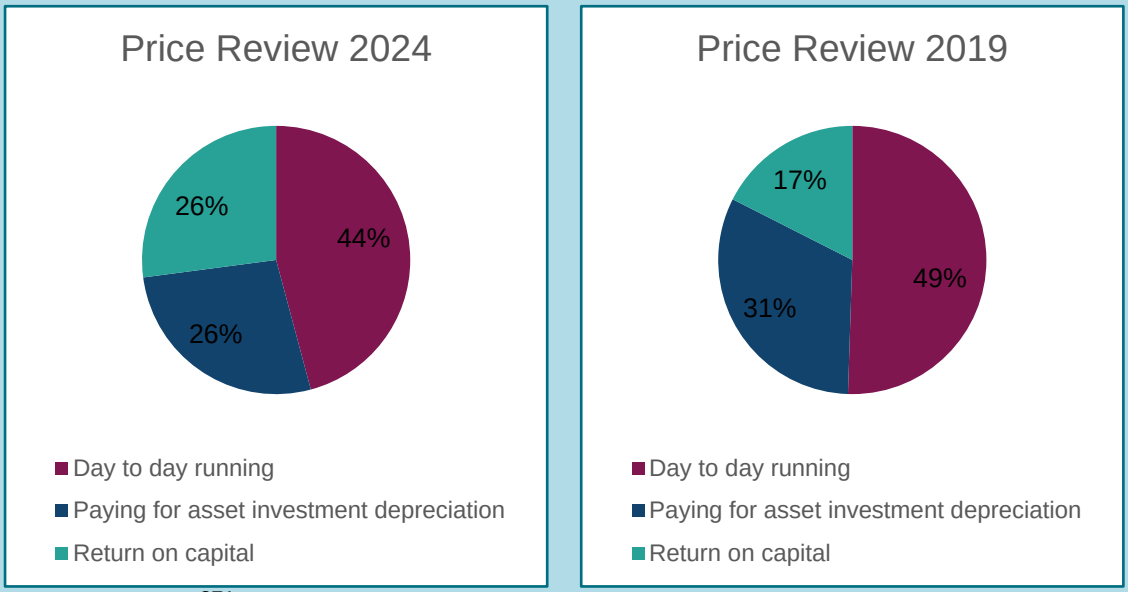
287. **For customers with a water meter, their bill is based on the amount of water they use, which can also lead to variation in bills**. The remainder of customers pay a standard charge, plus an unmeasured charge. The unmeasured charge can be based on the historic valuation of their property (called Rateable Value or RV) or an assessment of water usage based on the size and type of property or the number of occupants (called assessed volume charge). The majority of water meters in England and Wales are 'standard' meters that require manual reading. However, smart meters are increasingly being installed, with the use of these meters expected to increase from approximately 12% of households to 51% by 2030.[369] These measure water usage and send data electronically, providing more timely information and helping to detect leaks.

Box 10: How money from customer bills is used

In Price Review 2024, Ofwat has allowed companies a 5-year revenue allowance of £90.9 billion which can be charged in customer bills (2022-23 prices). This is £12.8 billion less than the £103.7 billion total planned spending over the next 5 years, because companies are expected to issue debt and equity to smooth bill increases. By comparison, Price Review 2019 final determinations allowed £68.2 billion in revenues and £61.5 billion of total expenditure allowances. This was driven by the need to pay off depreciation of assets, and financing debt and equity associated with investments made in previous price review periods.

[368] Forecasted data provided to the Independent Water Commission by Ofwat. The data has been converted to 2022-23 prices using the ONS CPIH index.
[369] Environment Agency, 'Appendix A: Smart metering in revised draft water resources management plans' - GOV.UK

Figure 17: Breakdown of how allowed revenue is spent by water companies at Price Review 2024 and Price Review 2019, England & Wales, WASCs & WOCs[370]



Source: Ofwat[371]

Current Issues

288. The Commission has heard 3 broad areas where issues have been raised in relation to customer bills:

- Significant increases in bills
- Variability in bills across regions
- Lack of water metering

Significant increases in bills

289. **While the Commission has heard (*Chapter 4*) that Ofwat may have focused too much on price scrutiny and keeping bills low, it has also heard concerns from consumer groups about future price rises, particularly for the most vulnerable**. At Price Review 2024, bills are due to rise by an average of £31 per year between 2024-25 and 2029-30 for water and wastewater companies in England and Wales.[372] At the same time, the number of customers who think their water bill is fair has fallen to 55%. This is below the previous low of 61% in 2017.[373] This coincides with a broader knock to customer trust: customers are now more likely to believe that water

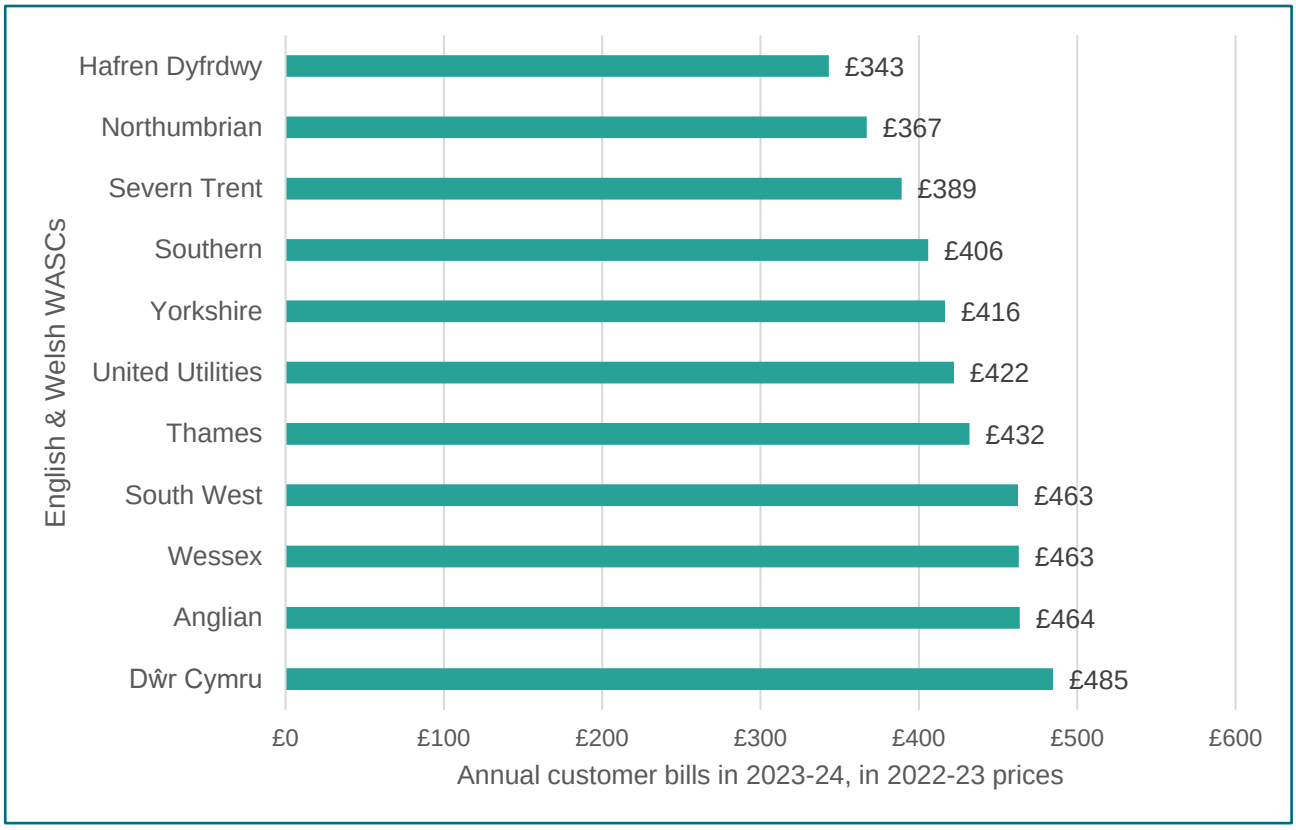
[370] "Paying for asset investment depreciation" – When a water company invests in new assets, these have a useful life over which they provide value. Instead of accounting for the entire cost of the asset in the year it was purchased, the cost is spread over its useful life through "depreciation".
[371] All data within Box 11 was provided directly by Ofwat to the Independent Commission. Price Review 2019 values are taken from the Price Review 2019 final determinations and do not reflect the CMA redeterminations. Prices are in 2022-23 using the ONS CPIH index.
[372] Ofwat, 'Final determinations 2024 price review – Sector summary'
[373] CCW 'Water Matters 2024'

companies are more interested in profits than providing a good service, and less likely to believe that they offer value for money.[374] There is a growing dissatisfaction with what water companies do to protect the environment, with particular concern over sewage pollution. UK and Welsh government ministers have been clear that bills need to rise to pay for infrastructure upgrades.[375]

Variability in bills across regions

290. **There are significant differences in water bills between regions.** Figure 18 shows the company variation in bills in 2023-24. The highest annual bill (Dŵr Cymru Welsh Water) was 41% higher than the lowest annual bill in England and Wales (Hafren Dyfrdwy).

Figure 18: Annual customer bills by company in 2023-24, England & Wales, WASCs only, in 2022-23 prices



Source: Ofwat[376]

[374] Ofwat, 'Customer Spotlight Wave 2: April 2024' (14 February 2025) – 40% of respondents agreed that companies are more interested in profits than providing a good service; CCW, 'Water matters' found satisfaction with the value for money of water services has reduced by 6% to 69% in 2023 and satisfaction in value of sewerage services has reduced by 8% to 70% in 2023.

[375] The i Paper, 'Water bill increase needed to fix sewage crisis, says minister', Welsh Government, 'Written Statement: Welsh government on Price Review determination'

[376] Ofwat data provided directly to the Independent Commission. The data is provisional. The South West Water average bill reflects a £50 contribution from Government to households' bills.

Lack of water metering

291. **While most customers view metering as the fairest way of charging for water, there are barriers hindering their wider use.** In the UK government's consultation in 2019 on water conservation, the majority of respondents strongly agreed that people should pay for water according to how much they used.[377] In 2023-24, 63% of households across England and Wales had either standard or smart water meters, however there is a significant difference across the regions.[378] While more than 80% of Southern, Anglian, South-West, and South-East Water customers have water meters installed, this falls to 50% of Dŵr Cymru Welsh Water customers and less than 50% of Northumbrian, United Utilities, Portsmouth, and South Staffs Water customers. This could be linked to limited awareness of metering schemes. 66% of non-metered customers are unaware that water meters can be fitted free of charge, with only 26% aware that a water meter can be trialled.[379] For some properties, such as flats, there can be challenges in installing meters. Water companies in England are also currently only allowed to introduce compulsory metering in areas deemed by the Secretary of State to be under serious water stress.

Areas where the Commission is seeking views

292. The Commission is seeking views on stakeholder proposals to ensure bill acceptability, across the following 3 areas:

- Improved transparency for customers by better explaining how money from bills are used by water companies and how bills are set.
- Increased use of smart meters to help customers better understand their water usage and improve water efficiency.
- Exploring innovative water charging to support affordability and/or efficient use of water.

293. We encourage readers to respond to our questions on these topics via Defra's online consultation tool, Citizen Space. The questions on Citizen Space are also included at Annex A: Call for Evidence questions.

Improved transparency

294. **The Commission is seeking views on whether, and if so what, changes are needed to improve transparency for customers on water company bills, and if these may help to improve trust**. For example, all water bills could show how much of each payment is used for various functions of the water company, what projects are being delivered and how bills are set.

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[377] Defra, 'Consultation on measures to reduce personal water use'
[378] CCW, 'Water Mark 2024'
[379] CCW, 'Water Matters 2024'

Increased use of smart meters

295. **The Commission has heard that increased use of smart water meters could help customers better understand their water usage and improve water efficiency**. The data from smart water meters can be used to reduce household usage by giving customers access to their data, alongside advice to help them manage their consumption and be more in control of their bills.[380]

Innovative water charging

296. **The Commission is interested in whether water charging could be done differently to support affordability and efficient use of water**. Five companies (South West Water, Affinity, Anglian, South Staffs and United Utilities) are running trials in 2024-25 to explore different ways of structuring charges that may encourage efficient use of water and/or help make bills more affordable for some customers.[381] One example is Affinity Water's trial using a 'rising block' tariff structure, where a different price will apply to the first, middle and end 'block' of consumption. Affinity state that 2 out of 3 households will pay less if usage remains unchanged. All companies expect to trial new charging structures by 2030 and some plan to introduce them more widely across their customer base if proven successful.

[380] Ofwat, 'Learning from Experience: what the rollout of smart metering in energy can teach us about smart metering in water'
[381] Ofwat 'Charging trial'

Customer protections

Background

297. **Ofwat's Price Review is the primary mechanism for protecting customers by preventing them from being overcharged** (as covered at the beginning of this chapter). In addition to overall affordability, there are other customer concerns and challenges such as the ongoing provision of good service and bespoke support for vulnerable customers.

Service quality

298. **Protections exist to ensure that customers receive a reliable and good quality service.** Providing an uninterrupted service is the key expectation customers have of water companies. A limited water supply has an immediate impact on customers, and tolerance is far lower than for the loss of power, heating or internet.[382] Research carried out for CCW showed that should there be interruptions in supply, there is an expectation that communication is clear, and the problem is fixed quickly.[383] The research also identified secondary expectations: to respect customers, including billing fairly and correctly, to be contactable, and to take responsibility for the area they operate in.

299. **The Guaranteed Standards Scheme (GSS) sets out the minimum standards of service customers can expect from water companies in England and Wales**.[384] These standards, as set out by Secretary of State and the Welsh ministers, cover service provision, such as restoring an interruption to supply, as well as customer service, such as responding to account queries. Should these standards not be met, companies are required to provide payments back to customers. Ofwat monitors the GSS and recommends any changes necessary to the UK and Welsh governments.

300. **In addition, Ofwat encourages good service provision through incentives.** As covered earlier in this chapter, Ofwat financially rewards and penalises companies for meeting or missing certain targets. At Price Review 2019, Ofwat introduced a specific ODI for customer service (C-Mex). C-Mex comprises of two surveys – one of residential customers who have recently contacted their water company and who are asked about that recent contact, and a second of random members of the public in relation to their experience of their water company. In both surveys, customers are asked how satisfied they are with the service provided and how likely they would be to recommend the water company to family or friends. Companies receive a C-Mex score based on the satisfaction ratings given by customers in monthly surveys covering complaints handling, and general experience of service. Companies can receive outperformance payments, or incur underperformance penalties, based on how they score compared to other companies. Some water companies have raised issues regarding significant penalties for metrics that they have little control over. In particular,

[382] CCW, 'Customer views on Guaranteed Standards Scheme'
[383] CCW, 'Customer views on Guaranteed Standards Scheme'
[384] Ofwat, 'GSS summary of standards and conditions'

the general perception of the company from a random sample of customers is likely to be impacted by broader trends in sectoral performance. We understand some changes have been introduced to C-Mex at Price Review 24.[385]

301. **In 2024, Ofwat also introduced a new customer-focused licence condition in all water companies' licences.**[386] This licence condition is new and Ofwat has not taken any enforcement action to date. Its objectives are to ensure that customers are well informed; when something goes wrong, affected customers have confidence their company will put it right, and the full diversity of customers' needs are identified, understood, and met by the company in the services and extra help they provide.

Box 11: Consumer Council for Water

The Consumer Council for Water was established in 2005 to be the independent voice for water consumers in England and Wales. Their powers are derived from the Water Industry Act 1991 and the Water Act 2014. They provide free help and advice to customers, including support for customers who have not been able to resolve a complaint against their water company. They must have regard to the interests of vulnerable customers, such as individuals who are disabled or chronically sick, of pensionable age, and those with low incomes. Their work is informed by research, which they use to champion the interests of consumers and influence water companies, governments and regulators. CCW has the power to investigate a water company for any matter related to the interest of consumers and can submit a report to Secretary of State and Welsh ministers and/or publish their findings. They have no power of enforcement.

Disadvantaged and vulnerable consumers

302. **A wide range of people may require financial or practical support from their water companies.** This could include households with people of pensionable age, someone who is pregnant or has young children, people with a mental health condition or a disabled person, people that have difficulty in communicating, and those on low incomes.

303. **Water companies in England have made a commitment to make bills affordable for all households by 2030 and develop a strategy to eliminate water poverty**.[387] The industry defines households living in 'water poverty' as those who spend more than 5% of their net income (after housing costs) on water. For those customers who find their water unaffordable, the impacts can include: falling into debt, with the associated stress and broader impacts, making sacrifices to living standards in other areas in order to be able to pay their bill, with consequential impacts on wellbeing, and for those with metered bills, reducing their use of water below that which they need to maintain safe and healthy living standards.

[385] PR24_final_methodology_Appendix_8_Outcome_delivery_incentives.pdf
[386] Ofwat, 'Guidance Register: Customer-focused licence condition'
[387] Water Uk, 'Public Interest Commitment'

304. **Water companies offer statutory and voluntary schemes to support customers.** Schemes offered include social tariffs for low-income households, and WaterSure which is targeted at low-income households who require high levels of water use, because of a medical need or because there are 3 or more children in the home. Water companies offer social tariffs on a voluntary basis, while WaterSure is a statutory scheme in England and voluntary in Wales. Ofwat's 'Paying Fair Guidelines' provide key principles and expectations for water companies in supporting customers who are finding it difficult to pay their bills and for those who are already in debt.[388]

305. **In January 2025, CCW published a review of WaterSure.**[389] The review recommended: introducing an extra bill cap for single occupier households with a medical condition which required greater water use; increasing the list of households in receipt of certain benefits who can qualify for WaterSure to cover some non-means tested disability benefits; and capping claimants' bills at the level of the company's average metered bill, in cases where it is lower than a company's overall average bill. Making the scheme statutory in Wales, along with bolstering awareness of the scheme were also identified as priorities.

306. **Water companies are also required to maintain a Priority Services Register (PSR).** Each company offers practical support for customers on this register, including bottled water during supply interruptions, translation services, and letters in braille. In addition, Ofwat publish 'Service for all vulnerability guidance' that sets out minimum service expectations for water companies in supporting vulnerable customers.[390] Ofwat launched a consultation on improvements to PSR standards on 7th November 2024.[391]

Current issues

307. The Commission has heard 2 broad issues in relation to customer protections:

- Concerns around service quality
- Challenges for disadvantaged and vulnerable customers

Concerns around service quality

308. **There has been an increasing number of customer complaints to water companies about basic service provision.** 222,956 customer complaints were made to water companies in England and Wales in 2023-24, 10% higher than the previous year. The total number of stage 2 complaints (where the water company did not resolve the issue the first time) were over 18,594, an increase of 20% on the previous year.[392]

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[388] Ofwat, 'Paying fair guidelines'
[389] CCW, 'Blueprint for WaterSure reforms to bolster water bill support'
[390] Ofwat, 'Service for all vulnerability guidance'
[391] Ofwat, 'Priority services registers - a consultation on standards'
[392] CCW, 'Review of household customer complaint handling'

309. **Despite increasing complaints, customers' awareness of the GSS is very low.** CCW research in 2023 found that customers felt it was right that water companies have standards they have to meet, particularly because of the vital nature of water and the absence of choice in their water supplier. However, almost all customers involved in the research were surprised to hear about the GSS with some questioning whether water companies were deliberately not publicising the scheme. CCW believe that increasing awareness of the standards could have a positive reputational impact.[393] The UK government has updated the scheme, with enhanced standards to be introduced in England in 2025.[394] The Welsh government has indicated that it will pursue amendments in due course.

310. **C-Mex ODI does not appear to have driven improvements in customer satisfaction, which could reflect issues with the C-Mex metric or broader public dissatisfaction with water company performance**. Industry average C-Mex scores have been declining each year since they were introduced, with low performing companies continuing to perform poorly.[395] The 6 companies that scored the lowest in 2023-24 have been in the bottom 6 in each of the 4 years since the measure was introduced.[396] Equally, the 3 companies with the highest scores in 2023-24 have been in the top 3 for each of the last 4 years, although their overall scores have fallen during this time.[397] The lack of improvement by individual companies and the industry as a whole appears to indicate that C-Mex is not driving improvement in customer service or experience. This could reflect the general public dissatisfaction with the water industry's performance in recent years.

Table 2: Industry average C-Mex scores, 2020-21 to 2023-24

	2020-21	2021-22	2022-23	2023-24
C-Mex scores	81.62	79.60	78.14	75.74

Source: Ofwat [398]

311. **While CCW has the power to investigate a water company for any matter related to the interest of consumers, they have no powers of enforcement**. As the regulator for the sector, Ofwat is the body who would carry out enforcement. Currently, there is no lever to compel Ofwat to take enforcement action based on the findings of a CCW investigation.

[393] CCW, 'Customer views on Guaranteed Standards Scheme'
[394] Defra, 'Summary of responses and government response'
[395] Ofwat, 'Accent Report for Ofwat: C-Mex and D-Mex Year 4, September 2024'
[396] Water Companies with the lowest C-Mex Scores since 2020: Thames Water, Southern Water, South East Water, SES Water, South West Water, Affinity Water. 'Accent Report for Ofwat: C-Mex and D-Mex Year 4, September 2024'
[397] Water Companies with the highest C-Mex Scores since 2020: Portsmouth Water, Wessex Water, Northumbrian Water. 'Accent Report for Ofwat: C-Mex and D-Mex Year 4, September 2024'
[398] Ofwat, 'Accent Report for Ofwat: C-Mex and D-Mex'

Challenges for disadvantaged and vulnerable customers

312. **The number of households in water poverty has been increasing.** The number of households in water poverty in England and Wales was 1.5 million in 2019-20 and CEPA expect this has increased in recent years.[399] Furthermore, 1 in 5 bill payers report that they are struggling with their water bill. Those who were most likely to be struggling were those aged 18-34 (73%), tenants (72%) and those with children under 18 in the home (70%).[400]

313. **As of March 2024, just over 2.5 million household customers were in payment arrears.** The average amount owed to water companies is approximately £822 per household in arrears, amounting to a total debt of £2.1 billion. [401] The percentage of customers in debt and the amount owed varies between companies. For example, approximately 11% of Thames Water customers were in debt, compared with just over 3% of Yorkshire Water customers, while the average customer debt owed to Welsh Water was approximately £1,400, compared with an average of just under £600 owed to Severn Trent. Analysis carried out by PwC for Ofwat showed that the level of deprivation in each water company region has a significant impact on the levels of debt, as did the average bill size.[402]

314. **Water companies' social tariffs operate with differing levels of support and eligibility criteria, which may be reducing effectiveness**. Approximately 1.6 million low-income customers are signed up to social tariff schemes, receiving over £250 million of support in 2023-24. While the average bill reduction across the industry is £160, this varies significantly across companies. For example, while Yorkshire Water customers received an average reduction of £228 in 2023-24, Southern Water customers' bill reduction was an average of £110.[403] One potential reason why there may be significant differences between regions is that companies are required by Department for Environment, Food and Rural Affairs (Defra) and Welsh ministers respectively to assess their customers' 'willingness to pay' when determining how much of their customers' bills they can use to cross-subsidise social tariffs.[404] As cross-subsidies are limited to within water company boundaries, this can limit the amount of money available to support vulnerable customers. In other sectors, such as energy and broadband, social tariffs are not reliant on the acceptability of other billpayers.

315. **The CCW estimate that 2 million customers may not be getting the financial support that they are entitled to due to low awareness and other potential barriers**.[405] The awareness among customers of financial support schemes has

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[399] CEPA, 'Quantitative analysis of water poverty in England and Wales'; Using the definition of water poverty that refers to where a household's bill makes up over 5% of their disposable income after housing costs; https://www.cepa.co.uk/images/uploads/documents/CEPA_What_Is_Water_Poverty.pdf
[400] Ofwat, 'Cost of living wave five report'
[401] Ofwat, 'Analysis of household customer debt'
[402] PwC, 'PwC Retail Services Efficiency Review'
[403] CCW, Water Mark 2024
[404] 'Flood and Water Management Act 2010, Section 44'
[405] CCW, 'Households urged to tap into water company support'

improved, up from 37% in 2022, to 45% in 2023 but could be improved further.[406] In addition to awareness, CCW have identified other barriers to accessing support, including mental and emotional barriers (such as coming to terms with the need to ask for financial help), lack of trust in large organisations, the complexity of the application, and literacy and language skills.[407]

316. **There is also variation between companies in the numbers receiving support from schemes.** For example, while 1.2% of all customers in England and Wales are registered on WaterSure, only 0.7% of Thames Water customers are registered, compared with 2.4% for South West Water.[408] Similarly, for PSR, some companies had a higher percentage of customers registered than others. For example, in 2023-24 7.4% of Thames Water households were registered, compared with 12.4% of Anglian Water households.[409]

Areas where the Commission is seeking views

317. The Commission is seeking views on stakeholder proposals in relation to service provision and vulnerable customers, across the following 4 areas:

- The introduction of a single social tariff
- A more proactive approach by water companies in identifying eligible customers
- CCW's powers
- Greater accountability for water companies over customer complaints

318. We encourage readers to respond to our questions on these topics via Defra's online consultation tool, Citizen Space. The questions on Citizen Space are also included at Annex A: Call for Evidence questions.

The introduction of a single social tariff

319. **A single social tariff for England and Wales is seen by some as a way to provide fair, consistent and sustainable support for customers who struggle to afford their water bill**. CCW's independent review of water affordability, for example, recommended creating a single social tariff to address the inconsistency in support that currently exists.[410]

A more proactive approach by water companies in identifying eligible customers

320. **Some stakeholders have argued that water companies should proactively offer support to customers who may be eligible.** Better sharing of data between government departments and water companies, or improved use of commercially available data, could potentially help companies to identify eligible customers.

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[406] CCW, 'Water Matters 2024'
[407] CCW, 'Independent review of water affordability'
[408] CCW, 'Water Mark 2024'
[409] As reported by CCW. CCW, 'Water Mark 2024'
[410] CCW, 'Single social tariff research'

CCW's powers

321. **Action could be taken to ensure that customer matters are investigated and, where necessary, enforcement action taken, to incentivise water companies to improve their service provision**. In the Commission's initial engagement with CCW, they have indicated they would welcome exploration of options to strengthen their legal powers (for example such that Ofwat should be required to formally consider and respond to advice). The Commission would also welcome views on the general effectiveness of CCW in championing consumer interests.

Greater accountability for water companies over customer complaints

322. **Greater accountability for water companies' handling of complaints could drive an improved experience for customers.** Since 2023, CCW have been trialling complaints assessments of water companies.[411] These involve teams from CCW spending 2 days with a water company's customer service team and carrying out thorough assessments of a random selection of customer complaints. CCW will publish the results of the assessments from April 2025.

[411] CCW, 'Review of household customer complaint handling'

Financial resilience

Background

323. **A range of factors influence water company financial resilience.** Financial resilience is the ability for companies to weather shocks to capital structure (the balance of debt and equity), revenue, spending and liquidity. A number of companies have taken decisions – including about levels of debt – which appear to have left them financially exposed. These issues have coincided with increasing inflationary costs following Covid-19 and Russia's invasion of Ukraine, as well as increasing penalties, to create acute financial challenges for some companies.[412] Ofwat has updated its approach to respond to these issues. However, there is a question whether they have gone far enough, and whether political pressure from previous governments, including to keep bills low, has exacerbated the situation.[413]

Historical decisions about debt

324. **There is a perception among some commentators that the increase in debt has been a bad outcome.** However, debt has an important part to play in financing company investment. This means that some level of debt allows water companies to spread investment costs over time. Without debt, costs would need to be funded up-front from customer bills, which would require significant bill increases as water company costs typically exceed in-period revenues. Companies can and do raise equity to finance investment, rather than raising debt, but equity is typically more expensive than debt so solely relying on equity may be inefficient. Debt and equity both enable water companies to build necessary infrastructure now and pay off the costs over time in a relatively cost-efficient manner, but it is customers who pay for investment.[414]

325. **At the point of privatisation, companies had no debt**. This was to ensure the sector was attractive to investment, and to support infrastructure upgrades. As expected, debt levels then increased. As covered in *Chapter 1*, in 1989 the government wrote off existing water company debt, injected additional cash, and gave a capital tax allowance.[415] Since companies need debt to finance infrastructure, they then, as expected, increased debt levels over the 1990s and 2000s. Between 1991 and 2009 water companies' average gearing ratio increased from 4% to 72%. Debt levels then stabilised through the 2010s, and the industry average gearing was 70% in 2024.[416]

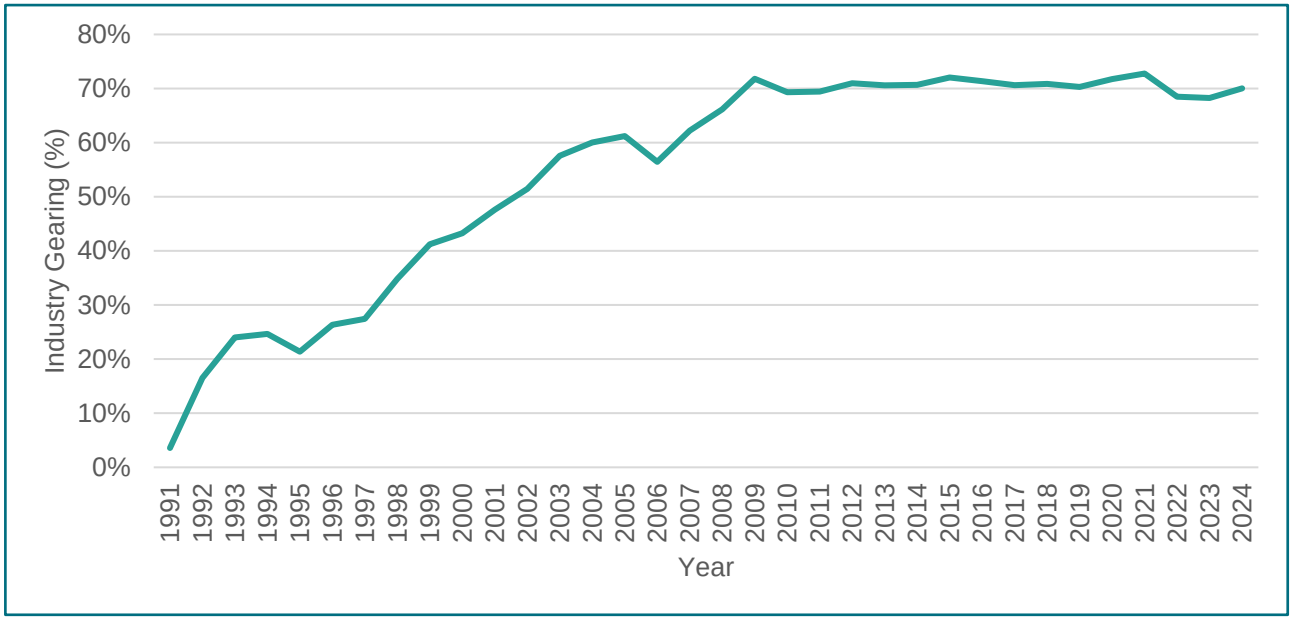
326. **While debt is not necessarily bad, high levels of debt can increase risks to a company's finances.** Unlike equity, companies must (except in certain

[412] Investor engagement with the Commission
[413] Former Environment Secretary Michael Gove set out in 2018 that he would give Ofwat 'whatever powers are necessary, and back them in any they need to take, to get the water companies, all of them, to up their game and further lower consumer bills'. A water industry that works for everyone - GOV.UK.
[414] Ofwat, Returns and Dividends
[415] The Development of the Water Industry in England and Wales, Ofwat and Defra, 2006
[416] Gearing is a way of expressing debt as a ratio of the regulated equity in a company. A full definition is provided in the glossary. Figures are calculated by dividing industry net debt by regulatory capital value. Based on English and Welsh, WASC and WOC data provided by Ofwat.

circumstances) meet interest payments on debt. This means that as debt levels rise relative to equity, other things being equal, the risk of defaulting on debt also rises.

327. **Some companies have pursued particularly high levels of debt.** These companies typically also had particular types of ownership structures in place. Several companies increased debt above average levels, including Anglian (around 90% gearing in the late 2000s), Southern (95% gearing in the later 2000s) and Thames Water (gearing over 80% for most of the last decade).[417] These companies also had similar ownership structures to each other. All are non-listed and these companies also adopted Whole Business Securitisation (WBS) structures – this is where a separate holding company is established to issue debt, with the regulated company making 'dividend' payments to this company to pay down its debt. In some cases there are multiple holding companies with debt held at different levels within the structure. More detail on WBS, private listing, and types of investors is provided in *Chapter 6*. Although the Commission has observed some common features of these water companies, the small number of water companies in general makes it difficult to establish direct causal links between decisions taken and outcomes.

Figure 19: Evolution of gearing since privatisation, England & Wales, WASCs & WOCs, 1991 to 2024, %



Source: Ofwat[418]

328. **High debt levels appear to have left at least some companies more financially exposed.** Both Thames and Southern have experienced widely publicised financial issues in recent years. Moody's downgraded Thames Water's credit rating to Caa3 in January 2025 and downgraded Southern Water's rating to Ba1 in November 2024.[419,]

[417] Data provided by Ofwat.
[418] Ofwat data shared with the Independent Commission. Calculated as industry net debt divided by regulatory capital value.
[419] Credit rating agency report - Moody's January 2025

[420] Ofwat's CEO David Black has been clear in communications on Thames that these challenges are partly driven by the company carrying 'too much debt'.[421] This has been echoed by rating agency reports, which have indicated that Thames's rating is constrained by its debt burden.[422]

329. **Some companies have taken active decisions to reduce debt levels by retaining profits or putting more equity into the company.** In contrast to Thames Water, Anglian Water, despite having a similar structure, appears to have pursued a proactive strategy of reducing gearing at the regulated company in recent years to increase resilience.[423] Dŵr Cymru Welsh Water also adopted WBS in the 2000s, and its gearing ratio was 89% in 2002, following the debt-funded takeover by Glas Cymru in 2001.[424] This was the highest gearing ratio in the sector by some distance, other companies increased their gearing shortly afterwards.[425] However, because of its not-for-profit model, Dŵr Cymru Welsh Water's dividend policy states that "all financial surpluses are reinvested for the benefit of our customers".[426] In 2024 their gearing ratio was 61%.[427] More detail on Dŵr Cymru Welsh Water's not-for-profit model is provided in *Chapter 6*.

330. **Companies should clearly be held accountable for financial mismanagement, but unpicking who is responsible today is challenging**. Some of the shareholders from the period during which companies undertook complex financial engineering and increased their debt have now sold shares to others.

Box 12: Was company debt used to pay dividends for shareholders instead of improvements for customers?

Some commentators have alleged debt has been used to fund excessive dividends. One commentator has argued that net cash generated from water company operations has typically been sufficient to cover capital investment without the need to issue debt.[428] Some commentators have also alleged debt has been used to pay excessive dividends.[429]

However, other stakeholders have maintained that debt is a normal part of the way that the water industry is financed.[430] They highlight that when equity investors originally purchased water company shares in the 1990s they inherited companies with minimal debt. In a given period, however, water companies need pay for the cost of infrastructure investment up front by borrowing and then pay off costs over time from bills. This enables the cost of investment to be spread across future generations. Following

[420] Ratings.Moodys.com/ratings-news/432573
[421] Thames, debt and water sector finance - Ofwat
[422] Moody's rating agency report - October 2024
[423] Ofwat Monitoring Financial Resilience Report 2023-24
[424] Evidence from Dr Kate Bayliss to EFRA committee
[425] Based on Ofwat data provided to the Independent Commission
[426] Dividend Policy | Dŵr Cymru Welsh Water
[427] Based on Ofwat data provided to the Independent Commission
[428] Evidence from Stanley Root to Environmental Audit Committee
[429] The Affluent and the Effluent , Water Companies: Regulation and Financial Stability - Hansard - UK Parliament,
[430] Engagement with the Commission

privatisation, companies, as expected, opted to increase debt levels. For example, between 1990-1991 and 2000-01, debt levels in the sector increased from around £1 billion (4% gearing) to £27 billion (48% gearing). A significant level of capital investment was delivered during this first decade: around £65 billion.[431]

The evidence on whether dividend levels have been excessive is complex. Ofwat reports dividend yields as a proportion of regulated equity (that is RCV minus regulated company debt).[432] According to this data (see Figure 20), dividend yields in the water industry averaged around 12% in the 1990s. This was close to the risk-free rate in the early 1990s (the Bank of England base rate was between 12-14% when the water industry was privatised in the years immediately following, and then between 5-7% by the end of the 1990s). Dividend yields then declined sharply in the early 2000s, falling to around 5% in 2003. Dividend yields increased again over the late 2000s and 2010s, with peaks in 2007 (19%), 2009 (17%), and 2018 (15%).

Some commentators have claimed dividends have been excessive.[433] There does appear to be evidence that some companies may have made above average dividend payments at certain points, as shown in Figure 20. For example, in the 2000s, a number of companies issued 'special dividends' as a way of reducing equity in water companies and increasing gearing.[434] In some cases these dividends were paid following the sale of company assets. For example, in 2002 Pennon paid a special dividend following the sale of Viridor Instrumentation and in 2006 Severn Trent paid a special dividend following the demerging of Biffa.[435]

However, it is uncertain whether dividend yields have in general been too high. Average company returns appear to be generally in line with Ofwat allowances. From Ofwat data, on average, between 2000 and 2024, the sector wide dividend yield amounted to 8.9%. This is higher than the real allowed return on equity set by Ofwat in its respective determinations, but about 0.5% lower than the nominal allowed return on equity.[436] Comparing dividend yields with other sectors is also challenging. Shareholder equity can be observed for the publicly listed companies (Severn, United Utilities, and Pennon) which enables some comparison. Dividend yields for these companies do appear to be higher than, for example, the FTSE all share index.[437] However, it is unclear what conclusions can be drawn from this. One would expect dividends to be somewhat higher than the FTSE all share index, since the water industry is typically perceived as an 'income' rather than 'growth' sector, with returns coming more from dividends than capital gains. These 3 companies also clearly only represent a snapshot of the broader sector.

In most periods, growth in RCV has exceeded the growth in debt. Since privatisation, debt had grown to £69.5 billion in 2024 from a base of close to zero. RCV has grown from

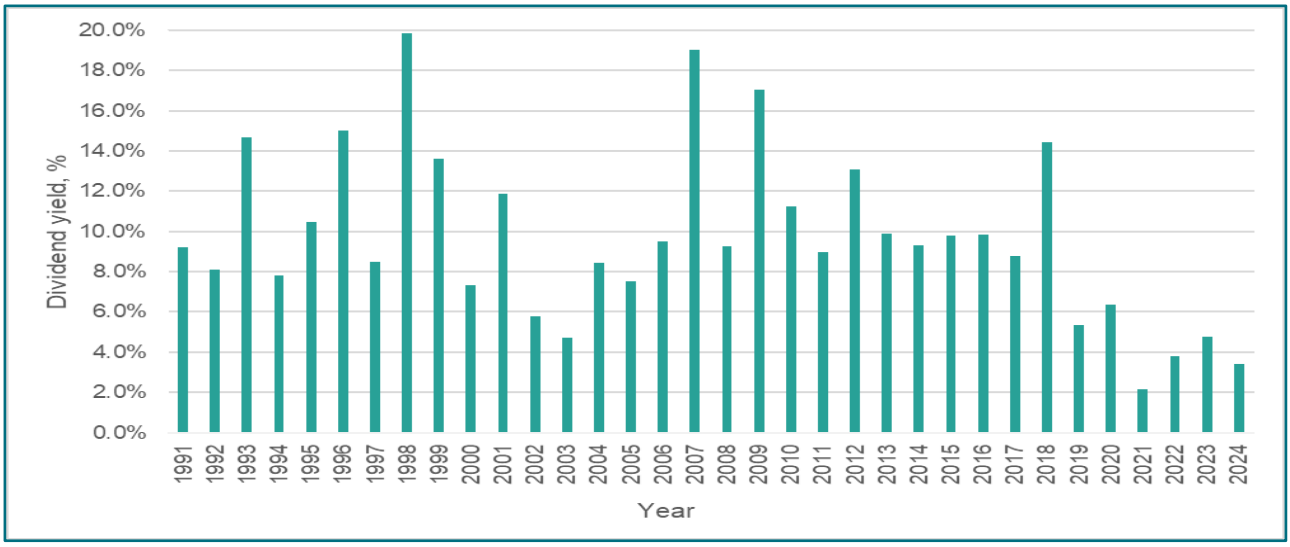
[431] 2022/23 prices. Long-term data series of company costs - Ofwat
[432] The dividend yield reflects the total dividend declared by the Appointee. This calculated dividend yield may differ from that reported by companies.
[433] The water industry is in crisis. Can it be fixed? - BBC News
[434] Ofwat, historic dividend data (excel workbook)
[435] Historical Information | Pennon Group PLC, Share capital history | Shareholder centre | Severn Trent Plc
[436] From Commission engagement with Ofwat
[437] From Commission engagement with Ofwat

£6.7 billion to £99.3 billion over the same period. Dividend payments have totalled around £52.8 billion since privatisation).[438]

For some companies, growth in debt levels has been materially above the growth during. There is one period (between 2000 and 2010) where growth in debt exceeded growth in the RCV at the sector level. The WASCs that saw debt grow faster than RCV over this period were Anglian (£1.2 billion), Southern (£1 billion), Thames (£0.5 billion), United Utilites (£0.2 billion), Yorkshire (£0.06 billion) and South West (£0.04 billion). These issues occurred predominantly in the period between 2000 and 2010. While this analysis does not definitively show that debt was used to finance dividend payments over RCV growth at the sector level, the Commission would be interested in further evidence to examine this issue in more detail.

Given the complexities involved in this topic, the Commission would welcome further expert evidence.

Figure 20: Dividend yield since privatisation, England & Wales, WASCs & WOCs, 1991 to 2024, %



Source: Independent Commission analysis[439]

Box 13: Regulating financial resilience through volatility – Ofgem

Ofgem is the UK's independent energy regulator. It regulates gas and electricity markets to support the delivery of a net-zero economy, ensure fair treatment of all consumers and enable competition and innovation.

Global volatility in energy markets from 2021 onwards led to 29 suppliers exiting the energy market. The large number of unplanned exits from the market required significant intervention from Ofgem to ensure that customers continued to be supplied. In

[438] Expressed in nominal terms. RCV and net data from Ofwat. Based on appointed dividends from Historic-dividends-since-privatisation.xlsx.

[439] Calculated using a consistent methodology with Ofwat's Monitoring Financial Resilience reports. Statutory dividends data from Returns and dividends - Ofwat had been used and unpublished Ofwat RCV and gearing data provided directly to the Independent Commission

almost all cases, Ofgem appointed alternative 'suppliers of last resort' to take on the customers of the failed supplier. The cost of this totalled £2.35 billion, equating to approximately £83 per household.[440] However, a 'supplier of last resort' could not be found for Bulb, so Ofgem was authorised to place Bulb under special administration. This enabled Ofgem to appoint special administrators to continue to supply energy to consumers, before identifying a buyer for the business (in this case, Octopus Energy).[441]

While the scale of wholesale price rises would have inevitably seen some failures, Ofgem recognised that it should have had tougher controls in place to ensure financial resilience.[442] Ofgem therefore implemented a number of reforms to increase the financial resilience of suppliers. These included:

- **An enhanced Financial Responsibility Principle:** all suppliers are required to evidence that they have sufficient business-specific capital and liquidity so that their liabilities can be met on an ongoing basis.
- **A minimum capital requirement:** from March 2025, all energy suppliers who supply energy to homes must have a minimum amount of financial buffer so that they are resilient to changes in the energy market.[443]
- **Enhanced milestone assessments:** enhancing the assessments that licensed energy companies must pass as they reach the 50,000 and 200,000 customer milestones for each of their relevant gas and electricity supply licences to ensure they have appropriate operational capacity, including financial resilience.[444]

Box 14: Ofwat's financial toolkit over time

Price Review

Ofwat's Price Review is a key lever for ensuring companies are attractive and resilient. As covered earlier in this chapter, Ofwat uses the Price Review to provide allowances for base, enhancement and the WACC, as well as to penalise and reward companies through the ODI mechanism. If allowances are set too low relative to spending needs, this can potentially undermine financial resilience or encourage risky behaviour. For example, the Commission has heard that Ofwat's decision at Price Review 1999 to reduce water bills by over 12% in 2000-01 may have driven revenue pressures at a number of companies.[445] Conversely, if allowances are generous, this may serve as a boon to company finances.

Ofwat has also used the Price Review to set expectations on levels of debt in the sector. As part of their WACC methodology Ofwat sets a 'notional' level of gearing.

[440] Ofgem consultation on the impact of supplier of last resort payments.
[441] Bulb SAR: post transfer facility - GOV.UK
[442] Ofgem decision on strengthening financial resilience, 5 April 2023
[443] Ofgem decision on strengthening financial resilience – minimum capital requirement and ringfencing by direction, 26 July 2023
[444] Decision on strengthening milestone assessments and additional reporting requirements
[445] Based industry average (weighted) PR99 Final Determinations (page 10)

Through the 1990s and 2000s, this notional level was lower than in Price Review 2019 (for example 50% in 1999).[446] Ofwat then increased the notional gearing level over time – peaking at 62.5% at Price Review 2014. At Price Review 2024, alongside reducing the notional gearing level to 55%, Ofwat has signalled more firmly that "gearing levels that exceed 70% are above the level that is consistent with the need for a water company to meet the requirement of maintaining long-term financial resilience".[447]

Financial monitoring

In the early privatisation period, Ofwat published annual financial performance and expenditure reports for water companies, but these were rolled back in 2009.[448] This may have been a response to the 2009 Cave review of competition and innovation in the water markets.[449] Although the Cave review does not appear to have made any explicit recommendations about financial monitoring, it was concerned overall with reducing regulatory burden – which Ofwat may have interpreted as a steer to reduce financial reporting.

In 2015, Ofwat reintroduced financial monitoring through the annual Financial Resilience report. This followed the Water Act 2014, which created a new resilience duty for Ofwat. Companies now report data annually on financial metrics, credit ratings, dividends, and other pressures on company finances. Ofwat analyses this information, categorises companies by performance, and publishes its findings.[450] As part of these reports, companies are expected to publish long-term (7-year) viability statements regarding their finances and stress test the assumptions made in these statements. Ofwat also engages with companies to understand their finances outside of annual reports.

Rules on risk and conduct

Ofwat has historically used company licence conditions to set requirements on company credit-worthiness. Water company licences contain a number of conditions which make up the 'regulatory ring-fence'.[451] These conditions are broad but, among other things, they require that regulated companies are not placed under pressure by other commitments that their parent companies may have. They also include the 'cash lock-up' condition which, among other things, requires companies to pause dividend payments to protect company finances if they do not hold 2 issuer credit ratings which are investment grade. Ofwat began to introduce the regulatory ring-fence to water company licences as some pursued mergers with other companies in the 1990s. It has gradually made the conditions universal and has strengthened them over time including recently by using its new power to unilaterally alter licences, introduced by the Environment Act 2021.[452]

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[446] PR94 Final Determinations, PR99 Final Determinations, PR04 Final Determinations, PR09 Final Determinations
[447] Ofwat, Price Review 2024 - Aligning Risk and Return
[448] National Archives - Ofwat Financial performance and expenditure reports
[449] Competition and innovation in the water markets (Cave review) - GOV.UK
[450] Monitoring financial resilience - Ofwat
[451] Licences and licensees - Ofwat
[452] Government supports new Ofwat powers to tackle water company dividends - GOV.UK, Returns and dividends - Ofwat

To secure good decision-making at water companies, Ofwat has at various times introduced measures to promote responsible governance and management. Previously, Ofwat has used various tools to secure good governance, including: Board Leadership, Transparency and Governance Principles and associated objectives in the licence, reporting requirements set through Regulatory Accounting Guidelines, and the cost recovery mechanism for performance-related executive pay. [453] The Water (Special Measures) Act 2025 will grant Ofwat further powers to set rules on remuneration and governance.[454] Ofwat will be granted the ability to set rules preventing bonus payments to senior managers under particular circumstances, to require that water companies assure that their senior managers meet defined standards of fitness and propriety, and to ensure customers are included in decision-making. Unlike changes to licence conditions, these new rules will not be subject to appeal to the CMA.

Special Administration Regime

The Special Administration Regime (SAR) is set out in the legislative framework for the sector as the backstop to protect customers. The water SAR has never been used. As part of the initial design of the privatised model, Ofwat was given the power to apply to the High Court to appoint a special administrator if the Secretary of State agrees (the SoS, or Welsh ministers in the case of a water company operating mainly in Wales can also make an application themselves). An application can be made on financial or performance grounds. Financial grounds include, for example, when the company is or is likely to be unable to pay its debts. Performance grounds include, for example, when a company is in such serious breach of its principal statutory duties or a regulatory enforcement order as to make it inappropriate for the company to continue to hold its licence.[455] The SAR is not intended to be a form of nationalisation, the temporary administrator is an independent appointee empowered to restructure the business if required before transferring it to new owners. Government may provide some (temporary, and reimbursable) financial support for the administration but will not normally become shareholders.

Special administration is distinct from other forms of insolvency regime as it is designed to secure the continuation of essential services while a failing business is recovered or transferred. In the case of the SAR used for the energy company Bulb, for example, customers were transferred automatically to an alternative provider without disruption to their supply. Though up-front costs to the taxpayer were high, almost all costs were recovered.[456]

[453] Ofwat Board leadership, transparency and governance principles January 2019; Ofwat Annual Performance Reports, Ofwat executive pay recover mechanism June 2023https://www.ofwat.gov.uk/wp-content/uploads/2023/03/Protecting-customer-interest-on-performance-related-executive-pay-%E2%80%93-recovery-mechanism-guidance.pdf
[454] Water (Special Measures) Act: Policy Statementhttps://www.gov.uk/government/publications/water-special-measures-bill-policy-statement/water-special-measures-bill-policy-statement
[455] Water Industry Act 1991
[456] Investigation into Bulb Energy (Summary)

Current issues

331. The Commission has heard 7 broad areas where issues appear in relation to financial resilience:

- Ofwat's changing approach
- The impact of Price Review decisions on company finances
- Potential perverse incentives around debt
- Gaps in financial monitoring
- Recent cost pressures
- The difficulty of turning around poor financial performance
- Limitations of the Special Administration Regime

Ofwat's changing approach

332. **For many years, Ofwat's view appears to have been that capital structures are for companies and the market to decide, and that it is companies and investors that bear the risk of failure if they can no longer afford to finance their operations**. In their 2007 paper on Thames Water's takeover by Kemble Water and subsequent securitisation, for example, Ofwat state that "our duties and powers relate to the licence holder, not its owners" and "we have been clear that capital structures are essentially a matter for companies and the markets".[457] This approach may have contributed to financial resilience challenges by allowing water companies to develop capital structures which have not proven to be resilient.

333. **Ofwat appear to have historically approved some company decisions which have led to financial resilience issues**. For example, as well as the consultation process which led to the approval of the takeover and securitisation of Thames Water in 2007, Ofwat also approved a capital restructuring of the company.[458] Company filing shows that this took the form of an intercompany loan from the regulated company to the holding company in excess of £1 billion.[459] This then supported a dividend payment from the holding company to its shareholders. By 2011, Ofwat had begun to observe that certain capital structures may leave companies exposed to cost shocks but maintained that this risk was borne by equity investors.[460]

334. **In recent years, Ofwat has significantly strengthened its approach to company finances, although there is a question as to whether this can be expected to address financial resilience weaknesses that are already embedded**. For example, after 2015, Ofwat reintroduced financial monitoring (after temporarily discontinuing this in 2010) and began to set stronger expectations on debt levels, as

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[457] Ofwat Position Note - Thames Water Restructuring Pages 3 and 5
[458] Thames Water's capital restructuring: A position note by Ofwat, 7 September 2006
[459] Declaration of assistance for shares acquisition, 12 June 2007
[460] Financeability and the asset base page 38

well as risk and conduct. However, many of these changes were introduced after financial resilience issues had begun to crystallise in the sector.

335. **It is important to note that the UK government also only granted Ofwat the power to introduce new licence conditions without the consent of water companies (including conditions which relate to financial resilience) in 2021 through the Environment Act**. It has used this to strengthen the 'cash lock-up' condition to prevent water company investors from drawing dividends under specific conditions relating to poor financial resilience. Previously, Ofwat did not have the powers and relied on water companies agreeing to have their licence conditions changed and may have had to offer concessions in order to secure agreements. Ofwat may be able to use this power in other ways to strengthen financial resilience, but it remains relatively new.

The impact of Price Review decisions on company finances

336. **The Commission has heard that Ofwat's Price Review process can be vulnerable to material under- and overestimations when setting allowances which, depending on their scale, can impact company finances in-period**.[461] As covered earlier in this chapter, stakeholders have expressed concerns that Ofwat has been too aggressive at pursuing price cuts, that allowed returns through the WACC have been too low, and that Ofwat's ODI mechanism has been challenging. The evidence for each of these assertions is complex and contested.

Incentives around debt

337. **The Commission has also heard the design of Ofwat's WACC could have incentivised companies to increase debt at too great a cost to overall financial resilience**.[462] Potential issues in relation to the WACC methodology have already been covered. Ofwat sets a single WACC which covers both debt and equity. Typically, the cost of debt is cheaper than the cost of equity. This means that the methodology may show bias towards debt over equity financing because the difference between the WACC and the true cost of capital can be taken as profit. It may therefore be efficient for companies to adopt a capital structure with a higher gearing ratio than Ofwat's notional level. In practice this may mean that whenever Ofwat increased their notional gearing levels, water companies took theirs even higher. This may be an inherent flaw with WACC methodologies across economic regulation.

338. **Ofwat has begun to set clearer expectations on gearing through the Price Review.** Ofwat has reduced the notional level of gearing in Price Review 2024 and has set a maximum expectation on gearing for the first time.[463] However, this limit is not set out explicitly in licence conditions or legislation, and a number of companies currently have gearing levels close to or above 70%, where expectations have been set.[464]

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[461] From Commission engagement with water company investors
[462] The cost of capital, the regulatory asset base and risk - Dieter Helm
[463] Price Review 2024-draft-determinations-Aligning-Risk-and-Return.pdf
[464] Ofwat Monitoring Financial Resilience Report 2023-24

Table 3: Changes in Ofwat notional WACC and gearing over time

	WACC (CPIH, real)	Cost of Equity	Cost of Debt	Gearing
Price Review 2009 (FD, 2009)*	5.62%	7.62%	4.11%	57.50%
Price Review 2014 (FD, 2014)*	4.55%	6.48%	3.39%	62.50%
Price Review 2019 (FD, 2019)	2.96%	4.19%	2.14%	60.00%
Price Review 2024 FDs	4.03%	5.10%	3.15%	55.00%

Source: Ofwat[465]

* Ofwat has recreated RPI and CPIH-real equivalent figures for controls that did not publish these numbers (Price Review 09 and Price Review 14). For example, WACC (gross of tax shield) is 5.1%, this is then adjusted for RPI and CPIH to make 5.62%

Gaps in financial monitoring

339. **Ofwat's decision to roll-back financial monitoring in 2009 may have contributed to a lack of awareness of financial issues in the sector**. The Commission has heard from some stakeholders that the government at the time may have encouraged Ofwat to take a light-touch approach as part of a general focus on deregulation.[466] Ofwat stopped publishing annual financial performance and expenditure reports for water companies in 2009 but they subsequently reintroduced financial monitoring in 2015. It is possible that this reduced Ofwat's awareness over some company financial engineering practices from 2009-2015. While decisions by some companies to adopt complex financial structures and high levels of gearing were made during the previous decade, this roll-back in monitoring appears to have come at a time when the consequences of these decisions began to bite.

340. **While the current Ofwat financial monitoring framework has now gone a significant way to addressing information asymmetries, there still appear to be questions about monitoring of water company finances**. Companies are now expected to publish long-term viability statements about their finances and stress test the assumptions made in these statements. However, stress-testing does not have to be directly assured by Ofwat, nor does Ofwat set stress-testing scenarios (like, for example, in the financial services sector).[467]

341. **Ofwat's reliance on credit ratings may limit its ability to identify internal weaknesses at companies early and do not account for their own influence on credit agency rating decisions**. The Ofwat cash lock-up conditions are dependent on the assessment of the major credit ratings agencies. These are a lagging indicator. They respond to what can be observed rather than what can be anticipated. Regulatory

[465] Data from: Ofwat, Ofwat, Ofwat, Ofwat
[466] Engagement with the Commission
[467] IN 19/07 - Expectations for companies in issuing long term viability statements - Ofwat

intervention to address financial resilience weaknesses may therefore be too late by the time that a credit rating is adjusted downwards. Furthermore, in their recent decision to downgrade the credit rating of the UK water industry, Moody's made reference to increasing regulatory complexity.[468] Water companies are now more likely to receive a lower credit rating, which may in turn lead to regulatory action. The Ofwat regulatory regime itself has a direct bearing on this and so this can create uncertainty about the core causes of financial resilience in a company.[469] As set out in Box 15, in the financial services sector, the regulators moved to a supervisory model of assurance, in part to reflect concerns about credit ratings and provide a more nuanced and less reactive view of company risk profiles.[470]

Recent cost pressures

342. **Historical decisions taken by companies about their gearing levels appear to have combined with recent inflationary pressures to undermine some companies' financial resilience**. The costs that companies are allowed by Ofwat to pass onto customers are linked to inflation. Ofwat uses CPIH as the measure of inflation. However, when inflation for specific costs exceed the more general CPIH measure, companies are exposed to additional cost pressures. Ofwat does include mechanisms to correct for this, but these have not been constant over time (for example, at Price Review 2019 Ofwat only corrected for labour costs whereas at Price Review 2024 Ofwat will correct for labour and energy costs). When inflation is high, companies may also be exposed to cash-flow issues. Companies have indicated to Ofwat that both of these issues have affected them in recent years, following rising input costs for power, chemicals and materials.[471] These increased costs could potentially have eroded companies' returns, increasing the likelihood of a default.

343. **Enforcement penalties, following non-compliance and operational underperformance, also appear to have exacerbated financial issues**. In their credit opinion explaining Thames Water's rating downgrade in October 2024, Moody's specifically cited a "track record of weak operating performance, which coupled with more demanding targets has led to increasing penalties, which we expect to continue into AMP8" as one of the reasons for their decision.[472] They also state that "public, political and regulatory scrutiny may deter existing and new investors from providing new equity".[473] This reticence has the practical effect of pushing up the cost of capital as investors will require greater returns to offset the greater risk of investment.

344. **Even where companies have invested to improve, an investment lag may have made it difficult to overcome penalties quickly.** The Commission has heard from water companies that investment made now may not result in improved outcomes for a number of years as infrastructure solutions take time to be built and become

[468] Moody's Assessment of Water Industry requires subscription
[469] Regulated Water Utilities | Rating Methodology | Moody's
[470] Whither the Credit Ratings Industry? | Bank of England
[471] Ofwat Monitoring Financial Resilience Report 2023-24
[472] Moody's rating agency report - October 2024
[473] Moody's rating agency report - October 2024

embedded.[474] The Commission has also heard that lengthy regulator investigations prolong uncertainty and risk, and create complications in attracting investment.[475]

The difficulty of turning around poor financial performance

345. **When companies do enter difficulty, the Commission has heard that they can become caught in a 'doom loop' and that Ofwat and other regulators do not place enough emphasis on company recovery**.[476] One example of this is in relation to enforcement action against companies. It is right that Ofwat and environmental regulators use their enforcement powers when companies have breached regulatory and legal requirements. The regulators have little discretion over this. However, it has been claimed that enforcement penalties can make it more challenging for firms to invest to meet required operational standards. It is also possible that high levels of debt may distract company leadership in these companies; servicing the debt, rather than driving performance, may become a company's top priority.[477]

Limitations of the Special Administration Regime

346. **While the SAR is intended to serve as a backstop if companies become insolvent, the extent to which it is viewed as a credible threat is unclear**. If the SAR were used, investors may be liable to lose a significant portion of their investment. At the same time, taxpayer funding may be required to cover the costs of special administration, although the UK government does now have powers to recover these costs through water companies, when it does not expect to recover them elsewhere.[478]

347. **The thresholds for SAR usage are high and untested**. The SAR is designed to be used only as a last resort, so this is to be expected. Similar regimes have been used in other sectors including rail and energy. However, other SAR regimes do not typically have a 'performance grounds' as a trigger for an application and are based only on insolvency. They also do not generally regulate monopoly sectors. Thresholds are likely to be high by design as the regime must be in line with wider insolvency law and other regulated sector SAR regimes, and too low a threshold could deter investors or violate their rights.

348. **Finally, there does not appear to be sufficient advanced planning for companies against the possibility of entering SAR**. In some other sectors, the regulators have powers to direct companies ahead of entering SAR. For example, in the financial services sector, the regulators are able to 'direct' companies to be ready for resolution. In contrast, government and Ofwat appear to have less robust tools of direction pre-SAR in the water sector.[479] This may also complicate SAR usage, as companies are not necessarily prepared ahead of entering the SAR. An appropriate resolution

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[474] From Commission engagement with water company investors
[475] From Commission engagement with water companies
[476] From Commission engagement with water company investors
[477] From Commission engagement with water companies
[478] Water (Special Measures) Act: policy statement - GOV.UK
[479] Water Industry Act 1991

mechanism may both support companies to avoid the need for SAR and ensure that disruption is limited should SAR be required.

Areas where the Commission is seeking views

349. The Commission is seeking views on changes that have been suggested to assure financial resilience, across the following 5 areas:

- Changes to the Price Review process to support financial resilience
- Changes to oversight of debt
- Changes to financial oversight, including a more 'supervisory' approach
- Ways the regulatory regime could support company turnaround
- Changes to the SAR

350. We encourage readers to respond to our questions on these topics via Defra's online consultation tool, Citizen Space. The questions on Citizen Space are also included at Annex A: Call for Evidence questions.

Changes to the Price Review process to support financial resilience

351. **The Commission is seeking views on whether changes are needed to Ofwat's Price Review processes to support improved financial resilience in the future**. A number of potential reforms to Ofwat's Price Review are listed earlier in this chapter.

Strengthened guidance on debt

352. **The Commission is seeking views on whether the regulatory approach to companies' debt levels is adequate**. A firm limit on gearing could support financial resilience, but could then restrict companies' ability to secure affordable and manageable debt when it is needed. As noted above, while Ofwat has at Price Review 2024 specified an upper boundary on gearing, this is not directly enforceable. The Commission is interested in whether this limit should be enforceable, as well as the potential risks associated with a gearing cap. The Commission is also interested in whether it would be appropriate to have different capital structure expectations for different water companies based on their risk contexts, this might be in the context of a supervisory regime.

353. **The Commission is also seeking views on whether it may be beneficial to explore changes to Ofwat's approach to setting a combined WACC**. As covered, the way Ofwat sets the WACC may provide companies with an incentive to increase gearing above the notional level. One potential option would therefore be to provide separate allowances for equity and debt. This could potentially discourage excessive gearing, but would depart from the standard approach to setting the cost of capital in other economically regulated sectors.

354. **As an alternative to an industry wide notional gearing level, companies could be required to maintain a defined level of equity proportional to the risk attached to their assets and liabilities**. The Commission would welcome evidence on the

possible impacts of this. An approach could be similar to the system of risk-weighted exposure used in financial services regulation. It would require a standardised risk assessment as part of a supervisory model under which the regulator would assign an equity risk proportion based on market factors.

Changes to financial oversight, including a more 'supervisory' approach

355. **The Commission is seeking views on whether financial oversight could be strengthened in the sector, potentially through a supervisory model**. While Ofwat has taken an increasingly interventionist approach to monitoring pressures and decisions in recent years, they do not have a formal supervisory regime (see Box 15). This could include, for example, more robust stress testing of company finances, or the appointment of supervisors who have more detailed understanding of a company's position. This may potentially reduce reliance on credit ratings, by providing Ofwat with an independent method of verifying company finances. However, the adoption of such a regime may be intrusive, and this would need to be balanced against potential benefits. The Commission is also interested in potential barriers to adoption, including regulatory expertise.

356. **Financial reporting requirements could also be strengthened**. While Ofwat's financial reporting requirements mean a certain amount of information is required to be made public, these apply only to the regulated entity, and complex corporate structures, including a range of holding companies, appear at times to obscure the true financial health of a company and payments it makes to shareholders and bondholders. The Commission is interested in hearing about options for improving transparency including through changes to governance and reporting requirements, for example, to more closely replicate reporting requirements of the listed companies.

Ways the regulatory regime could support company turnaround

357. **Given concerns around potential 'doom loops', the Commission is interested in whether the regulators should be given additional discretion, if at all, in their enforcement regime to support turnaround of failing firms**. It may be appropriate for Ofwat to be able to apply forbearance to penalties and other regulatory action where water companies have proposed recovery plans. This could make it easier for failing companies to recover.

358. **Similarly, the Commission would like to understand whether Ofwat should be given strengthened powers to direct water companies to spend penalty amounts in a particular way to address harms**. At present, Ofwat can give water companies a penalty, or insist that some money is returned to customers, but it first has to wait for a company to offer alternative spending commitments through representations (and is obliged to accept reasonable representations from water companies, even if it would like them to go further in addressing harms caused by their actions). Penalties could instead be ring-fenced by the regulator to ensure money is directed to where it is needed in addressing harms.

359. **The Commission has heard that, given the need to restore resilience at some companies and in light of changes in ownership, there could be some**

consideration of arrangements that would allow a quick resolution of historic issues. It has been argued that this could enable companies to reset baselines to reduce uncertainty and facilitate investment. This would require concessions by the company.

Changes to the SAR

360. **The Commission is seeking views on options to modify the SAR**. For example, the thresholds for SAR usage could be made more specific or clarified through guidance. Recent reforms have been brought to the SAR through the Water (Special Measures) Act 2025, to ensure that the full costs can be recovered from the industry in the event of a SAR and to bring the water sector SAR more in line with other sectors.[480] The Commission is seeking views on whether these reforms go far enough.

361. **Ofwat could be granted enhanced powers to support company planning against the possibility of a SAR – helping to ensure that companies are prepared for that eventuality should it be required**. It may be that the thresholds for SAR are appropriately high, but that another mechanism to allow regulators to intervene directly where water companies are entering difficulty would help offset these high thresholds. For example, financial services-style 'direction' powers could be carried across to the water industry, enabling Ofwat to direct companies to prepare for SAR. Ofwat could also be granted additional powers to monitor companies at risk of distress. The Commission is interested in the benefits and risks of these proposals, as well as obstacles to success. For example, strengthened direction powers may require Ofwat to have a deeper understanding of the risk companies carry.

Box 15: Supervisory regulation – the Prudential Regulation Authority (PRA)

The PRA was established in 2013 following the financial crisis. Prior to the financial crisis, UK financial services firms were regulated by the Financial Services Authority (FSA). Perceived failings by the FSA in the run-up to the financial crisis led to the establishment of 2 new regulators. The PRA is now responsible for promoting the safety and soundness of major financial institutions and insurers. The Financial Conduct Authority (FCA) is responsible for supporting consumers, ensuring markets function, and regulating for effective competition. It is important to note that neither the PRA nor FCA are economic regulators like Ofwat – meaning they do not regulate the revenues financial institutions receive.

The PRA has 2 primary objectives: a general objective to promote the safety and soundness of regulated firms, and an objective specific to insurance firms for the protection of policyholders. The PRA also has secondary objectives to facilitate growth and international competitiveness. The PRA must also coordinate with the FCA on the around 1,500 firms which are 'dual regulated' by them.

The PRA publishes threshold conditions that all firms of all sizes must meet, as part of their rules and guidance. The PRA's threshold conditions require firms to meet certain legal status requirements: to maintain head offices in the UK, to conduct their businesses in a prudent manner, to have 'fit and proper' senior managers and executives, and to be capable of being effectively supervised. Above the threshold conditions, different rules are

[480] Water (Special Measures) Bill [HL] - Parliamentary Bills - UK Parliament

applied to firms of different sizes, under the logic that the risks and impacts of failure are not universal for all firms. Policies are enforced against both the letter and the spirit of standards.

The PRA employs a supervisory model when assessing whether these conditions and rules are satisfied. This model is guided by 3 principles:

- **Judgement-based.** It accepts that at times the regulatory judgement may differ from that of firms even when drawn from the same evidence and analysis and following engagement. Strategies and judgements of supervisors are independently reviewed.
- **Forward looking.** It attempts to assess medium- and long-term risks as well as current risks. This supports resilience and allows for early mitigation.
- **Focused on key risks.** These risks are material and transparent. Risk assessments of individual firms will take into account size, complexity and mitigation

The PRA's supervisory model also features a number of core assurance activities:

- Applicants must demonstrate how they can meet the threshold conditions before authorisation is granted.
- Supervisors undertake regular engagement with boards and individual directors. Engagement is proportionate to the firm's risk profile and focusses on material risks.
- There are periodic data submissions. Data is validated.
- Information is gathered through annual reports and voluntary disclosures.
- Onsite inspections or in-depth reviews may be conducted where appropriate.
- The PRA may also require a skilled-persons report, a supervisory tool which appoints a skilled person to report on a firm's activity for diagnostic, monitoring, preventative, or remedial purposes. The PRA uses this tool routinely.

The PRA uses its supervisory framework to inform proactive intervention, in advance of risks crystallising. The PRA will take regulatory action early even where risks to viability are moderate. The regime is not punitive but the framework allows for the PRA to undertake more regular supervision, to require specific recovery actions, and to begin contingency planning for possible future failures. The PRA has enforcement powers which it uses if firms or individuals do not comply with standard or temporary requirements or rules.[481]

[481] The Prudential Regulation Authority's approach to banking supervision, The Prudential Regulation Authority's approach to insurance supervision

Investment

Background

362. **As covered in the previous section, water industry costs typically exceed revenues, so companies need debt and equity to finance investment**. As explained earlier, debt is typically cheaper than equity, so companies generally prefer to raise debt rather than equity. However, very high levels of debt can increase risks to a company's finances. Alongside issuing debt, therefore, companies also need to be able to attract equity investors.

363. **Over Price Review 2024, there will be a significant increase in required spending to £104 billion, of which £44 billion will be enhancement investment (see Table 4 below)**. Companies have forecast a need to raise more than £7 billion of equity in their business plans to finance this spending.[482] Ofwat considers that the equity financing requirement will be even higher and have estimated that £12.7 billion will be required when assessing the financeability of company plans.[483] At the same time, the amount of debt that water companies have forecast for the 2025-30 spending period is £45 billion to finance investment programmes and to refinance existing debt. This is 60% higher than was raised in 2020-25.[484] Further debt and equity raises will also be required beyond 2030.

364. **The water industry is a key contributor to growth**. The industry is a large primary and secondary employer with a nationally dispersed workforce. Delivering on needed water infrastructure also underpins key development in other industries including homebuilding and data processing. All of this will require the new investment outlined in water company business plans.

Table 4: Spending at final determination stage over Price Review periods in England & Wales, £ billion, 2022-23 prices

Price Review	Final determination total spending
Price Review 2009	£40.9 billion
Price Review 2014	£54.6 billion
Price Review 2019	£61.5 billion
Price Review 2024	£103.7 billion

Source: Ofwat[485]

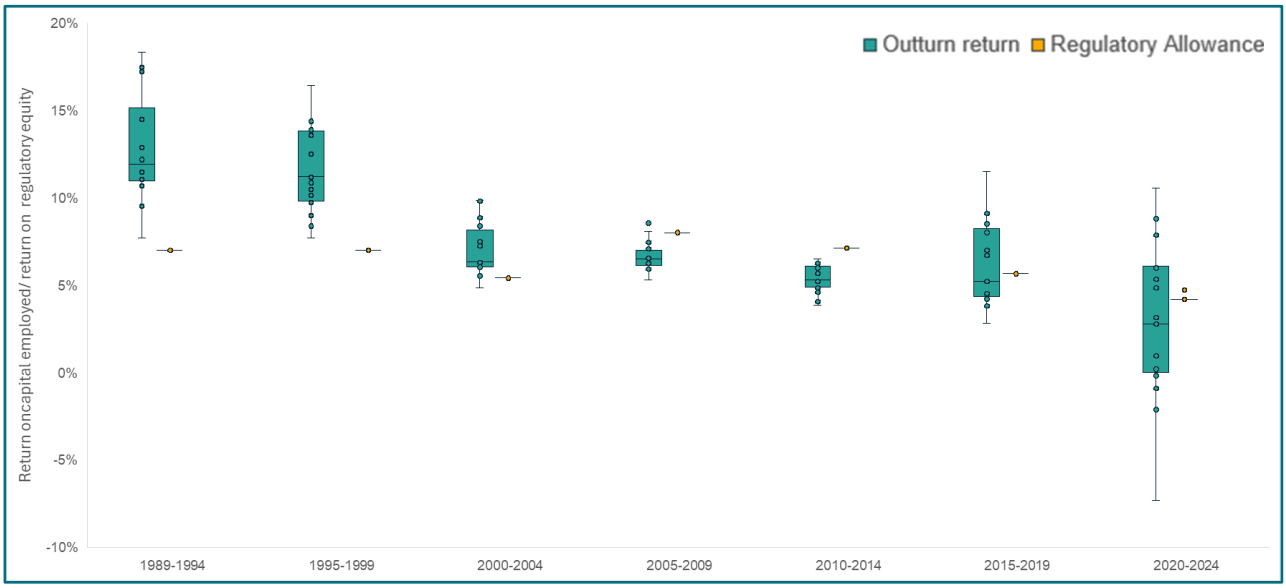
[482] Ofwat Price Review 2024: Aligning Risk and Return
[483] Ofwat approves £104 billion upgrade to accelerate delivery of cleaner rivers and seas and secure long-term drinking water supplies for customers - Ofwat
[484] PR24-final-determinations-Aligning-risk-and-return-1.pdf
[485] Converted into 2022/23 prices. What the 2024 price review means for water customers; Ofwat PR19 Final Determinations; Ofwat PR14 final determination: costs and revenues; Ofwat PR09 Final Determinations

365. **The attractiveness of the sector to investment is driven by the level and stability of returns investors can expect to get**. When companies issue debt, the principal loan and accompanying interest costs must be repaid over time through customer bills. When companies issue equity, equity holders do not receive interest payments, instead, they receive dividends. Equity holders can also sell their original shares and may profit from the sale ('capital gains'), for example, because the share value has risen with inflation or because the share value has increased in real terms thanks to investment made. The total return investors demand (across both dividends and capital gains) is a function of the riskiness of the investment relative to the wider market, as well as the rate investors could secure for zero risk (typically set at the rate of government bonds). For example, if perceived risks in the water industry increase, other things being equal, investors will demand higher returns. Similarly, if government bond yields fall, returns will fall.

366. **Investor returns appear to have declined steadily since privatisation**. Figure 21 shows that average returns for the sector, measured by return on capital employed between 1990 Return on Regulatory Equity (RORE), have declined from around 11.5% during 1989-1994, to around 2% during 2019-24.[486] The figure also shows that the spread between the best and the worst operational performers has become much larger and that the poorest performers are now seeing negative returns. The majority of water companies also notably appear to be receiving returns below the allowed returns set by Ofwat. This was also true during 2004-09 and 2009-14, but a tighter spread much closer to the allowed returns means that this was not a significant concern during a period of economic volatility and stagnation.

[486] There are a number of ways to measure returns. A definition of RORE is provided in the glossary.

Figure 21: Estimated return on capital employed/return on regulatory equity, since privatisation, England & Wales, WASCs & WOCs, %

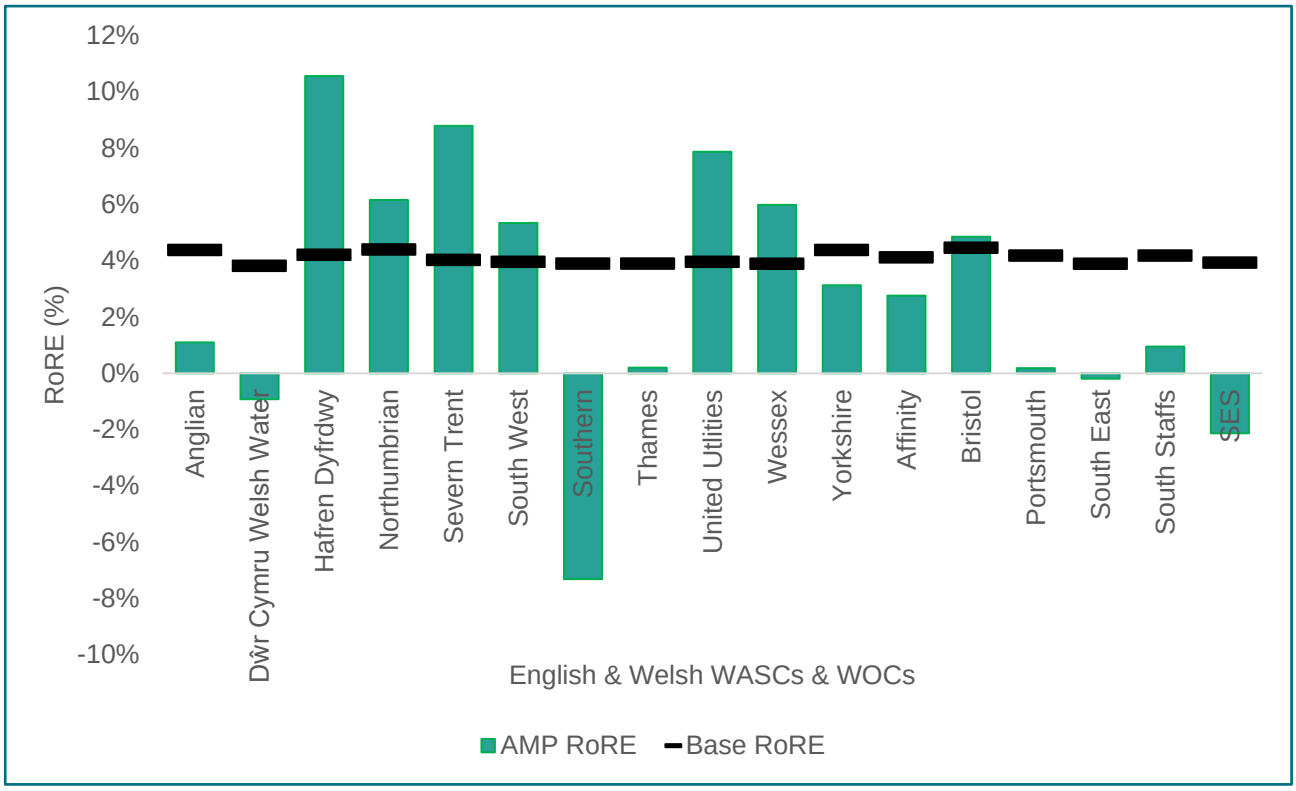


Source: Independent Commission analysis[487]

Note – Pre-2015 returns on capital employed were used instead of returns on regulated equity.

[487] Before 2015 this is based on return on capital employed values from Ofwat financial performance and expenditure of the water companies in England and Wales reports. After 2015 return on regulated equity from Ofwat's monitoring and financial resilience reports has been used. Note that these are different metrics and therefore are not directly comparable. Return on capital employed does not capture financing out or underperformance. The regulatory allowance shows the cost of equity allowance for each period going back to privatisation. Financial performance and expenditure, Ofwat :: Publications :: Financial performance, Historic performance - Ofwat, Monitoring financial resilience - Ofwat

Figure 22: Return on notional regulated equity (RoRE), England & Wales, WASCs & WOCs, in Price Review 2019 to date, %[488]



Source: Ofwat[489]

367. **In the Price Review 2019 period to date, 7 out of 17 companies have an estimated RoRE above the allowed base return set by Ofwat, as shown in Figure 22**. Ofwat notes that this largely been driven by financing outperformance. All of the remaining companies have recorded RoRE below the allowed base return and 4 companies (Dŵr Cymru Welsh Water, Southern, South East and SES) have reported negative RoRE over the first 4 years of the Price Review 2019 period.

368. **There appear to be a number of drivers for levels of returns in the sector, many linked to broader changes in the macroeconomy and political environment**. For example, Figure 21 shows that returns were higher than the allowed rate through the 1990s. This may have been to drive investment or because the price allowance methodology was new. In the early 2000s, returns declined, partly reflecting a decision by the government at the time to impose a windfall tax on utilities as well as a relatively large price cut by Ofwat.[490] Returns were then relatively stable but began declining again in the late 2010s and early 2020s. To some extent, this decline appears to reflect broader macroeconomic trends. For example, some commentators have pointed towards a decline in long-term nominal and real interest rates in advanced economies since the mid-1980s, and particularly low interest rates in the decade following the

[488] With base RoRE being the allowed return on equity set out by Ofwat in each company's final determination.
[489] Data from: Monitoring financial resilience - Ofwat
[490] The Windfall Tax - House of Commons Library, PR99 Final Determinations, Ofwat

financial crisis.[491] This would have the effect of lowering the cost of debt. As covered in the previous section, the Commission has heard that, more recently, increasing inflation and input costs also seem to have placed pressure on profits.[492]

369. **As already covered, Ofwat's decision-making and broader regulatory actions also appear to have influenced returns**. Ofwat has imposed cost challenges on companies, and penalised some companies and rewarded others. There has also been commentary on Ofwat's approach to the WACC, as covered at the beginning of this chapter. Each of these actions may have influenced the level and variance of returns.

Current issues

370. The Commission has heard 3 broad issues in relation to investment and growth:

- The level of returns in the water sector relative to other sectors
- The level of risk from investing in the water sector
- Challenges in attracting long-term stable investors
- Public perceptions about investor returns

The level of returns in the water sector relative to other sectors

371. **The risk of investing in the UK water sector is higher now than it has been in the past**. Investors have expressed concerns about levels of political and regulatory risk in the water sector to the Commission. Some stakeholders have indicated that the water industry is no longer seen as low risk because of sentiment, increased political action, greater focus on enforcement, and an increasingly complex regulatory framework.[493] This view has been shared by ratings agency Moody's who state that the outlook for the sector is negative, noting risks driven by negative public perception, political and regulatory focus on enforcement, weakening investor sentiment, and policy uncertainty.[494] The Commission accepts that it itself also contributes to policy uncertainty in the short-term and wishes to reset this uncertainty and return the sector to long-term stability and success.

372. **Through engagement with the Commission, investors have raised concerns about future returns in the sector and the level of investment that needs to be secured in the future**. While returns which are lower than in comparable sectors may be tolerable under some circumstances, they may be particularly challenging when a significant level of investment needs to be raised, as was the case in 1990 and as is the case again now.

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[491] On secular stagnation and low interest rates: demography matters
[492] From Commission engagement with water companies
[493] From Commission engagement with water company investors
[494] Moody's, Outlook: Regulated Water Utilities – UK, 14 October 2024

373. **The Commission has also heard that the water sector is not attractive relative to comparable international investments and other UK sectors**.[495] Investors indicated investment in UK electricity transmission and distribution networks offers higher and more stable returns than the water sector.[496] Data suggests that the actual RORE during the Price Review period to 2022-23 was 3.6% for water.[497] This compares to 7.5% for electricity transmission, 5.9% for gas distribution, and just over 4.2% for gas transmission in Ofgem's 2022-23 reporting period.[498]

374. **Comparing sectors is inherently challenging, given different risk profiles**. Utilities in the USA are typically subject to a different model of 'rate of return' regulation and there may also be other geographic and economic differences between the water industry and these comparators.[499] The Ofgem WACC for energy distribution in the current electricity distribution price control is 3.93%.[500] This appears to be comparable to what has been set by Ofwat at Price Review 2024, but does not account for the apparent investor view that the risk may be currently lower in energy.[501] At Price Review 2024, Ofwat has assumed a real return on equity of about 5.1%.[502] By comparison, Ofgem's electricity distribution price control from 2023-28 assumed a real return of equity of about 5.23%.[503]

Challenges in attracting long-term stable investors

375. **Increased perceptions of risk may be more likely to deter long-term investors, like pension funds, who are most likely to pursue stable, low-risk investments with modest returns**. The higher risk profile is more likely to attract shorter-term investors who are more comfortable with risk but expect higher returns and who are generally more likely to move on from the investment quickly. Reducing risk in the sector, and attracting longer-term investors with modest, stable returns may help secure public support for investment.

Public perceptions about investor returns

376. **While investors have raised concerns about low returns in the sector, the Commission has also heard from stakeholders who are concerned that returns are too high**. In initial engagement, for example, campaign groups highlighted their view that the current model has put the interests of investors over the public. Similarly, environmental groups have criticised the level of dividends paid despite environmental non-compliance.[504] As covered earlier, however, the question of whether dividends

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[495] Infrastructure Pulse Q2 2024.pdf page 7, From Commission engagement
[496] From Commission engagement with water company investors
[497] Based on simple average for 2022/23. Monitoring Financial Resilience Report 2022-23
[498] RIIO-2 Regulatory Performance Data File 2022-23 | Ofgem
[499] Water Regulation: Separate Regulatory Body with Licensing Regime Public Private Partnership
[500] Average for the five years ending 31 March 2028, CPIH real. Note that the notional gearing level assumed in this price control is different to that assumed by Ofwat at Price Review 2024. RIIO-ED2 Final Determinations Finance Annex
[501] From Commission engagement with water company investors
[502] Real, CPIH. PR24-final-determinations-Aligning-risk-and-return-1.pdf page 5fro
[503] Real CPIH. RIIO-ED2 Final Determinations Overview document page 29
[504] England's water companies

have been appropriate is complex and contested. Without a return for investors, finance for future investment is unlikely to be secured. At the same time, public support for bill increases now and in the future will be required to ensure investment can be funded.

Areas where the Commission is seeking views

377. The Commission is seeking views on possible changes to ensure returns balance risk and reward reasonably, across the following 2 areas:

- Changes to the Price Review Process to support investment
- New mechanisms to support and/or constrain returns

378. We encourage readers to respond to our questions on these topics via Defra's online consultation tool, Citizen Space. The questions on Citizen Space are also included at Annex A: Call for Evidence questions.

Changes to the Price Review process to support investment

379. **The Commission is seeking views on whether Ofwat's Price Review processes are adequate to support investment in the future and if not, what changes should be made**.

380. **The Commission is also seeking further evidence on returns relative to risk, including evidence on returns in other sectors, both internationally and in the UK**. Direct comparisons across sectors are inherently challenging as the relative risks of different sectors are not strictly quantifiable. Moreover, as may be the case with water, risk profiles may change over time. That said, investors operate in an international market for capital and these are judgements which they take. The Commission would like to understand the drivers behind these judgements, including rates of return in regulated sectors globally.

New mechanisms to support or constrain returns

381. **The Commission is also interested in views on whether changes are needed to underpin or constrain returns**. Ofwat already has tools to restrict dividend payments, assure dividend policies, and to enforce sharing of efficiency gains with customers. The commission is interested in hearing whether these tools are appropriate and the extent to which they support investment.

382. **More broadly, the Commission is interested in the role of public messaging on the level of returns and risk attached to the sector**. Ofwat runs the Price Review process independently from government. However, the Commission has heard that political rhetoric has sometimes contributed to a regulatory environment which has become unattractive for new investors.[505] At the same time, customers need to trust that money from bills is being spent responsibly in order that bills can be set at the

[505] From Commission Engagement with water company investors

required level to fund investment. The Commission is interested in the role that public messaging has to play in contributing to, and addressing, these problems.

Competition

Background

383. **Successive UK governments have used competition as a tool to solve challenges**. As covered earlier, water companies mostly operate as regional monopolies because water is heavy and difficult to move. To manage risks from a monopoly, Ofwat has attempted both to simulate and introduce competition. Ofwat runs a number of schemes for introducing competition. The 2009 Cave review was a key driver for the expansion of these schemes.[506] This ultimately culminated in the Water Act 2014 which provided for business retail competition.[507]

384. **The Welsh government, in contrast, does not appear to have proactively pursued competition**. In England, the business retail water market opened in April 2017, allowing around 1.2 million non-household customers to choose their retailer. In Wales, only large non-household customers (using more than 50Ml per year) are *permitted* to switch retailer.[508] This reflects different legal frameworks and different strategic steers from the Welsh Government.[509]

Competition in the market

385. **'Market opening' is where aspects of the water market have been removed from the monopoly of incumbent water companies**. These are areas where competition can operate more closely to normal market conditions, though due to the critical nature of water supply, still sit within regulatory guidance. This includes 'in the market' competition (for example customer services) and 'for the market' competition where activities can be contracted out through procurement processes to encourage competition between contractors (for example large construction projects such as new reservoirs).

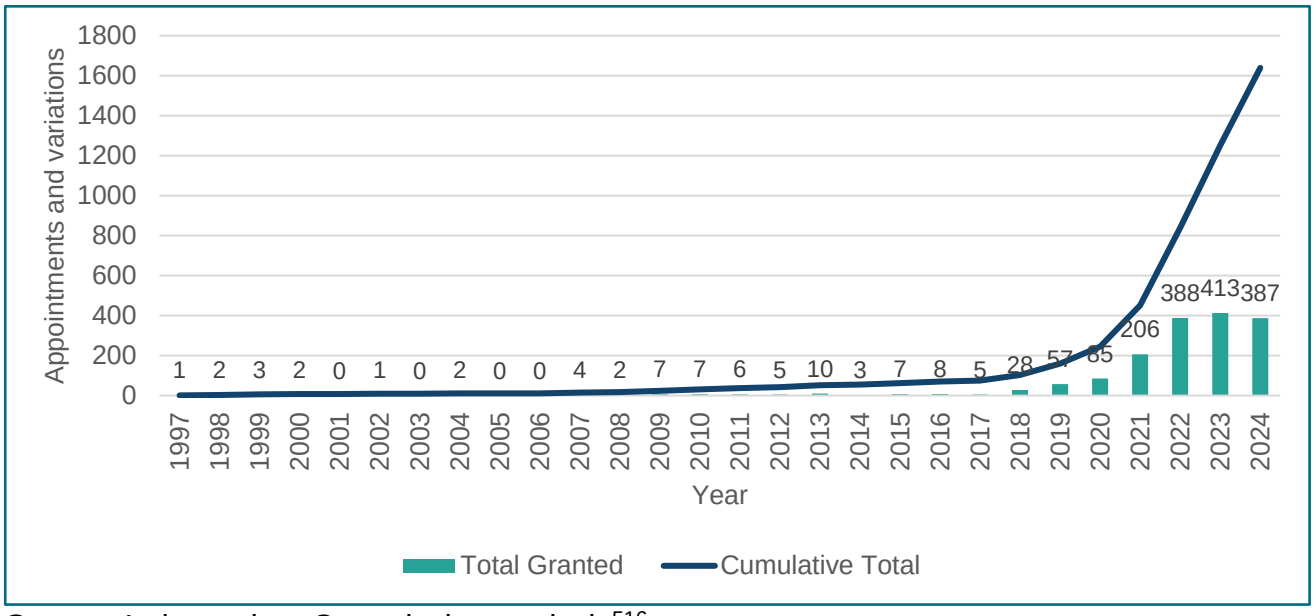
386. Over the past decade, Ofwat has pursued competition 'in the market', supported in some cases by legislative change. There are 5 different types of competition 'in the market':

- **New Appointments and Variations (NAV)**: NAVs allow a new entrant company to replace an incumbent water and sewerage company for a specific area. NAVs are mainly used by larger housing developers (for example more than 50 to 100 properties) to supply new sites with water and/or sewerage services, and to maintain on-site water and/or sewerage infrastructure. [510] Some NAVs offer a multi-utility service (for example water, electricity and gas). NAVs must be approved by Ofwat to operate, and while

[506] Competition and innovation in the water markets (Cave review) - GOV.UK
[507] Increasing competition in the water industry - House of Commons Library
[508] Business retail market - Ofwat
[509] Decision document on changes to our new appointee application assessment process in Wales - Ofwat
[510] Ofwat Correspondence – Tranche 2 Question 20

consultation with the incumbent water company is required, their consent is not.[511] There has been a rapid growth in the number of NAVs in England since 2018 and there are currently 12 NAVs.[512] Figure 23 shows that an average of 3-4 new sites were granted annually through the NAV process between 1997-17, while from 2018-24 an average of around 223 new sites have been granted annually. Ofwat estimates that the proportion of new connections served by NAVs could increase to around 50% in the coming years.[513] While NAVs are being encouraged in England, the rollout in Wales has been slower. There are some examples of NAVs being appointed in Wales (for example, Albion Eco Limited became the water provider for Shotton papermill in 2016).[514] Ofwat currently have an ongoing consultation on regulatory reporting requirements for new appointees.[515]

Figure 23: Number of Appointments and Variations since 1997, England & Wales



Source: Independent Commission analysis[516]

- **Self-Lay Providers (SLPs)**: Ofwat also facilitates SLPs, who are accredited contractors who can be chosen by developers to provide local water pipework as an alternative to the incumbent water company. Before an SLP can carry out work, they must have relevant accreditation, for example, by the Water Industry Registration Scheme. SLPs are not licensed like NAVs and do not retain customers – rather, once connected, customers will be serviced by the incumbent water company.[517] SLPs typically lay infrastructure for sites with 25 or more properties. In 2023-2024, they provided infrastructure for about 40% of *new* water customers served by English

[511] New Appointments and Variations (NAVs) - 5Ofwat
[512] Licences and licensees - Ofwat
[513] Ofwat Correspondence – Tranche 2 Question 20
[514] Register of new appointments and variations granted to date - Ofwat Row 65
[515] Consultation on regulatory reporting requirements for new appointees for 2024-25 onwards - Ofwat
[516] To note, these figures should be treated as indicative and not exact due to duplications within the dataset (for example where different services have been applied for separately) and changes to ownership of a NAV. Data from: Register of new appointments and variations granted to date - Ofwat
[517] Self-lay - Ofwat

incumbent water companies.[518] SLPs are also utilised in Wales where they must be compliant with Welsh legislation and the Water Industry Registration Scheme.

- **Business Retail Market**: Following Price Review 2014, Ofwat opened a Business Retail Market, where business customers can choose their water and wastewater retailer. The existing market was split with licences given to wholesalers who own infrastructure, and retailers who own customer billing data and are responsible for activities such as meter reading and customer service. Under this arrangement, retail suppliers buy water and/or sewerage services from wholesalers and offer a package to sell to business customers. [519] Business customers may prefer this option because of customer service or cost benefits.

- **Water bidding market**: Ofwat facilitates a water bidding market, which involves bulk water trading between incumbent water companies within the UK, including a number of historic agreements for the transfer of water from Wales to England. In the bidding market, third-party providers submit bids to water companies to provide solutions to help meet future water needs. Options can be either on the supply (for example water trades) or demand (for example efficiency schemes) side[520]. Where water trading occurs, this can either be from another water company or from a third-party provider. Most water trades between water companies were agreed before privatisation, with water trading subsequently staying at around 4-5% of distribution input.[521] Though technically an example of competition, water trading is also aimed at regional supply resilience, balancing supply and demand in the face of increasing population and climate change.[522]

- **Bioresources market**: This is the market for the collection, transport, treatment and disposal of wastewater sludge and by-products. Third-party service providers can compete in the market to provide bioresources services and may be able to offer efficiency benefits relative to incumbent water companies. The bioresources market operates in both England and Wales, under the supervision of Ofwat. In 2021, Ofwat published the Jacobs review which found bioresources market activity had been lower than expected, principally driven by regulatory uncertainty on the future of biosolids being spread onto agricultural land.[523]

Competition for the market

387. Ofwat also currently supports competition ‘for the market’ in 2 areas:

- **Direct Procurement for Customers (DPC)**: DPC is where regulated water companies put major projects to competitive tender for the project to be built, financed and operated by a competitively appointed provider (CAP). Ownership of the asset is transferred back to the incumbent water company after the agreed length of contract

[518] Ofwat Correspondence – Tranche 2 Question 20
[519] Business retail market - Ofwat
[520] Water bidding market - Ofwat
[521] Water trading - Ofwat
[522] Water supply and demand management; PowerPoint Presentation Ofwat
[523] Jacobs-report-Bioresources-Market-Review.pdf

expires (25-30 years). The activities of the CAP are regulated indirectly via the contractual relationship between the CAP and the water company. This model has the potential to provide value in several ways, such as reducing financing or operating costs and involving new participants with innovative approaches. At Price Review 2019, Ofwat trialled procurement competition for some major projects, with companies expected to consider DPC where this was likely to provide value for customers.[524] From Price Review 2024, Ofwat has made DPC the default model for projects over £200 million. Ofwat does, however, reserve the right to explore the use of DPC for major projects below this size threshold where it may offer value for money for customers.[525] DPC currently operates in both England and Wales. For example, Ofwat has designated Dŵr Cymru Welsh Water's Cwm Taf Water Supply Strategy, which concerns the development of a new water treatment plant and associated works, as a DPC scheme.[526]

- **Specified Infrastructure Projects Regulations (SIPR)**: SIPR is where a third-party provider, the Infrastructure Provider, is granted its own license by Ofwat to build a major project and then regulated directly. SIPR was introduced in 2013 but currently can only be used under strict legal criteria, such as for projects of a significant size and complexity that may threaten the water company's ability to provide services and value for money to customers.[527] To date, the only project to have used SIPR is the Thames Tideway tunnel (see case study below) which was undertaken with a government support package designed to assist the project if exceptional, highly unlikely risks were to happen.[528] Ofwat has indicated SIPR may offer even greater cost savings than DPC and in initial engagement with the operators of Thames Tideway tunnel (Bazalgette Tunnel Limited), the Commission has heard how SIPR can facilitate an efficient allocation of risks between companies, contractors and government, reducing costs.[529] SIPR may also allow for a model of price discovery which is not reliant on regulatory judgement. At Price Review 2024. Ofwat proposed that a further 3 SIPR schemes would be brought forward (Fens Reservoir, Lincolnshire Reservoir, South East Strategic Resource Option).[530] To date, no SIPR proposals have been made in Wales.

Box 16: Thames Tideway Tunnel and SIPR

The Thames Tideway Tunnel (TTT) is a 25-kilometre-long sewer that has been built in London to reduce the amount of sewage that flows into the River Thames. The tunnel will collect sewage from 34 of the river's most polluting overflow points and transfer it to Beckton Treatment Works. After 8 years of construction, the TTT is now fully

524 Direct Procurement for Customers - Ofwat
525 PR24_final_methodology_Appendix_5_DPC.pdf
526 CWM-TAF-DESIGNATION-REASONS-DOC-FINAL.pdf
527 Criteria-for-selecting-specified-infrastructure-projects.pdf page 8
528 Thames Tideway Tunnel: government support package contract documents - GOV.UK
529 Engagement with Thames Tideway Tunnel
530 11.-PR24-final-determinations-Major-Projects-development-and-delivery.pdf

operational.[531] The TTT is the UK water sector's largest infrastructure project since privatisation and is estimated to have cost £5 billion.[532]

The use of SIPR for TTT successfully reduced costs to customers. Initially, the project was expected to increase Thames Water's customer bills by £70-£80 annually in the worst-case scenario. SIPR was set up specifically for the TTT project and following the SIPR procurement competition, the estimated average annual bill increase was reduced to £20-£25.[533] To help the private sector to finance this project, a series of contracts were signed with Bazalgette Tunnel Ltd. which committed the Government to provide contingent financial support in specified circumstances during the build phase.[534]

Though there are higher transaction costs associated with the procurement of a project under SIPR, compared to procurement under DPC or delivery by the water company, removing the TTT project from the incumbent water company generated large savings.[535] Thames Water will operate the above ground assets with Thames Tideway maintaining the tunnel and servicing debt.

Current issues

388. The Commission has heard 4 broad issues in relation to competition:

- Issues in relation to the NAV market, including a cumbersome licensing process
- Issues in relation to the Business Retail Market
- Issues in relation to the oversight and scope of DPC and SIPR
- Risks from the expansion of competition, including off-balance sheet risks and market fragmentation

Issues in relation to the NAV market, including a cumbersome licensing process

389. **The Commission has heard that while the English NAV market seems to have led to some improvement in relation to housing development, the licensing process appears to be cumbersome**. Ofwat has indicated that the NAV market enables better and quicker services for developers. However, the Commission has heard concerns about a lack of flexibility for the NAV licensing processes.[536] For example, the current process requires Ofwat to comply with statutory consultation timescales no matter what the scale of the application. Ofwat has indicated this could be seen as disproportionate if the economic impact of a new application is very

[531] Thames Tideway | Institution of Civil Engineers (ICE) & Tideway | London's super sewer now fully connected – promising a greener, healthier River Thames
[532] Thames Tideway | Institution of Civil Engineers (ICE)
[533] PN 02/15 Ofwat awards licence for Thames Tideway Tunnel - Ofwat
[534] Thames Tideway Tunnel: government support package contract documents - GOV.UK
[535] Consideration of the applicability of a SIPR delivery model for the South East Strategic Reservoir Option (SESRO)
[536] Engagement with Independent Networks Association

modest.[537] Additionally, the Commission has heard concerns that the requirements placed on NAVs are not always risk-based or standardised[538]. These concerns may limit the scope for NAVs to support developer services and the growth of the housing market in England[539]. The Commission has heard that in Wales, NAVs (or the lack thereof), have not been identified as a barrier to meeting housing development commitments or as a risk to their stated housing objectives.[540]

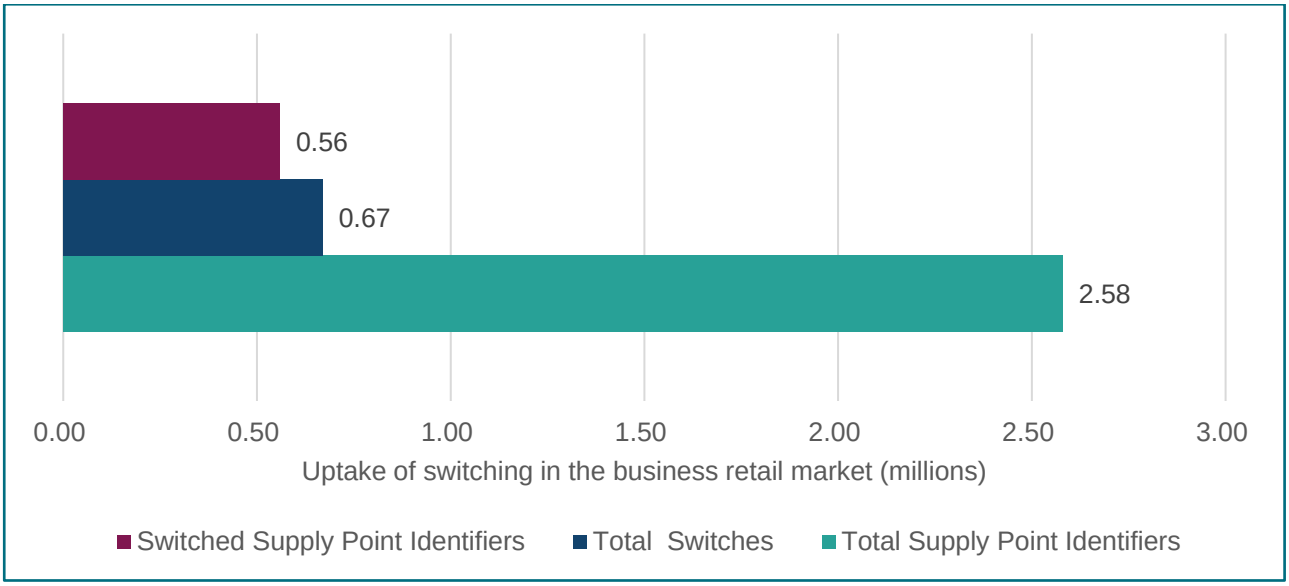
Issues in relation to the Business Retail Market (BRM)

390. **The Commission understands there are challenges with the BRM, with only large users of water appearing to engage with this mechanism in England**. In initial engagement, Market Operator Services Limited (MOSL) was positive about the future of the BRM. However, the Commission has heard how the retail market in England struggles to engage smaller non-household customers with switching between water retailers, suggesting they do not see value in doing so.[541] In the 7 years since the market opened, switching activity has remained relatively low. MOSL has reported that only 21.9% (0.56 million) of business premises have switched retailer at least once, while the large majority, 78.1% (2.01 million) have never switched.[542] Figure 24 below highlights this limited uptake of switching, with a total of 0.67 million switching events, including multiple switches by some customers.

391. **The Commission has also heard how the BRM may be creating unhelpful incentives in relation to water usage**. As water retailers are paid on the volume of water they sell, they have no incentive to encourage their business customers (who are generally large businesses who use the most water) to use less water. Bulk tariffs for large customers also make the cost of water so little for them, they are not incentivised to become more efficient in using it. This may be driving over-consumption of water by businesses in England.

Figure 24: Uptake of switching in the business retail market since 2017 to date, England, Millions

[537] Competition stocktake report final
[538] Engagement with Independent Networks Association
[539] Competition stocktake report final
[540] Engagement with Welsh Government
[541] BR-market-update-2023-24.pdf
[542] Supply Point Identifiers (SPIDs) are unique codes representing water or wastewater supply points, typically linked to a property or service, not individual customers. A single customer can have multiple SPIDs if they operate across multiple locations or have separate water and wastewater connections.
; Switching dashboard



Source: MOSL[543]

Issues in relation to the oversight and scope of DPC and SIPR

392. **There may be potential to achieve substantial cost saving and increase competition through expanding the use of DPC, which Ofwat has supported**. However, there are obstacles to expanding DPC further. For example, given it is a contract between the water company and third-party provider directly, there is decreased oversight of the project by Ofwat – this could create significant risk and challenge in the future given the growing scale of projects under DPC.[544]

393. **The Commission has heard similar views about Specified Infrastructure Project Regulations (SIPR)**. The wider use of SIPR is currently restricted by scale and complexity tests in the Water Industry Act 1991 which limits its use to 'projects of a significant size and complexity that may threaten the water company's ability to provide services and value for money to customers'.[545] Legislative changes would be needed to enable the more routine use of SIPR.

Risks from the expansion of competition, including off-balance sheet risks and market fragmentation

394. **The Commission has heard general concerns about the expansion of competition through the schemes discussed.** This includes, for example, shifting assets and liabilities off companies' balance sheets through SIPR.[546] Some have drawn parallels between SIPR and Private Finance Initiatives, a method of funding public infrastructure projects through private sector investments.[547] In initial engagement, investors have highlighted concerns that SIPR also increases risks to

[543] Figures correct and last updated as of 13/02/2025. Data from: Switching dashboard
[544] Competition stocktake report final
[545] The Water Industry (Specified Infrastructure Projects) (English Undertakers) Regulations 2013
[546] https://dieterhelm.co.uk/regulation-utilities-infrastructure/more-debt-less-competition-ofwats-dpc-and-sipr-proposals/

[547] Private Finance Initiatives - Committee of Public Accounts - House of Commons

incumbent water companies without corresponding rewards, because it is fragmenting the market and giving projects that would otherwise be run by incumbents to new entrants.[548]

395. **The Welsh government has expressed concerns about the expansion of DPC**, highlighting that their experience to date is that DPC has actually delayed delivery and increased costs for water companies, with third party involvement fragmenting the sector and making accountability more complex.[549]

396. **The Commission has also heard concerns about increased fragmentation of the water and sewerage network from the expansion of the NAV market**.

Areas where the Commission is seeking views

397. The Commission is seeking views on the extent that the competition mechanisms set out above should play a role in the water sector going forward. Given different approaches historically, the Commission is also interested in where different approaches might be taken in England and Wales, as well as where there may be opportunities for convergence.

398. The Commission is seeking views on stakeholder proposals to make the existing competition initiatives work better, across the following 3 areas:

- Changes to the NAV market to reduce administration burdens
- Changes to the business retail market, to focus on where it is most beneficial and/or to ensure efficient use of water
- Changes to DPC and/or SIPR, to ease and expand their use

399. We encourage readers to respond to our questions on these topics via Defra's online consultation tool, Citizen Space. The questions on Citizen Space are also included at Annex A: Call for Evidence questions.

Changes to the NAV market to reduce administration burdens

400. **The Commission is seeking views on the benefits and risks of options to support NAV growth, including to reduce administrative burdens**. For example, in their 2022 competition stocktake, Ofwat highlighted the problem of statutory consultation timelines delaying some applications. An option of 'amending Section 8 of the Water Industry Act, which currently requires Ofwat to consult on all licensing applications, irrespective of the scale of the new development being applied for by new appointees' would provide Ofwat with some discretion to prioritise those applications with wider national benefit or greater innovation.[550]

[548] Water Commission Investor Roundtable
[549] Engagement with Welsh Government
[550] Competition stocktake report final page 23

Changes to the BRM to focus on where it is most beneficial and/or to ensure efficient use of water

401. **The Commission is also seeking views on the BRM, including whether it should continue to apply to small, as well as large users**. In England, there appears to be genuine competition for larger business users who regularly switch between retailers, whereas smaller businesses are much less likely to engage with the market.[551] This raises the question of whether the model used in Wales, where only large business users (>50Ml/year) have access to the market,[552] should be explored for England.

402. **Additionally, the Commission is seeking views on options to support greater water efficiency through the BRM**. As noted, the Commission has heard low-cost bulk tariffs for large water users disincentivise water efficiency and that because retailers are paid by volume, they have no incentive to promote water efficiency. The Commission is interested in whether charging structures could be reviewed in order to encourage more efficient use of potable water, or the use of 'off-grid' rainwater systems where feasible.

Changes to DPC and/or SIPR, to ease and expand their use

403. **The Commission is seeking views on whether DPC and SIPR should be further expanded, and if so, how potential barriers to success should be removed**.

404. **The Commission would like to understand how the administrative burden of DPC could be reduced to further decrease project costs and streamline the overall process**. The Commission is also interested in potential risks from the expansion of DPC (for example, fragmentation and increased complexity).

405. **The Commission is interested in whether the criteria for using SIPR should be expanded**. The criteria for the use of SIPR could be expanded so that it can be used for more very large infrastructure projects. This would likely require additional resourcing at Ofwat to cope with the additional workload. However, the Commission understands that expanding SIPR may carry risks, such as fragmentation and increased complexity. The Commission is interested in how these risks might be managed if SIPR were expanded in scope.

[551] Business retail market update 2023-24 - Ofwat
[552] Revised_Eligibility_Guidance.pdf

Chapter 5: Water industry public policy objectives

406. **Regulation of the water industry helps to ensure delivery of clean drinking water, the effective collection, treatment, and removal of wastewater to protect the public health, and secures provision of the long-term supply of water for people and the economy**. It also ensures water companies are acting responsibly and in line with customer and public interests.

407. **Regulation has been introduced over time.** This has primarily been in the form of statutory requirements, duties, and powers set out in legislation and given to water companies, the regulators, and governments. The Water Act 1989, the Water Industry Act 1991, and the Water Resources Act 1991 are the legislative pillars of the privatised model.

408. **This chapter sets out background and issues relating to key water industry delivery objectives.** It first looks at protecting the environment before turning to the delivery of clean drinking water, securing resilient water supply, and managing resilient and secure infrastructure, before finally addressing innovation and technology.

Protecting the environment

Background

Environmental requirements

409. **Environmental regulation is in place to protect the environment from harm and to mitigate damaging activities.** Wastewater, trade and industrial effluent can impact the environment by causing elevated levels of nutrients and chemicals, as well as impacts to human health from pathogens, viruses, and bacteria. Abstraction for water supply, if unregulated, can result in reduced water levels and altered flow patterns, which can harm the ecology and habitats of local areas. In recent years there has been significant public anger about the impact of pollution on the health of our waterways, particularly raw sewage discharges from storm overflows.

410. **Environmental standards have been successively introduced, largely by the European Union and retained by the UK government, in response to greater public expectations for the natural environment**. This includes the Water Framework Directive (WFD), Bathing Water Directive and Urban Wastewater Treatment Directive (*Chapter 2* outlines these in further detail).

411. **In more recent years, the UK and Welsh governments have introduced new statutory requirements and targets in response to concerns about the environment and the performance of water companies**. In England, this includes through the Environment Act 2021 and the Levelling Up and Regeneration Act 2023. The Environment Act 2021 introduced a new statutory target to reduce phosphorous

loadings from treated wastewater by 80% by 2038 against a 2020 baseline. It also included new requirements for storm overflows and pollution reduction.

412. **Automated monitoring requirements were also introduced by the Environment Act 2021 to increase transparency about the frequency and duration of discharges from storm overflows**. Water and sewerage companies in England are now legally required to publish data on discharges from storm overflows in near real time (within an hour of the discharge occurring). The Water (Special Measures) Act 2025 introduces requirements on water companies in England and Wales to also publish near-real time data on the frequency and duration of all emergency overflow discharges.[553] Through Price Review 2024, water companies in England are required to install Continuous Water Quality Monitors at 25% of storm overflow and wastewater treatment works sites, to provide near real-time data on the impact of discharges on the water quality of the receiving watercourse. The data from these sources supports or will support compliance activities by the Environment Agency (EA) and Natural Resources Wales (NRW) by directing investigations and possible enforcement action to where the data indicates potential non-compliance with permit conditions.

413. **The Levelling Up and Regeneration Act 2023 requires wastewater treatment works in England to reduce nutrient pollution to improve water quality and protect wildlife**. A new duty was introduced for water companies in designated catchments, to ensure wastewater treatment works meet specified nutrient removal standards. In Wales, NRW has set new phosphorus reduction targets for special areas of conservation (SAC) rivers under the Conservation of Habitats and Species Regulations 2017.

414. **UK and Welsh governments have also introduced recent non-statutory requirements to improve the water environment, via policy, guidance, and strategy documents**. In relation to sewage spills from storm overflows, the expanded 2023 Storm Overflow Discharge Reduction Plan set targets to reduce all storm overflows in England to a maximum of 10 spills per year on average, to eliminate ecological harm from storm overflows and prevent harm to human health in designated bathing waters.[554] This goes further than the requirements set under existing regulations, the Urban Waste Water Treatment (England and Wales) Regulations 1994, and the UK government has recently closed a consultation on new storm overflow guidance to provide a clearer framework to support future investment for regulators and water companies. The UK government's Environmental Improvement Plan (EIP) meanwhile, established an interim phosphorus reduction target for treated wastewater of 50% by January 2028.[555]

415. **Combined, environmental requirements are resulting in a record planned investment by the water industry over the next 5-year Price Review period**. In total, £104 billion is due to be spent over the next 5 years across England and Wales,

[553] House of Commons, 'Water (Special Measures) Bill 2024-2025 - House of Commons Library'
[554] Department for Environment, Food and Rural Affairs, 'Storm overflows discharge reduction plan - GOV.UK'
[555] Department for Environment, Food and Rural Affairs, 'Environmental Improvement Plan'

with £24 billion of that focused on delivering environmental enhancement projects.[556] Ofwat estimates that this will see nearly 3,000 storm overflow improvement projects, upgrades at over 1,700 wastewater treatment works and improvements or protections for over 15,000 kilometres of rivers.[557]

416. **Annex E provides a summary of the principal environmental legislative requirements water companies have to comply with**.

Environmental regulatory oversight

417. **As the principal environmental regulators in England and Wales respectively, the EA and NRW issue permits and licences setting rules and conditions to secure compliance with environmental requirements**. Wastewater discharges are permitted under the Environmental Permitting Regulations regime, to protect the environment and public health.[558] This permitting regime ensures the statutory and government policy targets are achieved by ensuring discharges meet statutory requirements.

418. **Abstraction and impounding activities are regulated under the Water Resources Act 1991 (WRA91).** The EA is responsible for managing water resources in England. It controls how much water is taken using a licensing system to make sure that there is enough water for people and the environment. Long-term water supply is managed primarily through Water Resource Management Plans (WRMPs), and this is set out in more detail in *Chapter 5*. NRW performs this function in Wales.

419. **The application of sludge, the residual solids from the treatment of wastewater to land is regulated through the Sludge (Use in Agriculture) Regulations 1989**. In addition, EA and NRW also regulate sludge anaerobic digestion activities (known as Industrial Emissions Directive permits) under the Environmental Permitting Regulations.

420. **Natural England is the government's nature conservation advisor in England.** They have a range of duties and roles under the Habitats Regulations.[559] One of these duties is to advise other 'competent authorities', including ministers and the Environment Agency, on the Habitats Regulations Assessment (HRA) of plans or projects which may affect protected sites. Natural England is also a 'competent authority' for the purposes of assessing the impact of proposed operations on Sites of Special Scientific Interest (SSSIs). NRW perform these functions in Wales.

421. **As set out in *Chapter 2*, infrastructure upgrades to meet environmental requirements are planned through the Water Industry National Environment Programme (WINEP) in England and the National Environment Programme (NEP) in Wales**. Ofwat through the Price Review process make determinations on the

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[556] Ofwat 'Our final determinations for the 2024 price review – Sector summary'
[557] Ofwat 'Our final determinations for the 2024 price review – Sector summary'
[558] Department for Environment, Food and Rural Affairs, 'Environmental Permitting Regulations offences - GOV.UK'
[559] The Conservation of Habitats and Species Regulations 2017

overall funding envelopes for 5-year periods for water companies which finances the delivery on the WINEP and NEP.

422. **Operator Self-Monitoring was introduced in 2009 and is commonplace across other regulated industries.** Wastewater treatment samples are taken at a regular and randomised frequency throughout the year by the water company, and submitted regularly to EA or NRW, following analysis.[560] The frequency of sampling varies according to the size of the wastewater treatment works – sites serving a large population require more frequent sampling than smaller sites.[561] Any failing samples must be flagged to regulators immediately.

423. **Other data is reported annually such as storm overflow EDM data**, which includes annual summary spill data in the form of spill frequency and total time operated. For permitted sites the regulators also require water companies to self-report when they pollute or make any unauthorised discharges to the environment. For abstraction licences, water companies are required to record abstraction data and submit returns to the regulator annually.[562]

424. **It is the regulators' role to scrutinise information provided to ensure it is of sufficient quality and more importantly to check that it meets required standards set out in environmental permits**.

425. **The EA and NRW also conduct some compliance audits and inspections to monitor compliance with permits and licences, taking a risk-based approach**. In 2024, the EA announced its intention to increase EA inspections of company assets.[563] The announcement set out that 4,000 water company inspections would be carried out by the EA by the end of March 2025, and 10,000 carried out by April 2026. This would be an increase in the number of water company site inspections at wastewater assets from 874 completed in 2022-23 financial year and 1409 completed in 2023-24 financial year.[564] In the 2024-25 financial year (up to 10 February 2025), 3,598 have been completed. This is supported by additional funding from charges on water companies.[565] In Wales, NRW increased charges on water discharge permits following a strategic review of its charging framework in late 2022. These changes ensure the costs of permitting and compliance are recoverable.[566]

426. **In attempts to strengthen the ability of the regulators to drive performance improvements, the Water (Special Measures) Act 2025 will introduce a duty for all water companies in England and Wales to produce annual plans setting out the specific actions they will take to reduce pollution incidents attributable to**

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[560] Environment Agency, 'Water companies: Operator Self-Monitoring (OSM) environmental permits - GOV.UK'
[561] Environment Agency, 'Waste water treatment works: treatment monitoring and compliance limits - GOV.UK'
[562] Environment Agency, 'Comply with your water abstraction or impounding licence - GOV.UK'
[563] Environment Agency, 'How we're bringing change to water industry performance – Creating a better place'
[564] Engagement with the Commission – Internal EA data
[565] Department for Environment, Food and Rural Affairs and others, 'Inspection surge to crack down on water sector pollution - GOV.UK'; Wildlife and Countryside Link, 'Is the Environment Agency doing its job?'
[566] Natural Resources Wales, 'Natural Resources Wales / NRW set to implement new environmental regulatory charging scheme'

their water supply and sewerage systems. Companies must also provide annual implementation reports, setting out their progress in implementing the actions they have previously committed to.

427. **The environmental regulators also collect data on overall water company performance.** The Environmental Performance Assessment was introduced in 2011 as a non-statutory tool for comparing water companies in England and Wales.[567] It provides an annual comparison of performance across companies, as well as a comparison of companies' own performance over time. Through Ofwat's Water Company Performance Report, Ofwat also scrutinises water company performance. Ofwat uses EA and NRW metrics to report on environmental performance.

Enforcement of environmental regulations

428. **The EA and NRW have a range of enforcement levers for when water companies fail to comply with environmental permit or abstraction and impoundment license conditions**. This includes using notices, civil sanctions, and prosecutions via the courts to stop the offending, bring companies back into compliance, and support restoration and remediation. The regulators may also accept enforcement undertakings from companies. Undertakings are an offer from a company to put right the effects of their offending, put right the impact on third parties, make sure the offence cannot happen again, or a combination of the three. The regulators take enforcement action in line with their respective published enforcement and sanctions policies.[568]

429. **The enforcement regimes of the EA and NRW have undergone significant reforms in the last few years to address concerns that the severity of penalties on water companies historically may not have been sufficient to drive behaviour change**. The previous UK government expanded the scope of the variable monetary penalties and removed the cap on penalties, meaning water companies could face unlimited penalties.[569] In addition, the Sentencing Council (who set sentencing guidelines for prosecutors) is consulting on introducing new guidance in relation to the prosecution of very large organisations.[570] The Water (Special Measures) Act 2025 will introduce two new enforcement provisions: lowering the civil standard of proof and introducing automatic penalties to enable regulators to take quicker action against minor and moderate offending, which makes up a significant proportion of non-compliance.

430. **Through the Water Industry Act 1991, Ofwat also has specific powers and a duty to take enforcement action against water companies in relation to breaches of certain licence conditions and statutory obligations, including some environmental requirements**. Ofwat has enforcement duties in relation to water

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[567] Environment Agency, 'EA Environmental Performance Assessment 2020'; Natural Resources Wales, 'Annual environmental performance report for Dŵr Cymru Welsh Water 2023'
[568] Environment Agency, 'Environment Agency enforcement and sanctions policy - GOV.UK'; Natural Resources Wales, 'Natural Resources Wales / Enforcement and sanctions policy'
[569] Department for Environment, Food and Rural Affairs, 'Unlimited financial penalties for environmental offences will mean "polluters always pay." – Defra in the media'
[570] Sentencing Council, 'Miscellaneous amendments to sentencing guidelines: consultation 2024 – Sentencing'

companies' statutory obligation to provide and maintain a system of public sewers, including under and the Urban Waste Water Treatment Regulations 1994 (UWWTR). Ofwat is currently carrying out an investigation into all water and wastewater companies in England and Wales following evidence that several water companies may not be treating as much sewage at their wastewater treatment works as they should be.[571] Ofwat does not, however, perform a general inspection function, though it can require water companies to provide it with information. UK ministers and the Welsh Government also have enforcement functions under the Water Industry Act 1991 but generally rely on Ofwat to enforce under the Act.

Current issues

431. The Commission has heard 7 broad issues in relation to the water industry environmental regime:

- Compliance and water company culture
- Complexity of environmental regulation
- Limitations in environmental regulation
- Monitoring delivery
- Enforcement
- Emerging issues in case law
- Wider non-water company actions impacting sewer capacity

Compliance and water company culture

432. **There has been significant non-compliance by water companies with environmental requirements.** Since 2015, the EA has concluded 66 prosecutions against water and sewerage companies (WASCs) securing fines of over £151 million.[572] Between 2019 and 2024, Ofwat opened new enforcement cases against WASCs in England and Wales in relation to their wastewater operations. This means Ofwat now has enforcement activities underway against all 11 of the WASCs in England and Wales in relation to the operation of their wastewater business.[573] Similarly, the EA is investigating potential widespread non-compliance by all WASCs in England at sewage treatment works.[574]

433. **Concerns have been raised about water company culture in relation to the scale of environmental compliance.** As an example, Southern Water was fined £90m in 2021 following 51 counts of discharging untreated sewage. In sentencing, the Judge noted in his summation of culpability "I am sure that the board of directors knew that

[571] Ofwat, 'Investigation into sewage treatment works and sewerage networks - Ofwat'
[572] Engagement with the Commission – Internal EA data
[573] Ofwat, 'Ofwat announces enforcement cases against four more companies in wastewater treatment investigation - Ofwat'
[574] Environment Agency, 'Environment Agency investigation into sewage treatment works - GOV.UK'

the systems that were in place were wholly inadequate to prevent unpermitted discharges of sewage into controlled waters, and yet it deliberately failed to put in place and enforce the systems that were reasonably required to avoid the offences. It thereby flagrantly disregarded the law."[575]

434. **Moreover, the EA has faced challenges during investigations.[576]** The Water (Special Measures) Act 2025 will introduce stronger penalties for obstructing water company investigations, with a maximum sentence of 2 years. Stakeholders have also argued that some water companies lack transparency in relation to the publishing of environmental data.[577]

Complexity of environmental regulation

435. **Water companies have been operating in a regulatory framework that has become increasingly more complex.** Increasing environmental standards have led to the addition of new domestic legislative and regulatory requirements. In many cases, new legal requirements overlap with existing laws.

436. **In England, for example, there are 93 separate statutory and non-statutory requirements driving water company investment in the Price Review 2024 environment programme (WINEP)**. This amounts to over 18,598 individual actions across all water companies, of which over 98% of the actions are statutory. Many of these derive from retained EU law.[578] As detailed in *Chapter 2*, this includes the WFD (seeking to achieve Good Ecological Status (GES) at 75% of water bodies in England), the Urban Waste Water Treatment Regulations (which is driving upgrades at wastewater treatment works and storm overflows), the Bathing Waters Directive (which informs improvements to sewage assets impacting designated waters), and the Industrial Emissions Directive (which sets standards for the reduction of emissions from wastewater assets). Most of these regulatory frameworks date back many years and may not have kept pace with changing evidence and policy outcomes.[579]

437. **Some water industry environmental requirements, particularly on storm overflow regulation, appear to be quite difficult to interpret**. The EU's Urban Wastewater Treatment Regulations requires the so-called 'BTKNEEC test' (Best Technical Knowledge Not Entailing Excessive Cost) for assessing storm overflow improvement requirements. How this test should be applied has been debated in policy and legal settings, but it appears that the test makes it difficult to interpret quickly and easily whether a storm overflow discharge occurrence is legal or illegal. Indeed, the EU has now proposed recasting the Directive given their view that storm overflows across Europe are not being fully addressed through these regulations.[580] The UK

[575] Judiciary of England and Wales, 'Environment Agency v WATER Southern'
[576] Environment Agency, 'Anglian Water to pay £50,000 after Environment Agency prosecution - GOV.UK'
[577] House of Commons, 'Water Quality in Rivers'
[578] Engagement with the Commission
[579] European Parliament, 'New EU rules to improve urban wastewater treatment and reuse | News | European Parliament'
[580] Council of the European Union, 'Urban wastewater: Council adopts new rules for more efficient treatment - Consilium'

government, via the Storm Overflows Discharge Reduction Plan, has sought to implement numeric targets on storm overflow discharges, which appear to be easier to interpret. Consumer groups and eNGOs have suggested that there should be stronger stakeholder engagement when legislation and regulations are created, to ensure public sentiment is reflected in the direction for delivery.[581]

[581] Engagement with the Commission - covering consumer groups and eNGOs

Box 17: Upgrading a Waste Water Treatment Work

There are about 5,500 (2022-23 data) wastewater treatment works in England, and about 734 (2023 data) in Wales.[582] Improvements or upgrades to wastewater treatment works may be required to support additional housing and economic growth, meet new environmental requirements and to maintain the system.

When a water and sewerage company in England or Wales needs to upgrade a wastewater treatment works, it must consider compliance against all legal requirements, including:

England and Wales water company requirements:

- The impact of wastewater discharges on the receiving water body, to ensure compliance with the WFD Regulation's no deterioration objective.
- Maintenance, growth, and pollution reduction considerations under the Urban Wastewater Treatment Regulations.
- Prevent and reduce harmful industrial emissions under the Industrial Emissions Directive.
- Environmental legal requirements - examples include those derived from the Habitats Directive, the Bathing Waters Directive and the Shellfish Waters Directive, depending on where the sewage treatment work discharges to. This is not exhaustive.
- Environmental Permitting Regulations 2016 requires water companies to obtain environmental permits that sets out the limit and monitoring conditions for treated wastewater which the company have to comply with.
- It must also have regard for any imminent changes to environmental regulations that may be realised within the planning period.

England only water and sewerage company requirements:

- Nutrient reduction targets under the Environment Act 2021.
- Nutrient Neutrality emission limits under the Levelling Up and Regeneration Act 2023.
- Storm overflow monitoring and reduction targets under the Environment Act 2021 and the Storm Overflows Discharge Reduction Plan.

The above do not apply to Welsh companies, in Wales the requirements include:

- NRW's phosphorus reduction targets in Special Areas of Conservation rivers under the Habitats Directive Regulations.

[582] Engagement with the Commission – internal EA/NRW/Ofwat data

- Nutrient Neutrality requirements for discharges into SAC rivers under the Habitats Directive Regulations.
- Storm overflow improvements in line with NRW guidance targeted at removing harm and impact form storm overflows as well as increasing monitoring of overflows (based on a strategic monitoring programme).

This requires water companies in England and Wales to navigate a significant number of statutory environmental requirements for each of their wastewater treatment works. This is in addition to local planning requirements and guidelines for infrastructure upgrades, alongside designing for future population growth and climate change, encouragement from government and regulator to increase use of nature-based solutions, and pledges to meet Net Zero, where appropriate.

Limitations in environmental regulation

438. **Current and emerging environmental and public health concerns may not be adequately addressed in the current regulations and regulatory framework**. Urban wastewater treatment standards and wider water quality regulations (for example, WFD) have primarily focused on the environmental impacts of sewage in water, and stakeholders have outlined that there might be a gap in considering the public health impacts.[583] There is growing concern around antimicrobial resistance associated with discharges as well as emerging evidence on the public health impacts of microplastics.[584] The EU's new Urban Waste Water Treatment Directive, which was revised in 2024, introduced some new requirements to tackle emerging public health and environmental threats.[585] Neither the UK or Welsh government has committed to reforms to the Urban Waste Water Treatment regulations.

439. **Public health is currently protected through high levels of wastewater treatment**, such as UV disinfection, and stricter standards for storm overflows apply if a receiving water is designated as a protected area for bathing waters and/or shellfish waters where micro-biological standards then apply.

440. **The oversight of sludge (the residual solid waste produced from wastewater) may not be sufficiently robust.** Some have suggested the regulatory framework to manage the application of sludge to land may need to be strengthened by moving it to the Environmental Permitting Regulations regime.[586] Since the 1990s, UK government policy has encouraged the reuse of sludge to benefit the circular economy. In 2022, 94.4% of sludge English water companies produced was reused in agriculture as an

[583] Royal Academy of Engineering, 'Upgrades in wastewater infrastructure needed to protect public health'
[584] European Environment Agency, 'Impacts of microplastics on health (Signal) | European zero pollution dashboards'
[585] Urban Wastewater Treatment Directive (recast) 2024, Directive - EU - 2024/3019 - EN - EUR-Lex
[586] Imperial College London, 'Using microbes to remove microplastics from wastewater and sewage sludge | Institute for Molecular Science and Engineering | Imperial College London'

organic fertiliser.[587] The regulations contain limits on heavy metal application to soils, but do not consider pollution from modern contaminants, such as microplastics, where evidence of their risk is still emerging.[588] In addition, there have been indications that regulations do not provide environmental regulators with adequate oversight of water company sludge management practices.[589]

441. **In relation to the abstraction of water, stakeholders have argued that regulations could be strengthened to better protect the environment from the impacts of over abstraction**.[590] In 2021, the UK government consulted on changes to bring abstraction into the Environmental Permitting Regulations in England so that abstraction is regulated in line with other industrial activities, such as wastewater discharges.[591]

442. **Some environmental regulations may be overly prescriptive on the means of implementation and therefore may limit the use of innovative and nature-based solutions**.[592] In Price Review 2024, companies appear to have fallen back on more certain grey infrastructure, instead of more innovative solutions or solutions with wider benefits. Only £3 billion of the planned £104 billion of spending is considered by Ofwat to be a 'green scheme'.[593] The Commission understands that this was partly driven by the hard requirement for water companies to meet their contribution towards the statutory environmental objectives in the river basin management plans before any 2027 water body objective deadlines. During the optioneering process, we understand nature-based solutions were supported by regulators where legislation allowed but the efficacy of some nature-based solutions in meeting statutory environmental requirements was unclear. However, the Commission has also heard that a risk averse culture in the environmental regulators may limit the adoption of innovative solutions.[594]

Monitoring delivery

443. **Stakeholders have commented extensively on the implementation of environmental regulation and alleged failures in the oversight of water industry activity**.[595]

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[587] Department for Environment, Food and Rural Affairs, 'Wastewater treatment in England: data for 2022 - GOV.UK' (accessed 18 February 2025)
[588] Environment Agency, 'Environment Agency strategy for safe and sustainable sludge use - GOV.UK'; Engagement with the Commission
[589] Pinsent Masons, 'Judicial review case may push forward new rules for testing 'forever chemicals' in sludge; Environment Agency, 'Environment Agency strategy for safe and sustainable sludge use - GOV.UK'
[590] Blueprint for Water, 'blueprint_for_water_abstraction_reform_consultation_briefing.pdf'
[591] Department for Environment, Food and Rural affairs, 'Water abstraction plan - GOV.UK'
[592] Water UK, 'NAO submission.pdf'
[593] Ofwat, 'Our final determinations for the 2024 price review – Sector summary'
[594] Engagement with the Commission
[595] Water quality in rivers - Environmental Audit Committee; House of Lords - The affluent and the effluent: cleaning up failures in water and sewage regulation - Industry and Regulators Committee

444. **In relation to storm overflow regulation, Defra, EA and Ofwat are being investigated by the OEP**, with the OEP alleging that there have been failures in regulatory oversight of untreated sewage discharges.[596]

445. **There has been considerable criticism of the EA's Operator Self-Monitoring regime.** Stakeholders say it is not sufficiently robust and may allow water companies to game the system, for example by curating when it carries out testing to give the best chance of an acceptable result.[597] While regulators use audits and inspections to carry out assurance of water company data, it has been argued that the EA has failed to carry out sufficient inspections on waste water assets.[598] A similar charge has been made in relation to the abstraction licensing regime by some stakeholders.[599]

446. **Some stakeholders in Wales have also indicated a lack of robust regulatory processes and controls which have allowed failures, reported through Operator Self-Monitoring, to persist over a long period of time**.[600] Such failures are alleged in a report undertaken by Professor Peter Hammond which analysed data from 11 Welsh water sites between 2018 and 2023 and found that there were 2,274 days with permit breaches involving discharges of untreated sewage.[601]

447. **Despite significant upgrades in monitoring storm overflows over the past few years, there have been calls for more extensive, transparent and automated methods to monitor compliance at sewage treatment works**.[602] Alongside this, there have been calls for expanded use of machine learning, big data and artificial intelligence to assess compliance with permits.[603] However, there have been concerns raised about the expense and complexity of installing such monitoring equipment, which may not always represent good value for money for customers.[604]

448. **Perhaps most significantly, and as set out in *Chapter 2*, it has been alleged that regulators do not have the powers to oversee delivery of infrastructure projects such as environmental upgrades**. The EA or NRW, can take enforcement action if assets breach permit conditions, which are typically timed to coincide with the end of the Price Review delivery period. However, we have heard that there may be inadequate mechanisms for regulators to take action prior to the point of failure. [605]

449. **Stakeholders have also called for more transparency of regulatory compliance activity to enable the public to hold environmental regulators to account**. NRW

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[596] Office for Environmental Protection, 'OEP finds there have been failures to comply with environmental law in relation to regulatory oversight of untreated sewage discharges | Office for Environmental Protection'
[597] Department for Environment, 'Environment Agency response to Panorama investigation – Defra in the media'; House of Commons, 'Water Quality in Rivers'; Engagement with the Commission; Written evidence provided to the UK Parliament, 'committees.parliament.uk/oralevidence/2078/pdf/'
[598] Engagement with the Commission
[599] Angling Trust, 'Environment Agency checks on water abstraction halve in last five years: rivers pay the price - Angling Trust'
[600] Engagement with the Commission
[601] Peter Hammond, 'Report on performance of 11 sewage treatment works in Wales'
[602] House of Commons, 'Water Quality in Rivers'
[603] Engagement with the Commission
[604] Engagement with the Commission
[605] Engagement with the Commission

has maintained an online portal since 2019 which publishes Compliance Assessment Reports for water companies in Wales, and the EA has recently committed to start publishing Compliance Assessment Reports online for activities it regulates under the Environmental Permitting Regime.[606]

Enforcement

450. **Stakeholders have commented that they lack confidence that the EA and NRW enforcement regimes will hold companies accountable.** Some suggest that the severity of punishment has been insufficient to drive behaviour change.[607] In response to these concerns, previous UK government reforms introduced unlimited civil penalties for English water companies.[608] As part of the Water (Special Measures) Act 2025, the UK government is also proposing to introduce personal criminal liability for chief executives and to publish annual pollution incident reduction plans in England and Wales. Conversely, water companies have argued that increased liability for executives may damage recruitment and retention of the talent needed to turn the industry around.[609]

451. **There is a significant backlog of water company enforcement cases in the EA.** As set out in *Chapter 3*, the earliest enforcement case being investigated by the EA is from 2016 and, as of January 2025, there is a backlog of 86 cases.[610] There has been commentary on the time it takes for investigations to be conducted and for prosecution or penalties to be issued.[611] Investors have explained to the Commission that the uncertainty generated by long, ongoing EA investigations is damaging investor confidence by creating open-ended uncertainty. They argue that it is harder to attract investment to deliver upgrades when there is a significant pending liability risk and would prefer faster investigations.[612] The UK government, through the Water (Special Measures) Act 2025 will introduce new powers to enable quicker enforcement action by lowering the standard of legal proof for some civil sanctions and introducing automatic penalties to tackle minor and moderate offending.[613]

Emerging issues in case law

452. **In addition to regulators' responsibilities for regulating compliance, however, recent case law has confirmed an 'in principle' right, for watercourse owners to bring certain civil claims against water companies for the pollution of a watercourse**. The recent judgment in the Supreme Court case Manchester Ship Canal Company Ltd v United Utilities Water Ltd has confirmed this 'in principle' right (see Box

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[606] Environment Agency, 'Supporting growth through regulatory reform: response from Environment Agency CEO to the Prime Minister - GOV.UK'
[607] Engagement with the Commission
[608] Department for Environment, Food and Rural Affairs, 'Unlimited financial penalties for environmental offences will mean "polluters always pay." – Defra in the media'
[609] Engagement with the Commission
[610] Engagement with the Commission
[611] House of Commons, 'Water Quality in Rivers'
[612] Engagement with the Commission
[613] Water (Special Measures) Bill: policy statement - GOV.UK

18 below).[614] However, the judgment has left uncertainty as to what claimants must prove to bring such a claim and the compensation payable for a successful claim. In particular, the judgment leaves uncertainty as to whether a compensation claim could only be successfully brought where a discharge is not compliant with any permit conditions or whether any claimants could attempt to seek injunctions which would necessitate infrastructure upgrades by water companies. There is therefore potential for the emerging case law to have implications for companies' financial resilience (see *Chapter 4*) as well as the existing environmental compliance and enforcement regime described in this section.

Box 18: Potential implications of the Supreme Court judgment in the Manchester Ship Canal Company Ltd v United Utilities Water Ltd.[615]

Overview

The question for the Supreme Court was whether common law actions in private nuisance or trespass could be brought against water companies in the event of pollution caused by discharges of foul water from their infrastructure. In this case the parties had been in dispute about whether United Utilities required consent to discharge effluent into the Manchester Ship Canal (who owned the relevant canal) or whether they could discharge free of charge. Previously, it was thought that the Water Industry Act 1991 did not permit such claims to be brought.

The Supreme Court allowed MSCC's appeal and found that the Water Industry Act 1991 did not bar such claims. The Supreme Court considered the provisions of the Act in detail and found that Parliament had not acted to 'oust' such claims.

Implications

This Supreme Court judgment confirmed an 'in principle' right to bring claims for private nuisance or trespass against a sewerage undertaker for the pollution of a watercourse. Further litigation will determine what claimants must prove to bring a claim, and the compensation payable should the claim succeed.

It will therefore be for the lower courts to determine the circumstances in which such claims can succeed and, where they do, assess appropriate levels of compensation. This means there remains some uncertainty about the interaction between private property rights and water company obligations under the 1991 Act**.**

Wider non-water company actions impacting sewer capacity and drainage

453. **Consumer behaviour and non-water company actions are impacting on the capacity of the sewerage system**. Consumer activity such as the flushing of wet wipes and sanitary products and pouring fats, oils and greases down the sink can result

[614] The Supreme Court Judgement, 'The Manchester Ship Canal Company Ltd (Appellant) v United Utilities Water Ltd (Respondent) No 2'

[615] The Supreme Court Judgment, 'The Manchester Ship Canal Company Ltd (Appellant) v United Utilities Water Ltd (Respondent) No 2'

in sewer blockages, leading to reduced sewerage capacity, increased domestic flooding, and increased pollution incidents.[616] As storm overflows are in place to act as a valve to relieve pressure on the network, all of these factors can contribute to them discharging more frequently into waterways. As such, addressing these challenges is key to reducing the use of overflows. EA data shows 40% of all pollution incidents in England in 2019-20 were caused by blockages and 60% of these were caused by wet wipes.[617] Water UK estimated that each year the water industry spends £200 million clearing blockages in sewers.[618]

454. **A growing population and 'urban creep' creates additional pressure on the drainage and sewerage network**. Existing drainage networks often do not have the capacity to absorb excess surface water as a result of these additional pressures. Responsibility for tackling these pressures sit across a range of organisations, including water companies, local authorities, highway authorities and the EA. The Commission has heard that there is a general lack of effective join-up, which hampers the delivery of a systematic approach to managing pressures.

455. **With respect to surface water run-off, many have called for greater use of Sustainable Drainage Systems (SuDs), which mimic natural water flow and are designed to reduce the impact of rainfall to help reduce the pressure on drainage infrastructure**. National Planning Policy now (from December 2024) highlights that development applications which could affect drainage on or around the site should incorporate SuDs but some argue more still needs to be done to ensure well-designed and well-maintained SuDS are routinely incorporated.[619] The Commission has also heard that there are legislative inconsistencies or gaps in some areas, including the adoption of private sewerage systems, sewer network mapping obligations, lack of water company powers to discharge surface water to water courses, as well as the right to connect surface water to the combined sewer network.[620]

Areas where the Commission is seeking views

456. The Commission is seeking views on stakeholder proposals for changes in relation to the environmental regulatory framework, across the following 5 areas:

- A review and rationalisation of the environmental legislative framework for the water industry
- Legislative changes to address current and emerging threats
- Enhanced monitoring, including reform of Operator Self-Monitoring
- Expanded use of inspections and audits

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[616] Water UK, 'Wipes in Sewer Blockage Study - Water UK'
[617] Environment Agency, 'Water and sewerage companies in England: environmental performance report for 2020 - GOV.UK'; UK Water Industry Research, 'Plastics received by the Water Industry & how best to tackle them through source control'
[618] Water UK, 'Wet wipe ban a step in the right direction - Water UK'
[619] Engagement with the Commission
[620] Engagement with the Commission

- Swifter enforcement

457. We encourage readers to respond to our questions on these topics via Defra's online consultation tool, Citizen Space. The questions on Citizen Space are also included at Annex A: Call for Evidence questions.

Review and rationalisation of the environmental legislative framework

458. **The Commission has heard several suggestions for changes in relation to the environmental legislative framework.**[621] The complexity of the legislative framework may lead to perverse outcomes and high compliance costs for water companies and therefore customers. A consolidation exercise could include exploring opportunities for more outcome-based requirements to encourage greater flexibility and innovation, whilst maintaining and improving levels of environmental ambition.

Legislative changes to address current and emerging threats

459. **Some have called for changes to better tackle current and emerging public health threats.**[622] Current threats include the impact of pathogens, bacteria, viruses and parasites from sewage, but in other areas evidence is still emerging such as on the impact of pharmaceuticals and microplastics. Proposed changes have included calls for enhanced monitoring and potential to the reforms to the regulatory approach to wastewater treatment and sludge.[623] Changes to the regulatory approach for sludge may also significantly benefit the environment by enabling improved regulatory oversight of the spreading of sludge to land. In addition, some have called for bathing water reforms to better protect public health.[624] The UK and Welsh Governments have jointly consulted on reforms to the Bathing Waters Regulations 2013, including assessing the water quality of a site prior to designation.

460. **The introduction of tighter and more extensive standards will have a cost and needs to be considered in the context of the public's willingness to pay**. Achieving high public health standards in all or many waterways may cost more than consumers in general are willing to pay.

461. **Some have argued for changes to the abstraction regime to ensure that the environment is protected while ensuring that the long-term supply and demand for water can be managed more effectively**. In 2021 the UK Government consulted on moving abstraction licensing into the Environmental Permitting Regulations to regulate abstraction in line with other industries such as wastewater.

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[621] Engagement with the Commission
[622] National Engineering Policy Centre, 'testing-the-waters-priorities-for-mitigating-health-risks-from-wastewater-pollution.pdf'
[623] National Engineering Policy Centre, 'testing-the-waters-priorities-for-mitigating-health-risks-from-wastewater-pollution.pdf', Environment Agency, 'Environment Agency strategy for safe and sustainable sludge use - GOV.UK'
[624] Royal Academy of Engineering, 'Upgrades in wastewater infrastructure needed to protect public health'

Enhanced monitoring, including reform of Operator Self-Monitoring

462. **Stakeholders have proposed reforms to the system of Operator Self-Monitoring.** Some have argued for the introduction of more transparent, automated monitoring to check compliance of wastewater assets in its place. Others argue, however, that an expanded programme of in-person inspections and audits will deliver proportionate and effective regulatory oversight of the industry, with a focus on the expanded use of intelligence and data led inspections.[625]

Swifter enforcement

463. **Stakeholders have also called for swifter EA enforcement, in relation to water company non- compliance.**[626] Any changes may build on recent UK government reforms set out being introduced in the Water (Special Measures) Act 2025. Changes may drive long-term adjustments in water company behaviour and reduce investor uncertainty arising from long running investigations.

464. **Changes to the compliance and enforcement regime may need to be supported by expanded capacity and capability in the regulators to deliver a modern regulatory service, as detailed in *Chapter 3***.

[625] Engagement with the Commission
[626] Engagement with the Commission

Delivering clean drinking water

Background

465. **Delivering clean drinking water is fundamental to public health and the wellbeing of our society.** Water companies consistently meet the stringent regulatory standards for drinking water, with 99.97% of samples in England and 99.96% of samples in Wales complying with the regulatory standards in 2023.[627] Internationally, this places England and Wales among the top countries for safe drinking water in the world, alongside Germany, the Netherlands, and Norway, which also maintain similarly high standards.[628]

466. **In England and Wales, water is largely supplied by public water supplies which are delivered by water companies.** There are also some private water supplies (for example, water from boreholes) regulated by local authorities but this is not in scope of the Commission and its Terms of Reference.

467. **Water companies in England and Wales have a duty to ensure that the water they provide is 'wholesome' at the point of supply and that there is no deterioration under Section 68 of the Water Industry Act 1991**. The Water Supply (Water Quality) Regulations 2016 (as amended) in England, and the Water Supply (Water Quality) Regulations 2018 in Wales, set out the regulatory standards for drinking water quality (wholesomeness). This includes compliance with prescribed concentrations and values of a broad range of chemical, microbiological and physical parameters (including nitrate and nitrite). These parameters are set to ensure drinking water is acceptable in appearance, odour and taste, and does not constitute a potential danger to human health.

468. **The Drinking Water Inspectorate (DWI) is responsible for assessing the quality of public drinking water in England and Wales and taking enforcement action if standards are not met**.[629] The DWI also has a duty in relation to sufficiency of supply, from source to tap, under the Water Industry Act 1991.

469. DWI functions include:

- Undertaking technical audits
- Investigation of events, compliance and consumer complaints
- Enforcement action by implementing legally binding undertakings or notices, or by initiating proceedings in court, as appropriate
- Providing guidance on the delivery of requirements of the regulations

[627] The Drinking Water Inspectorate, Drinking Water 2023: The Chief Inspector's report for drinking water in England, Drinking Water 2023: The Chief Inspector's report for drinking water in Wales
[628] Environmental Performance Index, 2024 Environmental Performance Index - Unsafe drinking water
[629] The Drinking Water Inspectorate, Enforcement Policies - Drinking Water Inspectorate

- Commissioning and publishing research intended to provide national evidence and guidance to support regulatory risk assessments about new or emerging issues relating to drinking water safety and quality

- Publishing reports on drinking water quality, providing technical advice and guidance and submitting water quality data, for England and Wales, to ministers and their officials

470. **All compliance failures in the public water supplies are assessed by the DWI using the provisions of the Water Industry Act 91.** Each compliance failure is scored using the Compliance Risk Index (CRI) which is a measure designed to illustrate the risk arising from treated water compliance failures. The CRI figure represents the performance at different parts of the water supply chain including treatment works, supply points, service reservoirs and zones. CRI scores are used by Ofwat as a performance measure (see *Chapter 4*) and companies are financially penalised for a CRI score greater than Ofwat's deadband of two.[630]

471. **Where companies fail to comply, the DWI uses a range of enforcement tools to bring companies back into compliance.** This includes legal instruments, notices, undertakings, information letters, and advice notes. However, where a company carries a persistent risk with respect to drinking water quality, and routine enforcement activities do not seem to be making improvements, the Inspectorate may implement a transformation programme. The purpose of transformation is to increase the regulatory scrutiny of the company to identify non-compliance, likely non-compliance, and deteriorating or insufficient risk mitigation more quickly. The Inspectorate's overall aim is to work with the company so that regulatory actions diminish as the company develops a high standard of self-assurance.[631]

Current issues

472. The Commission has heard 5 broad issues in relation to drinking water standards:

- Water company risk management
- Outdated regulations
- Legacy contaminants
- Extent of regulatory powers in relation to new water supply mechanisms
- Product approvals

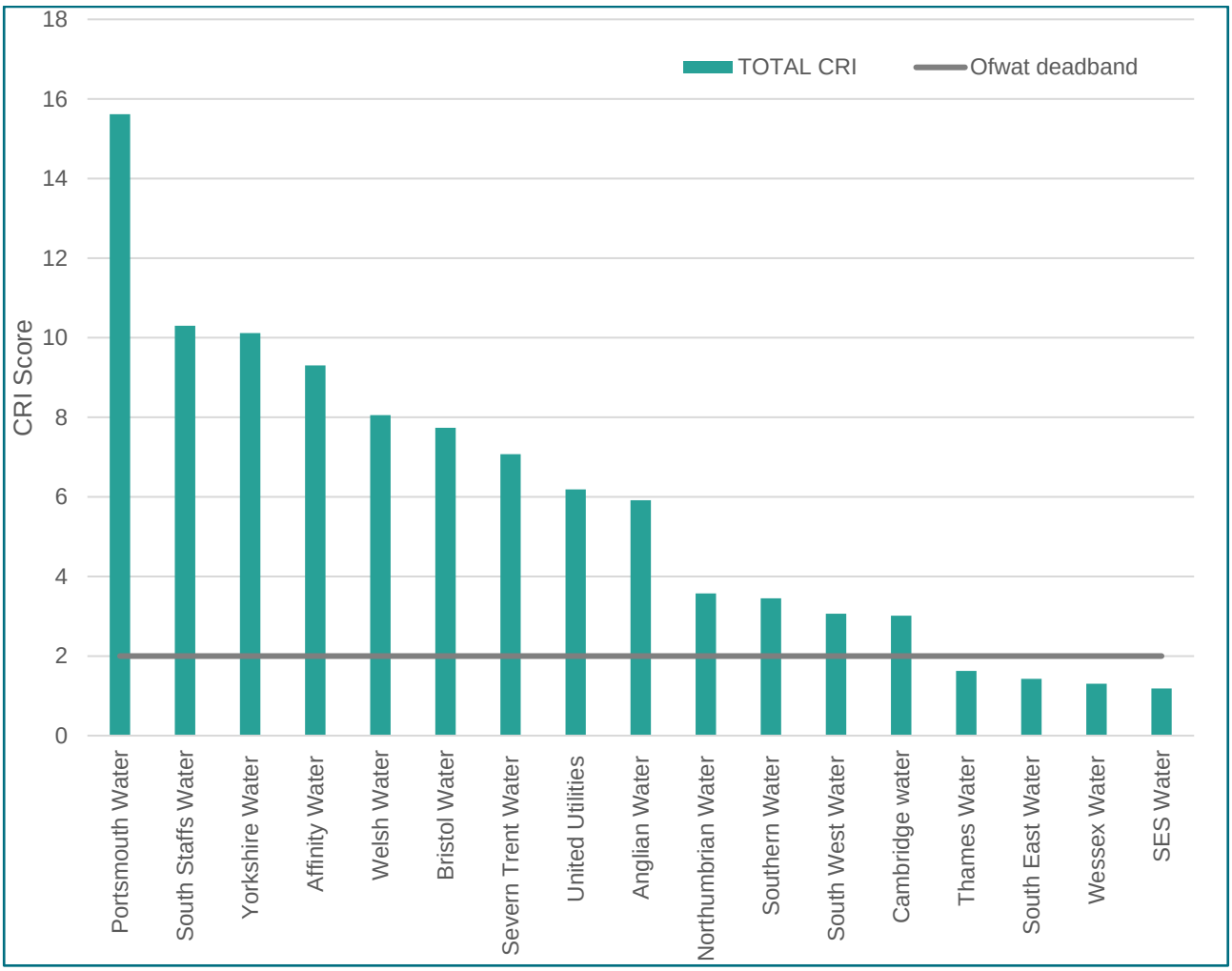
Water company risk management

473. **Despite very high performance by water companies in meeting stringent regulatory standards for drinking water, there may be a need for improvements to risk management**. The Compliance Risk Index (CRI), developed by the DWI,

[630] The Drinking Water Inspectorate, Drinking Water 2023: The Chief Inspector's report for drinking water in England
[631] The Drinking Water Inspectorate, Enforcement Policies - Drinking Water Inspectorate

measures the risk of non-compliance in treated water. It considers failure severity, cause, investigation quality, and mitigation efforts. The DWI has set a CRI target of 2, aiming to ensure that water companies maintain high compliance levels and promptly address any issues that may pose a risk to public health. It is shared with Ofwat as a common performance measure to promote improving water quality. A CRI target of 2 is set as an Ofwat deadband target at the point to which financial penalties apply. Exceeding this target indicates areas where companies need to improve their water quality management practices. While compliance with drinking water standards remains high, in 2023 13 out of the 17 water companies evaluated in England and Wales exceeded the CRI target indicating the need for improvements in risk management as shown in Figure 25.[632]

Figure 25: Compliance Risk Index (CRI) scores, England & Wales, WASCs & WOCs, 2023



Source: The DWI[633]

[632] The Drinking Water Inspectorate, Drinking Water 2023: The Chief Inspector's report for drinking water in Wales. The data includes all regulatory failures with the objective to highlight all risks and all locations which require improvement.

[633] The Drinking Water Inspectorate, Drinking Water 2023: The Chief Inspector's report for drinking water in Wales. Figure created using data provided directly to the Independent Commission by the DWI. South Staffs

Outdated regulations

474. **The current regulations on drinking water quality standards have not been updated by the UK and Welsh governments since 2018.** There is currently no legislative driver or formal mechanism to make sure they are kept up to date (drinking water standards were previously set by EU Directives and transposed into UK law). The EU Drinking Water Directive was updated in 2020, following recommendations from the World Health Organisation (WHO) for drinking water in Europe. It reinforced drinking water quality standards to tackle emerging pollutants.[634] The DWI has formed an advisory group of technical experts to provide recommendations to the Chief Inspector to revise the UK's regulations.[635] This will include recommendations on Poly and Per-fluorinated Alkyl Substances (PFAS). The Water Supply (Water Fittings) Regulations 1999 and their accompanying regulator specifications have also not been significantly updated since 1999. They are designed, in part, to protect human health by preventing a person from installing, connecting, arranging or using a fitting that causes (or is likely to cause) waste, misuse, undue consumption, erroneous measurement, or contamination of water supplied by water companies. It is the decision of the UK, English and Welsh governments whether to bring in new regulations.

Legacy contaminants

475. **Stakeholders have said there is an issue with legacy contaminants, such as lead.**[636] Lead pipes were banned in 1970, with the WHO since making clear there is no safe level of lead in drinking water. However, the current drinking water regulations allow for 10 µg/l of lead, primarily due to the fact a stricter standard cannot be met while lead pipework remains in water company and domestic supply systems and the high costs of replacement.[637] Currently, to meet this standard, phosphate is added to prevent lead from leaching, but phosphate is a finite resource, prices are rising, and it has negative environmental impacts. During Price Review 2024, water companies will trial approaches to reduce exposure which will deliver findings to fully understand the scale of the problem, test estimated costs and consider remedial options (including within buildings) that can be undertaken.

Extent of regulatory powers

476. **The DWI may lack regulatory powers in some areas.** Water reuse and recycling systems fall within the DWI's remit to protect public health. However, the DWI's regulatory toolkit was not designed with these new reuse and recycling systems in mind. As schemes for water re-use, recycling, and the use of dual piped systems increase, there is a need to ensure any potential health risks from the use of different

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Water and Cambridge Water scores are reportedly separately by DWI, reporting 17 WASCs and WOCs. Whereas Ofwat reports South Staffs Water and Cambridge Water scores together, reporting 16 WASCs & WOCs.

[634] World Health Organisation, WHO Parameter Report.pdf

[635] Engagement with the Commission

[636] The Drinking Water Inspectorate, Lead in Drinking Water - Drinking Water Inspectorate

[637] The Water Supply (Water Quality) Regulations 2016

supplies are appropriately mitigated. In addition, there appear to be limitations in the current regulatory powers to investigate and enforce against all third parties who supply water, including providers appointed under Ofwat's Direct Procurement for Customers (DPC) approach, contractors and delivery partners.[638] General powers to gather evidence and subsequent cost recovery for the DWI also only applies to water companies.

Product approvals

477. **There is a challenge with water companies not getting products approved in the drinking water supply chain.** Regulation 31 ensures that all chemicals and construction products used by water companies are approved and do not reduce the protection of human health. All laboratories stopped carrying out regulation 31 testing in 2018-19. Since 2018-19, a backlog of products waiting for approval has been building. This has prevented companies from using new products for repairs and installation of new infrastructure and resulted in a lack of innovation in the supply chain.[639]

Areas where the Commission is seeking views

478. The Commission is seeking views on stakeholder proposals to ensure clean drinking water can continue to be delivered, across the following 3 areas:

- Updates to drinking water quality standards to ensure that world leading standards are maintained
- Changes to the DWI's regulatory powers to better regulate new water supply mechanisms and approaches
- Addressing regulation 31 supply chain challenges to support innovation

479. We encourage readers to respond to our questions on these topics via Defra's online consultation tool, Citizen Space. The questions on Citizen Space are also included at Annex A: Call for Evidence questions.

Updates to drinking water quality standards

480. **The regulations may need to be updated to ensure that world leading drinking water standards in England and Wales are maintained**. A legislative driver may also be required to ensure the regulations are kept up to date. The Commission would welcome views on the scope of the standards to ensure the protection of public health both now and into the future. Also, we would welcome views on how often the regulations should be updated. An approach to legacy contaminants, such as lead, needs to be considered.

[638] Engagement with the Commission
[639] Engagement with the Commission

Changes to the DWI's regulatory powers

481. **As the water industry has evolved there may be a need to review the DWI's regulatory toolkit to ensure the DWI has the powers to oversee public drinking water supplies**. For example, there may need to be an extension of regulatory powers to ensure the DWI can fulfil their role in regulating third parties involved in water supply. Another example is in relation to schemes for reuse and recycled water, where new regulatory powers may be needed to ensure any potential health risks from the use of different supplies can be mitigated.

Addressing supply chain challenges

482. **Product approval capacity and capabilities may need to be expanded to ensure that the approval of infrastructure used in drinking water treatment and distribution isn't held back**. Some argue that the current capacity for regulation 31 could be expanded, reducing backlogs and better enabling investment and innovation.

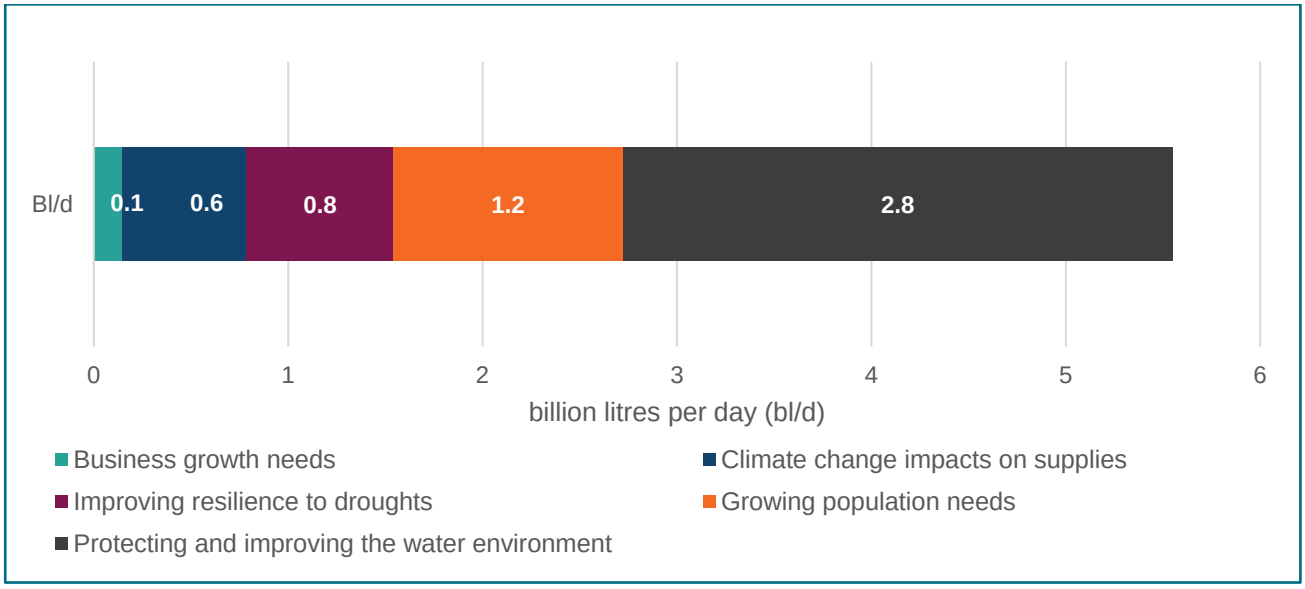
Securing long term water supply

Background

483. **Secure and resilient supplies of water are essential to public health, economic growth and the environment.** There have been significant high-profile issues in recent years such as the drought in 2022 and recent water supply issues affecting housing and economic expansion, for example, in Cambridge.[640]

484. **By 2050, it is anticipated that the public water supply in England and Wales would experience a shortfall exceeding 4.8 billion litres per day (4,860 Ml/d) and 32 million litres per day (32 Ml/d) respectively if water company Water Resources Management Plans (WRMPs) were not delivered**.[641] Figure 26 shows the key drivers of projected total water need in 2050 in England.[642]

Figure 26: Key drivers of projected total water need in England by 2050, in billion litres per day



Source: Environment Agency[643]

485. **The UK and Welsh governments set legislation and policy related to the management of water supply and demand in England and Wales**. This provides a framework to set out how the regulators should carry out their activities, such as through granting abstraction licences, as well as the duties that apply to water companies, such as the duty to produce WRMPs.

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[640] UK CEH, Summer 2022 drought provides warning for future years | UK Centre for Ecology & Hydrology; UK Government, Addressing water scarcity in Greater Cambridge: update on government measures - GOV.UK

[641] Uk Government, A summary of England's revised draft regional and water resources management plans - GOV.UK; NRW analysis provided through engagement with Commission

[642] Comparable data is not available for Wales as regional water resources plans do not cover all of Wales and data from Water Companies is collected on smaller resource zones basis.

[643] Including drivers of future demand set out in Figure 26 which forecasts an additional need for 5,549Ml/d, the revised draft WRMPs indicate that public water supply for England will face a shortfall of 4,860Ml/d in the baseline in 2049-50; Uk Government, Data from: A summary of England's revised draft regional and water resources management plans - GOV.UK

Environmental Regulators – EA and NRW

486. **The EA and NRW have a duty to safeguard water resources in England and Wales, protecting water sources for people and the environment**.[644] This duty is set out in the Water Resources Act 1991 (WRA91) and the Environment Act 1995. This underpins EA and NRW's regulatory activities. As also outlined in *Chapter 2*, to support these activities, the EA published the first National Framework for Water Resources in 2020. It explored England's long-term water needs and set out the scale of action needed across all sectors.[645] This provided a framework for regional water resources groups – collaborative groups of water companies with other significant water abstractors (such as agriculture) – and development of regional water resources plans.

487. **EA and NRW regulate abstraction and impounding activities to manage the use of water resources.** To support these activities, the EA and NRW have developed catchment Abstraction Licensing Strategies (ALS).[646] The strategies provide a consistent and structured approach to local water resources management that protects existing abstraction rights and environmental needs. These ALS support assessments on whether new applications from potential abstractors, such as water companies, can be granted and, if so, what conditions must be in place to protect the environment and existing legitimate water users. Licences are issued with a time limit, normally for between 6 and 18 years. Licences can also be granted for a short duration where EA or NRW think there may be issues with water availability over the longer-term. Once granted, most licence holders are required to submit annual returns to the EA or NRW, and will be subject to compliance checks.[647]

Water Companies

488. **Water companies in England and Wales are responsible for their customers' supply of water in the companies' areas, although, action by government or consumers (for example, in relation to water efficiency policy or behaviour) also plays a role in delivering outcomes**. Section 37 of the Water Industry Act 1991 places a statutory duty on water companies to develop and maintain an efficient and economical system of water supply within their area to meet both current and future needs.

Water Resources Management Plans

489. **Water companies have a statutory duty to prepare (including consultation), publish and maintain plans setting out how they will continue to supply water in their area over at least the next 25 years – called Water Resources Management Plans (WRMPs)**. Water companies also have a duty to produce a drought plan every 5 years. Drought plans are short-term strategic plans setting out how water companies

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[644] Wate Resource Act 1991, Section 19
[645] Environment Agency, National_Framework_for_water_resources_summary.pdf
[646] Environment Agency, Abstraction licensing strategies (CAMS process) - GOV.UK); Natural Resources Wales, Natural Resources Wales / Water available in our catchments
[647] Environment Agency, Apply for a water abstraction or impounding licence - GOV.UK; Natural Resources Wales, Natural Resources Wales / Water abstraction and impoundment licences

will maintain a secure water supply and protect the environment during dry weather and drought.

490. **These plans are guided by a series of government targets as well as guidance produced by Ofwat, EA and NRW.** Water companies must consult Ofwat and the environmental regulators (EA or NRW as appropriate), among other consultees, when producing their WRMPs. WRMPs are finalised only after the (Defra) Secretary of State or Welsh Ministers allows the publication.

491. **WRMPs show the current available public water supply, future demand, and the preferred new supply and demand options to make sure water companies can continue to supply their customers**. This includes:

- **Increasing supply** – this includes new or expanded infrastructure such as reservoirs; desalination plants; water recycling; and water transfers. Price Review 2024 has committed £5 billion toward activities to expand supply. Projects include building 9 new reservoirs with a potential to supply an additional 670 million litres of water a day once completed.[648] Implementing these new water supply proposals represents a significant operational and construction challenge for water companies and their supply chains.

- **Reductions in demand** – by 2049-50, reduction in water consumption and leakage is expected to address over 65% of the supply demand balance deficit across England.[649] Demand reduction is particularly important in the short term in the context of the lag time for new supply projects and can be delivered through:

- **Tackling leakage** from water escaping from assets due to deterioration, poor installation, operational failures like pressure surges, third party damage, and environmental factors. The water industry, coordinated by the industry body Water UK, has made a commitment to halve leakage by 2050 against 2017-18 volumes.[650] Leakage is regulated by Ofwat through performance measures.

- **Water efficiency** – the use of water can be made more efficient through incentivising behaviour change from consumers through targeted engagement and education, through retrofitted water saving devices and targeted programmes, or via mandatory water efficiency standards and labelling. Governments also play a key role in setting water efficiency policy, for example through water efficiency standards, and as described in *Chapter 2*, the UK government has set a long-term target in the Environment Act 2021 to reduce water demand in England.

- **Smart metering** – enables water companies and customers to receive data on water consumption at a frequency such as every hour. Smart meters are key to

[648] 2022/23 prices. Ofwat, Our final determinations for the 2024 price review – Sector summary; New reservoirs in Lincolnshire, Cambridgeshire, Oxfordshire, Somerset, Suffolk, Kent, East Sussex and the West Midlands, plus converting an existing quarry to a reservoir in Somerset.
[649] Environment Agency, A summary of England's revised draft regional and water resources management plans - GOV.UK
[650] Water UK, Water-UK-A-leakage-Routemap-to-2050.pdf

identifying and reducing leakage on customers' properties as well as companies' supply network.

- **Changing public behaviour** – water companies have taken steps to help improve consumer water efficiency through water saving products. The UK government has recently announced an intention to roll out a Mandatory Water Efficiency Label.

492. **Water companies in England and Wales have a statutory duty to undertake an annual review of their WRMPs and share the conclusions with Defra and regulators**.

493. **The EA also publishes an annual report, reviewing progress on key water demand and supply metrics across water companies in England**. This compares progress against targets set in water companies' WRMPs.[651] If the EA and Ofwat deem a water company in England is off-track in delivering its WRMP, then the EA, Ofwat and Defra will send it a joint letter setting out the concern and the specific actions, with deadlines, that the company must take to address the concern. For water companies in Wales, a joint letter from NRW, the EA and Ofwat will be sent.[652] If companies fail to address these concerns, further enforcement action can be taken.

Drought Plans

494. **Water companies in England and Wales have a statutory duty to prepare (including consultation), publish and maintain a drought plan**. These plans show how the water undertaker will supply water to customers during periods of low rainfall, when water resources become depleted and how adverse effects during droughts will be minimised. The EA and NRW produce technical guidelines for the water company to follow in producing their drought plan and are statutory consultees on these plans.

495. **During a drought, water companies may apply to EA or NRW for Drought Permits to authorise a new abstraction or modify an existing licence**. Water companies also have powers to impose Temporary Use Bans (known as hosepipe bans) during droughts.

Ofwat

496. **Ofwat is responsible for ensuring the duty on water companies to supply water to customers is properly carried out.** Ofwat must balance this role with several other objectives: protecting the interests of consumers, ensuring the long-term resilience of water supply systems and that companies are able to finance the proper carrying out of their functions, in particular by securing reasonable returns on their capital. Ofwat uses several tools to carry out this role.

497. **Ofwat works with the EA and NRW to develop joint regulatory guidance for WRMPs**. It sets performance measures related to operational targets such as leakage. The industry in England, coordinated by Water UK, has developed a leakage roadmap

[651] Environment Agency, Water resources 2023-2024: analysis of the water industry's annual water resources performance - GOV.UK
[652] Ofwat, WRMP19 Annual Review - Ofwat

with the aim of reducing leakage by 50% by 2050.[653] Ofwat has an enforcement duty in relation to water companies which fail to comply with their water supply duties.

498. **Ofwat, together with the EA and DWI, set up the RAPID programme to accelerate the development of new water infrastructure to promote the development of national water resources**. It uses a gated process to support water companies to develop large and complex infrastructure (such as reservoirs or water transfers), with a single interface to engage with all relevant regulators.[654] Further detail is provided in *Chapter 3*.

Current Issues

499. The Commission has heard 3 broad issues in relation to securing the long-term supply of water:

- Long term planning
- Oversight of delivery
- Challenges in demand reduction

Long term planning

500. **Coordinated long term plans for water resources have been implemented since 2009, however the commission has heard of challenges with the planning framework (described in *Chapter 2*)**. There has been greater collaboration between regulators in relation to long term water supply through the National Framework for water resources for England and RAPID, and examples of collaboration between water companies.[655] However, water resource planning is conducted regionally, and there appear to be some gaps in join-up at a national level in terms of policy and oversight, particularly in common planning scenarios, such as growth. Water companies are not the only abstractors of water, with agricultural and industrial users abstracting water but the WRMP framework only looks at water company actions therefore it does not enable a full view of demand on water supply.[656]

501. **In addition, in a review commissioned by Ofwat into water resources planning a number of challenges with the existing planning approach were noted**:[657]

- A gap may emerge between planning and delivery due to a variety of factors such as limited consideration of commercial and delivery factors in the WRMP process; lack of evidence to support options and uncertainty on regulatory approvals during the optioneering process.

[653] Water UK, Water-UK-A-leakage-Routemap-to-2050.pdf
[654] Ofwat, RAPID - Ofwat
[655] Environment Agency, Meeting our future water needs: a national framework for water resources - GOV.UK
[656] National Audit Office, Water supply and demand management
[657] Ofwat, Water-resource-planning-case-for-change-independent-report-Jan-2024.pdf

- Water resources planning frameworks may be duplicative and miss opportunities to bring synergies with other plans such as drainage and wastewater plans but also misses opportunities to bring cross-sectoral links.[658]

- Complexity and prescriptive nature of the requirements for the WRMPs process may limit creativity as well as preventing local judgement and assumptions in decisions. This may prevent options that secure the best long-term options from being selected.

502. **The Commission has also heard that WRMPs cater for reasonable growth assumptions that are in local authority plans - as predicted by ONS**. Policy changes and new technology (such as artificial intelligence) are often uncertain and can lead to changes in economic development in an area. There may be a need to rethink how growth is planned to better take account of the unpredictability on demand and ensure that economic growth and development can be supported.

Oversight of delivery

503. **There may be inadequate statutory and regulatory mechanisms to ensure that water companies deliver their WRMPs and the specific projects within them**. Ofwat has enforcement powers in relation to water companies' general statutory duty under section 37 of the Water Industry Act 1991. However, these powers do not extend to enforce delivery of non-statutory projects under WRMPs (e.g. reservoirs). A water undertaker's primary duty regarding water supply is to ensure that they supply water to all premises within their area and to make supplies available to those who demand them. When issues lead to water supply interruptions, regulators have powers to impose sanctions on water companies and ensure that consumers receive compensation. However, these powers do not ensure that water companies address the underlying issues to minimise or prevent supply interruptions.

Challenges in demand reduction

504. **There is some evidence that water demand reduction interventions are facing implementation challenges.** Firstly, while there was a sharp reduction in leakage following privatisation, in the two decades since, progress on leakage has largely plateaued, Ofwat data on leakage shows a decrease of around 10% over the 20 years between 2000-01 and 2021-22.[659] Public consumption of water needs to be reduced, and evidence suggests current per capita consumption levels are greater than those pre-pandemic as a result of changing water use.[660] Metering, particularly smart metering, may help to reduce consumption but currently only 63% of household properties in England and Wales are metered, and approximately 12% in England are

[658] Ofwat, Water-resource-planning-case-for-change-independent-report-Jan-2024.pdf
[659] Ofwat, Leakage in the water industry - Ofwat; Analysis of Ofwat Data from Leakage Dataset - March 2023 - Ofwat,
[660] Ofwat, Ofwat company performance report 2022-23

smart metered.[661] However, Ofwat's Price Review 24 has set out plans for over 10 million installations and upgrades of smart meters.[662] This also included a £100m Water Efficiency Fund to support demand reductions.[663]

505. **Non-household consumption makes up 20% of water demand in England and progress appears to be lagging behind the reduction of 9% set by previous government targets by 2037-38 from 2019-20 levels (currently WRMPs achieve a 6.1% reduction)**.[664]

Box 19: Water demand in industry

The largest five oil refineries in England and Wales (Fawley, Pembroke, Stanlow, Prax Lindsey and Humber) are all highly dependent on water. These five sites are all ranked in the top 7 highest consuming users in the non-household market, consuming a total of 93 Megalitres of water per day or 3.6% of the total in the non-household market.[665] Oil refineries are an example of an industrial sector where the majority of water 'consumed' is actually used for cooling purposes. Chemicals are then added to water supplies on site to the water to remove minerals to avoid damage to tanks from the cooling water. This cooling water will then flow into the sewerage system as wastewater. This essentially clean water will in many cases discharge into combined sewer systems, adding to the challenges of overloaded sewers. Oil refineries are critical national infrastructure, so their water supply will be prioritised in a water shortage - even if houses have no water. They also use a lot of water, many of them are on 'bulk tariffs', which means that their water gets cheaper the more they use – there may be limited incentives to reduce usage.

Areas where the Commission is seeking views

506. The Commission is seeking views on stakeholder proposals for changes to improve the regulatory model for securing long-term supplies of water, across the following 3 areas:

- Integrated water management framework to improve the management of the water system across sectors and outcomes (as set out in *Chapter 2*)
- Changes to regulatory responsibilities or introduction of new requirements or standards to oversee delivery of the water company supply and demand activity
- New water demand and efficiency policies

[661] CCW, 'Water Mark 2024'; Targets set in Defra plan for water and Environmental Improvement Plan; Environment Agency, A summary of England's revised draft regional and water resources management plans - GOV.UK
[662] Ofwat, Our final determinations for the 2024 price review – Sector summary
[663] Ofwat, Water Efficiency Fund - Ofwat
[664] Non-household consumption includes water use of properties non classed as households. This includes buildings such as businesses, schools, hospitals and student accommodation. Environment Agency, Water resources 2023-2024: analysis of the water industry's annual water resources performance - GOV.UK
[665] Evidence provided to the Commission

507. We encourage readers to respond to our questions on these topics via Defra's online consultation tool, Citizen Space. The questions on Citizen Space are also included at Annex A: Call for Evidence questions.

Integrated water management

508. **As set out in more detail in *Chapter 2*, the Commission is seeking views on whether improvements are needed to integrate water management – a system planner role has been suggested as a way of overcoming siloed decision-making in the water system**. For water resources this may bring synergies in great long-term planning across regional boundaries and help ensure that water resource planning can be more responsive to emerging national priorities such as the growth of new sectors, as well as housing demands. This would also take account of abstraction by non-water company actors, which aren't currently considered in WRMPs, ensuring that the overall approach to securing resilient supply considers the use of water from these users.

Changes to regulatory responsibilities or introduction of new requirements to oversee delivery of the water company supply and demand activity

509. **Stakeholders have suggested that there is a need to review regulatory responsibilities in relation to the oversight and delivery of WRMPs and associated operational targets, such as leakage**. Whilst the EA and NRW have the principal duty across the regulators to ensure the management and conservation of water resources they may not have all the regulatory levers or functions to ensure that the delivery of water company plans are fulfilled. In addition, some have argued for an expansion of resilience standards for water supply to minimise the impact of supply interruptions on consumers.[666]

510. **As noted earlier in this chapter some have called for changes to the abstraction licensing regime.** This may help protect the environment to ensure that water is not over abstracted. It may also enable a more coordinated, streamlined regulatory approach, allowing the EA and licence holders to benefit from modern regulation and support economic development. There may also be opportunities to enable increased adoption of water trading, as has been done in countries such as Australia.

New water demand and efficiency policies

511. **The commission would like to hear views on whether there needs to be a stronger push from governments and regulators to drive down water consumption**. This could be delivered in many forms including stronger water efficiency targets and policies; increased public information campaigns to drive behaviour change as well as driving down the use of potable water in industrial activity. The commission has heard suggestions for increased adoption of 'reclaimed water' use for industrial activity that does not require drinking water standards of water consumption. For example, large users of water, such as oil refineries are still provided with water at drinking water quality. There could be an opportunity to explore the use

[666] National Infrastructure Commission, NIC-Resilience-Standards-Report-Final-190924.pdf

of non-potable sources to supply such economic activity and therefore reducing demand on drinking water supplies.[667]

[667] Water News Europe, water usage data centres • Water News Europe; Data Centre Magazine, Reclaimed wastewater to be used at 20 AWS locations | Data Centre Magazine

Infrastructure resilience and delivery

Background

512. **The provision of safe drinking water and effective wastewater management requires resilient and secure infrastructure and supply chains**. Water companies rely on physical infrastructure to transport and treat water and sewerage, as well as to manage the circumstances under which effluent is released. Failures to build, supply, maintain or defend this infrastructure can have significant consequences for people and the environment. Historic maintenance issues as well as future challenges from climate change and population growth, changes to the threat environment, and constraints on supply chain are all likely to place pressure on water company infrastructure. The Commission is seeking views on the adequacy, now and for the future, of the current regulatory and legislative framework for ensuring resilient and secure infrastructure and supply chains.

Box 20: Future pressures

More extreme weather events, such as droughts, may have implications for the way infrastructure is managed. The UK Climate Projection demonstrated a trend towards drier summers on average, particularly in the south.[668] The NIC estimates that there is a 1 in 4 chance over the next 30 years that large numbers of households will have water supplies cut off for an extended period due to severe drought.[669] Similarly, the 2021 UK Climate Change Risk Assessment highlights that water infrastructure, such as reservoirs, pipelines, and water treatment sites are all at risk from increases in the frequency and intensity of flooding. It also points to risks to buried water infrastructure, such as mains pipes, with damage potentially becoming more frequent due to flooding and subsidence. The report also outlined the strong interdependencies between water and other infrastructure sectors. Water infrastructure, for example, could be affected by failures of other assets such as energy or computer systems, due to extreme weather.[670]

Changes in population will also increase demands on infrastructure. From 2021-36 the UK's population is projected to grow by 9.9% (6.6 million people in absolute terms).[671] Additional demand for water may put existing assets under increasing pressure and increase deterioration from overuse. The UK Climate Change Risk Assessment 2017 identified a risk to industry from abstraction and reduced water availability.[672]

Infrastructure resilience

513. **Operational (infrastructure) resilience is defined by Ofwat as 'the ability of an organisation's infrastructure, and the skills to run that infrastructure, to avoid,**

[668] Met Office, UK and Global extreme events
[669] National Infrastructure Commission, Preparing for a drier future, 2018
[670] UK Climate Risk, Water, 2021
[671] Office for National Statistics, National population projections
[672] The CCC, UK Climate Change Risk Assessment, 2017

cope with and recover from disruption in its performance'.[673] To support infrastructure resilience, companies need to be able to both identify and manage risks.[674] This includes understanding what infrastructure they have, and the impact when infrastructure fails. It also includes maintaining and replacing infrastructure to reduce the likelihood of failure, alongside having emergency recovery mechanisms in place when infrastructure does fail.

514. **Companies in England and Wales are already subject to a variety of requirements on infrastructure resilience**. Performance metrics are reported by companies to assure compliance, while Ofwat sets financial incentives for resilience:

Requirements – companies in England and Wales are subject to overarching legal requirements to provide and maintain water and sewerage systems.[675] Companies are also legally required to map their asset base and consider future resilience when planning infrastructure spending.[676] Alongside these legal requirements, Ofwat, through its ODI mechanism (see *Chapter 4*), sets outcome-based targets on metrics related to asset resilience (for example reducing sewer collapses). Finally, companies are required to meet minimum standards in the event of disruption. For example, should there be interruptions to piped water supply, water companies must provide at least 10 litres of water per person per day to affected consumers within the first 24 hours, rising to 20 litres after five days, and maintain this until the piped supply is restored.[677]

Regulatory activity – the EA and NRW can inspect permitted assets to check whether the asset complies with the permit. However, there are generally no on-site inspections which cover asset health by any regulator. EA and NRW permits cover activities which can have a direct impact on the environment (for example discharging waste or abstraction of water bodies).[678] Some assets, including unpermitted assets, and underground sewers and pipes, are not inspected by any regulator. The DWI also conducts inspections in relation to compliance with water quality, treatment and distribution processes, security requirements, and emergency planning.[679] Ofwat does not conduct any inspections but does require companies to report information annually on frequency of some asset failure metrics through the ODI mechanism (for example frequency of sewer collapses).

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[673] Ofwat, Operational resilience
[674] Ofwat, Operational resilience
[675] There are exemptions to the mapping duty in Section 199 of the Water Industry Act 1991. Under Section 198 of the Water Industry Act 1991, companies are required to keep records of the location of 'every resource main, water mains, or discharge pipe'. In Section 199, there is the requirement to map 'every public sewer'.
[676] Under new section 94A of the Water Industry Act 1991, sewerage undertakers have a statutory obligation to prepare, publish, and maintain a Drainage and Sewerage Management Plan. Within a sewerage undertakers' DSMP, they must address the resilience of their network.
[677] Under the Security and Emergency Measures Direction 2022, companies are required to plan for circumstances where, in the event of unavoidable failure, minimum supply is provided by alternative means. Supply interruptions - Ofwat
[678] Commission engagement with EA and NRW
[679] DWI, SEMD Enforcement Policy, DWI, Enforcement Policy

Incentives – Ofwat sets allowances for maintenance and replacement of assets as part of the 'base' element of the 5 yearly process. As well as setting the allowance for maintenance, Ofwat also financially rewards and penalises companies for meeting or missing their asset resilience metrics through the ODI and mechanisms.

Infrastructure security

515. **Changes in the global threat environment have highlighted the importance of security alongside infrastructure resilience.** The Director General of MI5 has recently highlighted how threats from terrorism and autocratic states present an increasingly complex threat environment for the UK's security.[680] This strengthens the need to ensure CNI is not just resilient to operational failure – but secure to hostile threats. In the water sector, this appears to be particularly true for cyber security. The 2017-21 Water Sector Cyber Security Strategy, for example, highlighted 'credible cyber threats to UK CNI, including the water sector'. While not all cyber incidents will have operational impacts, severe attacks could lead to impacts on drinking water, wastewater services, and the environment.[681]

516. **Alongside infrastructure resilience, water companies are subject to 2 broad sets of requirements on infrastructure security**:

- **The Security and Emergency Measures Direction – SEMD** is issued using the powers of the Secretary of State and Welsh Ministers under the Water Industry Act 1991 to direct companies in the interest of national security and to mitigate the effects of a civil emergency. SEMD applies to all water companies and wholesale suppliers, regardless of size. SEMD, however, does not apply to business retail market suppliers, Infrastructure Provider Project Licensees, private suppliers or Competitively Appointed Providers operating under the DPC model *(*see *Chapter 4* for more detail on competition initiatives). Under SEMD, companies are required to report against 33 outcomes covering contingency planning, emergency preparedness, security, testing and exercising, and implementation of plans to ensure continued function of water supply or sewerage. Companies self-assess their performance against SEMD outcomes annually, with assessment and enforcement undertaken by the DWI in relation to water supply risks. While SEMD is focused on water supply, some outcomes are related to sewerage risk, for which the DWI has an agreement with the EA and NRW for support where necessary. SEMD also sets higher requirements on CNI. For example, companies must undertake an annual audit for assets which are designated as CNI.[682]

- **Network and Information Systems** – Large water companies are also subject to specific requirements for cyber security under NIS. These requirements are defined in legislation for water companies who produce drinking water for more than 200,000 people.[683] NIS requirements are implemented through meeting the basic and

[680] MI5 – The Security Service, Director General Ken McCallum gives latest threat update, 2024
[681] Defra, Water Sector Cyber Security Strategy, 2017
[682] The Security and Emergency Measures Direction 2022
[683] The Network and Information Systems Regulations 2018

enhanced threat profiles, using the Cyber Assessment Framework designed by the National Cyber Security Centre.

517. **The DWI is responsible for regulating companies under SEMD and NIS on behalf of the Secretary of State (for England) and the Welsh Ministers**. To date, 2 enforcement orders have been served under SEMD.[684] Ofwat is responsible for setting the allowance of SEMD and NIS costs which companies are allowed to charge customers for. At Price Review 2024, Ofwat allowed £455 million to increase cyber resilience and £747 million to improve the physical security of critical sites and for security planning.[685]

518. **Alongside water sector specific regulation, the water industry sits within a broader, cross-government framework on security.** Water is designated as a CNI sector. Defra and the Welsh Government are responsible for deciding which assets should be designated as water CNI in England and Wales. Cabinet Office is responsible for managing overarching policy on CNI sectors, including by managing and updating a National Risk Register.[686] A National Risk Register for Wales and a range of other civil contingencies products are produced by the Welsh Government National Security and Resilience Division.[687] The Civil Contingencies Act 2004 is also applicable to water companies. Companies are designated as Category 2 Responders under the Act, which places a legal duty on them to plan for emergencies and work with Category 1 responders such as the police, the EA and NRW, and local authorities in Local Resilience Forums.[688]

Supply chain disruption and deliverability

519. **The smooth operation of supply chains is critical to the provision of water and effective management of wastewater.** Supply chains can be complex, cross national boundaries and sometimes take many years to build effectively. Failures in supply chains can lead to service disruptions, as well as constraining deliverability of new infrastructure.

520. **The supply chain of the water industry covers a broad range of infrastructure providers plus the wider service and technology sectors that support it**. For example, the water industry is heavily reliant on the construction industry for the provision of new infrastructure, and the energy and chemical sectors for continuity of service.

521. **Supply chain resilience is also overseen through SEMD and enforced by the DWI.** SEMD requires companies to "make provision for strategically stored reserves of sufficient types and quantities of equipment and materials necessary to enable the company to continue to carry out its water supply or sewerage functions". However, current regulation is focused on outcomes and does not specify that specific amounts

[684] Commission engagement with Defra
[685] Ofwat, Price Review 2024 Final Determinations, 2024
[686] Commission engagement with Defra
[687] Commission engagement with Welsh Government
[688] Civil Contingencies Act 2004

of commodities must be stored, nor the conditions under which reserves are held (within the UK or overseas) which is an identified weakness and serious risk. Nor does it extend into the construction sector. Companies are required to confirm they comply with all aspects of SEMD on an annual basis. [689]

Current issues

Infrastructure Resilience

522. The Commission has heard 5 broad areas where issues have been raised in relation to infrastructure resilience:

- Potential gaps in regulatory oversight
- Limited understanding of companies' asset bases
- A lack of clear standards
- Conflicting evidence on infrastructure resilience outcomes
- Questions over the impact of Ofwat's funding decisions

Potential gaps in regulatory oversight

523. **The Commission has heard serious concerns about the impact of infrastructure failure on consumers and the environment.** In December 2024, 2 separate incidents led to a loss of water supply in Surrey and Southampton and were caused by faults at water treatment works.

524. **The Commission has also heard that there is uncertainty over which regulator is responsible for managing the risk of such failure**. Responsibility for monitoring infrastructure resilience appears to be spread across the regulators, with the EA and NRW undertaking inspections of assets to verify permit compliance, the DWI taking action in relation to the maintenance of drinking water supply systems and SEMD, and Ofwat collecting data on asset failure. While Ofwat is ostensibly responsible for infrastructure resilience through its 'resilience' objective, it does not, in practice, appear to lead or coordinate regulatory assurance of companies' infrastructure.[690] In other sectors, such as the nuclear sector (see Box 21 below), there appear to be more clearly defined responsibilities for infrastructure resilience.

Box 21: Operational resilience – the Office for Nuclear Regulation

The UK's nuclear industry encompasses various activities, including electricity generation, fuel manufacturing, decommissioning of nuclear sites, and defence facilities. The nuclear industry carries inherent operational risks, including radiation exposure, waste contamination, nuclear accidents, and wider security threats. Failures to

[689] The Security and Emergency Measures (Water and Sewerage Undertakers and Water Supply Licensees) Direction 2022
[690] Engagement with the Commission

oversee nuclear infrastructure could significantly impact the environment, public health, national security, and energy supplies.

The Office for Nuclear Regulation is responsible for issuing licences to the nuclear industry in the UK. The Office for Nuclear Regulation is responsible for regulating the safety and security of sites with nuclear activity, of which there are 37 in the UK. It does this by granting a licence under the Nuclear Installations Act 1965. Each licence contains a set of 36 conditions which form the basis of regulation and include, for instance, requirements to train staff adequately, respond to incidents, and carry out maintenance and tests.[691]

The Office for Nuclear Regulation uses a combination of their assessment and inspection functions to judge whether nuclear site operators are reducing risk. This is alongside monitoring the performance of the internal regulator of the operator. The Office for Nuclear Regulation appoints nuclear inspectors who visit sites to assess safety cases and resolve technical queries as well as conduct structured inspections. Inspections are targeted based on a risk analysis. Where an operator is not meeting licence conditions or their safety standards are not meeting legal requirements, the Office for Nuclear Regulation will implement an escalatory enforcement approach which is appropriate to the shortfall.[692] The technical standards which the Office for Nuclear Regulation uses in its regulation, including the Safety Assessment Principles, the Technical Inspection Guides, and the Technical Assessment Guides, are regularly updated and published to ensure that all stakeholders are aware of expectations.[693]

Limited understanding of companies' asset bases

525. **The Commission has heard concerns about water companies not understanding their asset bases**.[694] The Commission is aware that legal requirements on companies to monitor infrastructure are incomplete. For example, although companies are required to map their infrastructure, there is an exception for sewerage undertakers in relation to drains, sewers and disposal mains laid before 1 September 1989 if the undertaker does not know of, or have reasonable grounds for suspecting the existence of the sewer, or if it is not reasonably practicable for the undertaker to discover the course of the sewer.[695] Companies have also indicated some gaps in mapping could be driven by the transfer of private sewers from 2011 onwards which were not previously mapped. [696]

[691] Office for Nuclear Regulation, Nuclear site licensing
[692] Office for Nuclear Regulation, A guide to Nuclear Regulation in the UK, 2016
[693] Office for Nuclear Regulation, Regulatory Guidance
[694] Engagement with the Commission
[695] Section 199(7) Water Industry Act 1991
[696] The Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011; Engagement with Water Companies

A lack of clear standards

526. **The Commission has heard concerns about the absence of specific infrastructure resilience standards in the water industry.** The NIC has observed there are no standardised infrastructure resilience standards in the water industry, or a consistent understanding of asset health across the industry.[697] This means that the way one company manages their infrastructure can differ to other companies. Ofwat reports that companies have an embedded Asset Management Framework which, in most cases, is aligned to the International Asset Management Standard (ISO 55001).[698] However, it is not clear whether the use of this standard has improved outcomes in the sector.

527. **Ofwat has taken steps to clarify expectations over infrastructure resilience, although some have commented that more needs to be done**. In December 2024, Ofwat published a roadmap for improving the understanding of asset health across the water industry by improving data collection, collaboration, and long-term planning.[699] Ofwat's roadmap sets out the steps that Ofwat intends to take to develop an 'integrated monitoring framework' over the Price Review 2024 period, with a commitment to make in-period price adjustments where sector-wide asset health issues are identified. The roadmap includes work to develop a common asset health model to standardise the approach and methodology used by water companies, along with the development of asset inventories and asset condition surveys. Ofwat has pointed out that, where robust condition data exists, as in the case of mains, this has led to adjustments to allowances in Price Review 2024. The absence of this type of data for other assets, such as treatment works and service reservoirs, has restricted potential adjustments for these assets. Ofwat intends to collect asset condition and workload data across a wide range of assets throughout the 2025-30 period. It is unclear, however, whether these reforms go far enough. Many stakeholders, including companies, industry bodies, and eNGOs, have requested that government set more explicit standards.[700]

Box 22: Private sewers

Alongside issues in relation to the management of water company infrastructure, the Commission also understands private sewers pose resilience risks.

In 2011, the UK government legislated for eligible private sewers to be adopted by water companies.[701] However, there appear to have been exemptions in this legislation – for example for sewers on Crown Estate land – meaning not all sewers have been transferred. In 2012, it was estimated that there was approximately 543,000 kilometres of sewerage under English and Welsh sewerage companies' ownership, following the transfer of

[697] National Infrastructure Commission, Developing resilience standards in UK infrastructure, 2024
[698] Ofwat, Asset management maturity assessment, 2021
[699] Ofwat, Roadmap for enhancing asset health understanding in the water sector, 2024
[700] Commission engagement with water companies and regulators
[701] The Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011

220,000 kilometres of private sewers in 2011.[702] An estimated 208,000 kilometres of private sewers were not connected to the public system and were therefore out of scope for adoption in 2011, this figure may have increased since.[703]

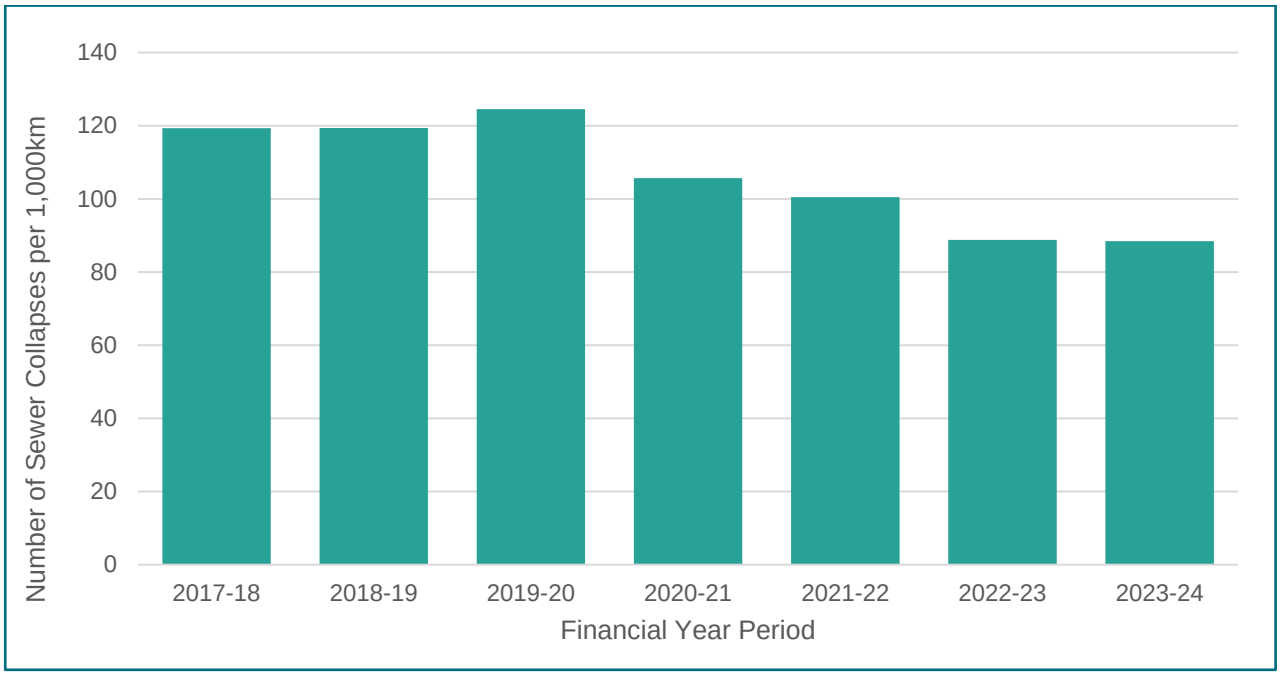
The Commission has heard a number of concerns surrounding the maintenance of these private sewers.[704] Private sewers are out of scope of this commission, but they have risks that could impact the wider system. Although the scale of the problem is unclear, private sewers are associated with increased risks of blockages and failure, leading to incidences of pollution, flooding, and contamination of clean wastewater.[705]

Conflicting evidence on infrastructure resilience outcomes

528. **The Commission has heard conflicting evidence and views on the effectiveness of the current framework in ensuring the resilience of infrastructure**.[706] Ofwat data on asset outcomes appears to show stable or improving infrastructure resilience. Ofwat uses 3 asset failure metrics to track infrastructure resilience: sewer collapses, mains' repairs (bursts), and outages. While these metrics can vary significantly between water companies, over recent years they appear to point towards stable or improving infrastructure resilience. For example, between 2017-18 and 2022-23, the number of sewer collapses per 1,000 kilometres of pipes decreased by around 26% (Figure 27), while mains repairs (bursts) per 1,000 kilometre of pipes show a more mixed picture, fluctuating around 2,400 repairs per 1,000 kilometres in the same period (Figure 28). Average unplanned outages as a proportion of total water company production capacity have reduced over the period 2017-18 and 2022-23 from 6.7% of total production capacity to around 4% (Figure 29).[707]

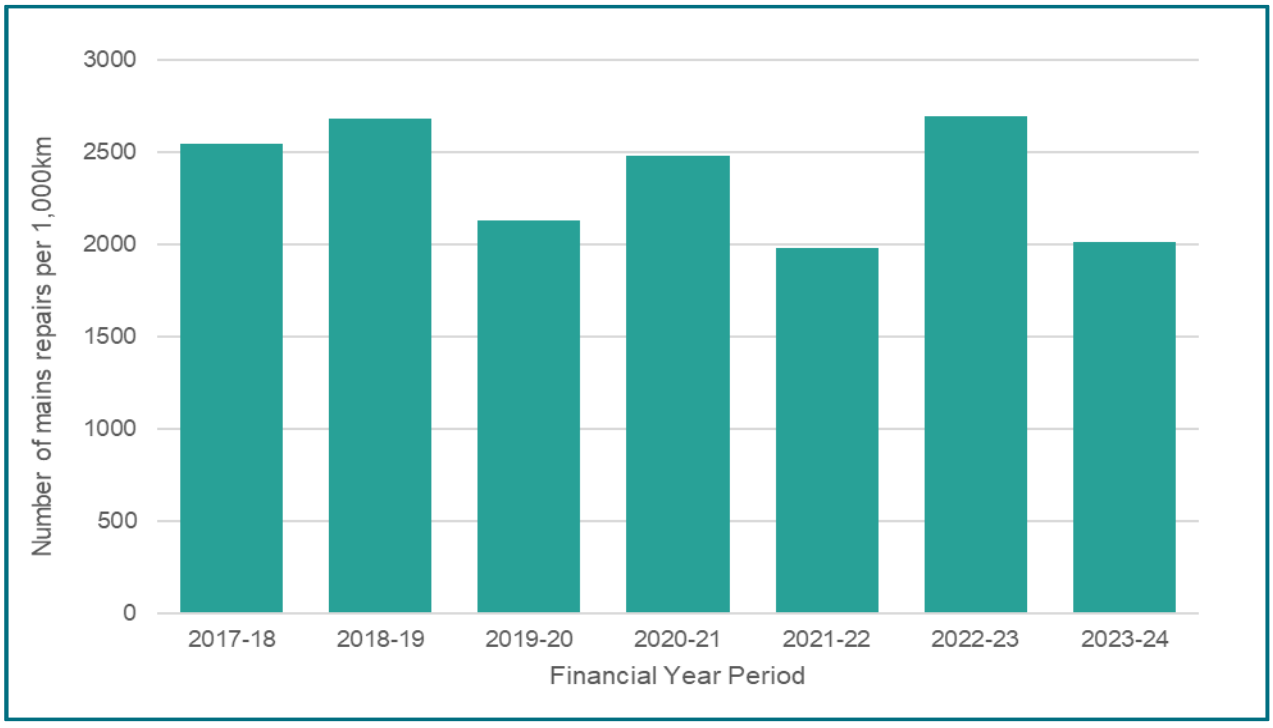
[702] Defra, Waste water treatment in the United Kingdom, 2012
[703] Defra, Impact Assessment – Transfer of private sewers, 2011
[704] Commission engagement with water companies
[705] Defra, Impact Assessment – Transfer of private sewers, 2011
[706] Commission engagement with water companies and infrastructure experts
[707] Analysis of Ofwat Performance Commitment Data 2024 and Historical Trends Data

Figure 27: Number of sewer collapses per 1,000 km of sewers, England & Wales, WASCs Only, 2017-18 to 2023-24



Source: Independent Commission analysis[708]

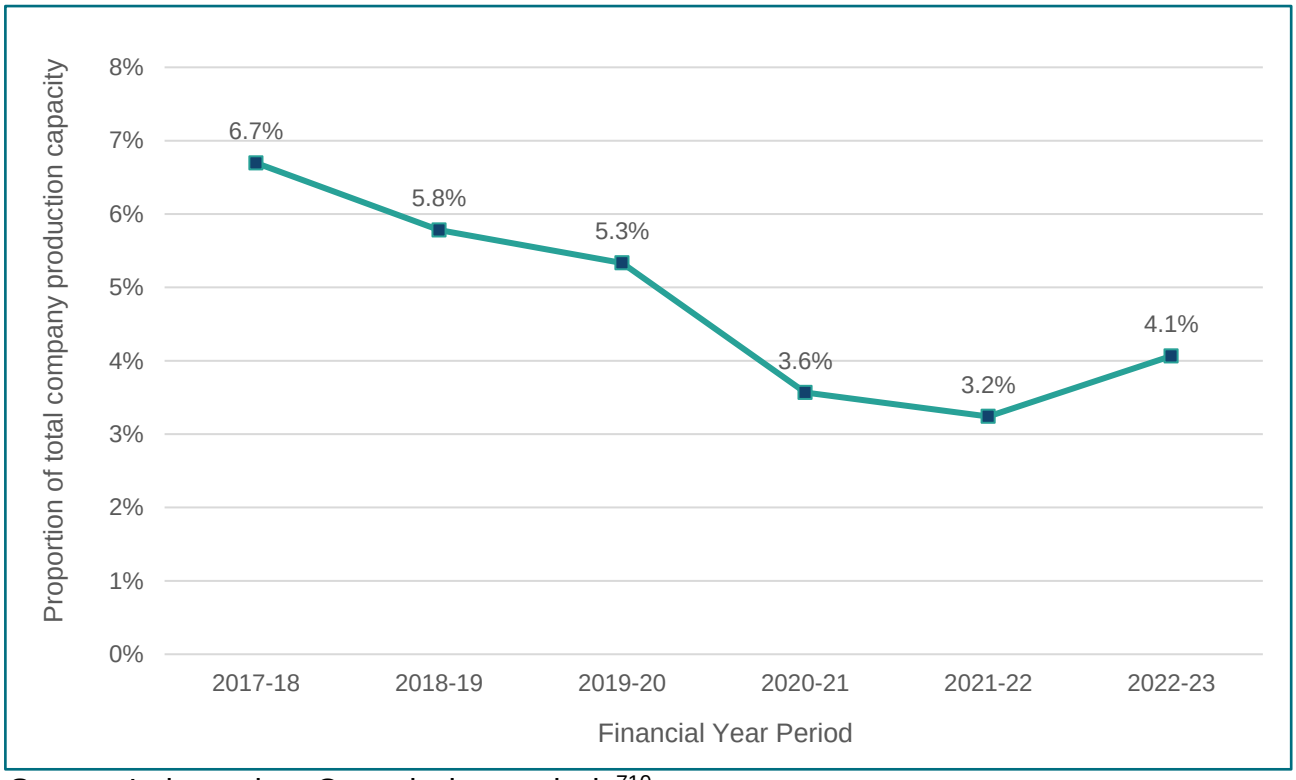
Figure 28: Mains repairs per 1,000 km of mains, England & Wales, WASCs & WOCs, 2017-18 to 2023-24



Source: Independent Commission analysis [709]

[708] Analysis of Ofwat, Water Company Performance Report 2023-24 ; Ofwat, Historical Performance Trends for _R24 V3.0, 2024. Datasets combined to produce extended time series.
[709] Analysis of Ofwat, Water Company Performance Report 2023-24; Ofwat, Historical Performance Trends for _R24 V3.0, 2024. Datasets combined to produce extended time series.

Figure 29: Unplanned outages as a proportion of total company production capacity, 2017-28 to 2022-23, %



Source: Independent Commission analysis[710]

529. **However, it is unclear whether Ofwat's data provides an accurate representation of the sector's true infrastructure resilience.** For both England and Wales, Ofwat appears to only track when assets have failed, rather than providing an explicit assessment of condition of assets, or measuring preventative activity taken by companies.[711] As discussed above, Ofwat's key metrics on asset health are mains' repairs, unplanned outages, and sewer collapses. There are other metrics, such as pollution incidents and discharge compliance, which could be impacted by infrastructure management, but are primarily considered environmental outcomes. The Commission has also heard Ofwat data is not adjusted for external factors such as environmental conditions that impact year-on-year data. For example, the limited freeze-thaw or extreme weather conditions during 2023-24 resulted in fewer bursts, which could potentially skew results to present a falsely positive position on infrastructure resilience.[712] In addition, the NIC has flagged that Ofwat's metrics contain significant lags. Investment in the maintenance and replacement of assets, for example, can take time to materialise as a reduction in Ofwat's metrics.[713] Moreover, water infrastructure can have a long lifespan, so major structural failures could take a long time to be salient in Ofwat's metrics.

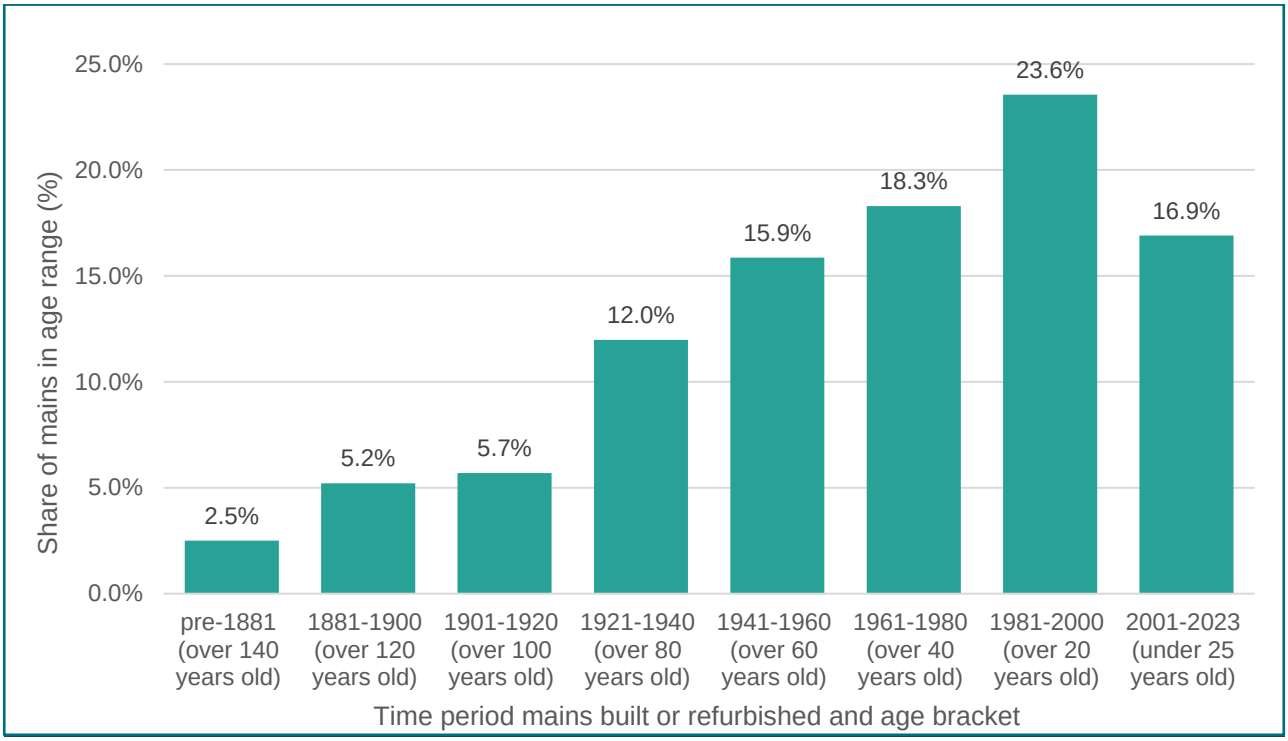
[710] Analysis of historical trends data. Averaged across water companies
[711] Ofwat, Water company performance report 2023,24, 2024
[712] Ofwat, Water company performance report 2023-24, 2024
[713] National Infrastructure Commission, Developing resilience standards in UK infrastructure, 2024

530. **Concerns have also been raised regarding the age of the sector's assets.** Water UK and the NIC have pointed to ageing water infrastructure and low replacement rates as a cause for concern.[714] Figure 30, based on Ofwat data, shows that around 60% of mains were built before 1981. Mains replacement rates also appear to have decreased since 2008.[715] A 2022 report prepared for Water UK by Economic Insight highlighted that current replacement rates are low by international standards.[716] This report calculates asset replacement rate for water mains at around 0.1% annually, 10 times lower than the European average while the replacement rate for wastewater assets is 0.2%, 3 times lower than the European average of 0.6%.[717] While Ofwat has questioned the data on European replacement rates, its own analysis also highlights falling water mains renewal rates, halving between 2000-01 and 2020-21, with rates significantly lower than European counterparts.[718] In Price Review 2024, Ofwat has expressed concern that the replacement rates are too low and has set a minimum renewal rate of 0.3% annually for water mains in 2025-30 to be delivered through base expenditure allowances.[719] Accounting for adjustments and enhancement, the sector has been funded to deliver mains renewals at an average rate of 0.45% annually over the Price Review period.[720] In principle a 0.3% to 0.45% rate of renewal would still imply asset lives for water mains of between 220 to 330 years. Research by UK Water Industry Research (UKWIR) found that some pipes can last as long as 160 years.[721]

531. **In initial conversations with Ofwat, the Commission has heard age is not necessarily correlated with resilience, providing assets have been properly maintained**. This is echoed by a 2022 report commissioned by Water UK, which comments that age, while relevant, does not account for volume of use which can impact asset health.[722] Ofwat has also suggested low replacement rates may reflect water companies' focus on investments with short term performance improvements, such as a 'find and fix' approach in recent years.[723] While this approach improves performance in the short term, for example on leaks, Ofwat notes it could lead to a deterioration in asset health in the long term.[724]

[714] Water UK, 'We haven't always got it right but the cost of inaction is huge', 2023; NIC, 'Letter to Ofwat on water company asset management' , 2023
[715] Ofwat report that average mains renewal rates declined post 2008 due to the end of the drinking water quality improvement programme
[716] Water UK, Options for a Sustainable Approach to Asset Maintenance and Replacement, 2022
[717] Water UK, Options for a Sustainable Approach to Asset Maintenance and Replacement, 2022
[718] Ofwat, Forward looking capital maintenance, 2021
[719] Ofwat, Price Review 2024 Final Determinations, 2024
[720] Ofwat, Price Review 2024 Final Determinations, 2024
[721] UKWIR, Long-term aging of polyethylene pipes, 2020
[722]Water UK, Options for a Sustainable Approach to Asset Maintenance and Replacement, 2022, page 18
[723] Ofwat, Price Review 2024 Draft Determinations, 2024, page 34
[724] Ofwat, Price Review 2024 Draft Determinations, 2024, page 34

Figure 30: Share of mains' length built or structurally refurbished in England & Wales by installation period, WASCs & WOCs, 2022-23, %



Source: Independent Commission analysis[725]

Questions over the impact of Ofwat's funding decisions

532. **The Commission has heard concerns (*as covered in Chapter 4*) from stakeholders about Ofwat's approach to base allowances, including whether Ofwat gives sufficient consideration to asset health**. As noted, companies fund maintenance and replacement from 'base' allowances, which are set by Ofwat. Some stakeholders have complained this does not account for the condition or age of an asset, or geographical differences between companies. Thames Water, for example, published a paper in 2023 outlining its 'asset health deficit'.[726] The company attributes this deficit to several factors including the age of its infrastructure, external pressures like increased temperatures, and economic challenges from increases in energy and chemical prices and wider inflation. Thames Water argues that the base allowance process, which considers a 13-year historical period, reflects expenditures to operate assets when they are, on average, mid-life. The ability of a company to maintain its infrastructure will depend on the age and condition of the asset, which Thames Water asserts is not directly considered by Ofwat.[727] Relatedly, as noted in *Chapter 3*, the Commission has also heard that a lack of engineering expertise within Ofwat could impact decisions around base expenditure.

533. **Companies have also argued Ofwat does not take a sufficiently long-term approach to base expenditure**. In its paper, for example, Thames Water argue that

[725] Independent Commission analysis of Ofwat Data
[726] Thames Water, Asset Health Deficit, 2023
[727] Thames Water, Asset Health Deficit, 2023

5-year Price Review cycles do not support long-term perspectives on asset maintenance.[728] The Commission understands that companies are required, through WRMPs and DWMPs (more recently), to plan future maintenance and replacement activity over longer time horizons. However, the Commission has heard that these plans may not be fully considered by Ofwat in assessing base expenditure.

534. **The extent to which these concerns from water companies are valid is uncertain.** For example, over the long-term, the Commission understands Ofwat has allowed maintenance spending to grow. At Price Review 2024, Ofwat stated that capital maintenance expenditure has increased in real terms by 9% since 2011-12 (although some water companies have argued this spending has not kept pace with growth in RCV – that is, size of the asset base)[729]. Ofwat has also made adjustments to its approach at Price Review 2024. For example, Ofwat has introduced sector wide capital maintenance cost adjustments to address asset condition issues. In addition, where Ofwat has judged that there is evidence of 'unique' circumstances at Price Review 2024, adjustments to the modelled outcomes have been made. However, the effect of these changes is still to be seen.

Infrastructure security

535. The Commission has heard 3 broad issues in relation to infrastructure security:

- Concerns around the maturity of the water sector's security arrangements
- Questions over the impact of Ofwat's funding decisions
- Potential gaps in the scope and enforcement of security legislation

Concerns around the maturity of the water sector's security arrangements

536. **There appear to be increasing issues in relation to the water industry's security arrangements.** For example, Freedom of Information requests revealed an increasing number of water industry cyber security incidents reported under NIS in recent years – with 7 incidents impacting CNI, and a further 6 events below the regulatory threshold, reported to Defra under NIS in 2023.[730] There has been further public commentary on the age of the water sector's information technology, as well as new challenges created by investments in internet-connected systems.[731] Companies must also bear in mind physical threats, such as sabotage.[732]

[728] Thames Water, Asset Health Deficit, 2023
[729] Ofwat, Price Review 2024 Draft Determinations, 2024
[730] Defra, Freedom of Information Request FOI2024/09861, 2024; Defra, Freedom of Information Request FOI2024/06092, 2024
[731] Water Industry Journal, Why the water industry needs to boost its cybersecurity maturity
[732] National Protective Security Agency, Countering the Threat of Sabotage Operations to UK Interests and National Security, 2024

Box 23: Cyber security

Recent incidents at Southern Water and South Staffordshire Water highlight challenges faced by the sector.

In January 2024, Southern Water were affected by a cyber-attack, resulting in unauthorised access to their IT systems and compromising customer data.[733] In the immediate aftermath of detecting the incident, Southern Water took precautionary steps to mitigate data impacts. There was no impact to water supply or wastewater services.

In August 2022, South Staffordshire PLC, the parent company of South Staffs Water and Cambridge Water, also suffered a cyber-attack. Similarly to Southern Water, the attack on their IT system resulted in data being compromised, and some customers' personal information being accessed, but water supply and operations were not impacted.[734]

Concerns over the impact of the Price Review process

537. **Water companies have raised the issue of Ofwat's approach to funding decisions – which it claims is hindering cyber security upgrades**.[735] During engagement, water companies have told the Commission they can plan for improved systems and security, but their feasibility is dependent on Ofwat's agreement as part of the Price Review process.

538. **For Price Review 2024, Ofwat has introduced an 'uncertainty' mechanism that could allow companies additional revenue within the Price Review period if there are new or changed legal requirements on cyber security or changes to the threat level**. The mechanism, however, does not appear to include changes in other security areas outside of cyber.[736] The Commission has also heard complaints directed at the government, with stakeholders, including regulators, state that previous Strategic Policy Statements have not given sufficient weight to cyber security.[737]

Potential gaps in the scope and enforcement of security legislation

539. **The DWI has also highlighted concerns about the scope of water industry security legislation.**[738] There appears to be limited oversight of third parties and contractors involved in water supply. SEMD, in its current form, only applies to Licensees and Undertakers as appointed by Ofwat or the Secretary of State. Regulators have highlighted how the primary legislation which empowers SEMD, section 208 of the Water Industry Act 1991, has not been updated to cover DPC.[739] The Water Industry Act 1991 does not give the power to the DWI to investigate or

[733] Southern Water, Cyber investigation update, 2024
[734] South Staffs Water, Cyber Attack FAQs
[735] Commission engagement with water companies
[736] Ofwat, Price Review 2024 Final Determinations, 2024
[737] Commission engagement with companies and regulators
[738] Commission engagement with regulators
[739] Section 208 Water Industry Act 1991

inspect external third-party operators and relies on water companies including security provisions in their contract with the external operator.

540. **There also appears to be a gap in relation to the cyber security of wastewater infrastructure. NIS as drafted, only applies to *drinking water* supply**.

541. **Finally, the Commission has heard that there are potential gaps in enforcement of security legislation.** The DWI has the power to issue directions for water quality. Enforcement for breaches of SEMD currently relies on suitable undertakings being offered by the company or for enforcement orders through section 18 of the Water Industry Act 1991.[740] There may, however, be gaps in legislation preventing the proper enforcement of SEMD. For instance, the powers of entry under section 86 subsection 4 of the Water Industry Act 1991 do not apply to SEMD. Further, the powers for DWI to issue penalties under section 22A of the same Act has not been delegated to the DWI.[741]

Delivery of new infrastructure

542. The Commission has heard 4 broad issues in relation to the delivery of new infrastructure:

- Future investment outpacing supply chain capacity
- Price Review cycles creating additional pressures for supply chains
- Investment planning processes not factoring supply chain constraints
- Skills and recruitment challenges

Future investment outpacing supply chain capacity

543. **The Commission has heard infrastructure spending in the water industry is outpacing supply chain capacity.** Enhancement expenditure over this Price Review (expenditure on new infrastructure) is around 4 times the level it was in Price Review 2019, driven by a mixture of new legal requirements, delayed spending and cost inflation.[742] However, the supply chain's capacity to deliver this spending has not increased by a commensurate amount in the past 5 years. This appears to have been exacerbated by competition for general construction capability from other sectors. The Commission has heard contractors may also prefer other sectors due to higher margins, lower risk profiles and increased certainty.[743]

544. **Companies have flagged concerns about their ability to deliver the planned new infrastructure over Price Review 2024.**[744] Through initial engagement with the Infrastructure and Projects Authority (IPA), the Commission has also heard that

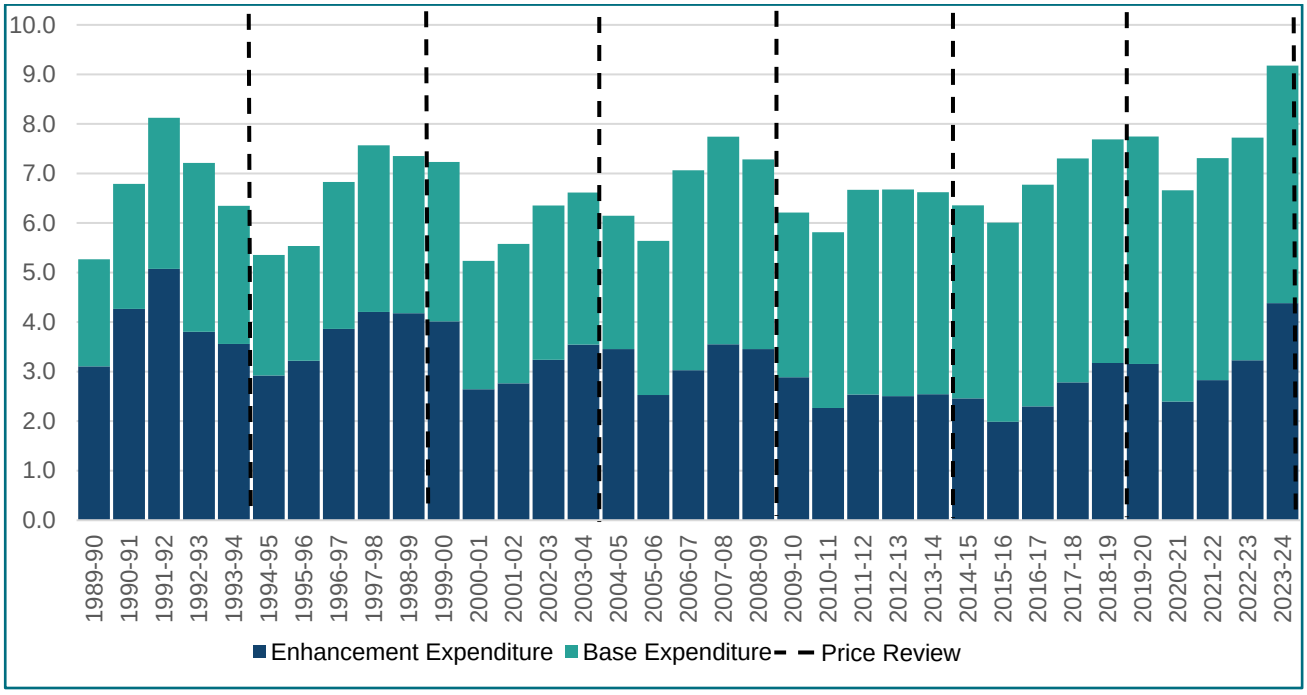
[740] Drinking Water Inspectorate, SEMD Enforcement Policy
[741] Section 208(1) Water Industry Act 1991
[742] Our final determinations for the 2024 price review – Sector summary page 5,
[743] IPA engagement with the Commission
[744] IPA engagement with the Commission

capacity constraints in the supply chain may drive up the cost of delivery.[745] Impacts could be particularly acute in certain regions as parts of the construction supply chain are regional. The Commission has also heard some providers may stop serving the water sector.[746] For example, Balfour Beatty recently indicated it is withdrawing from the water (and gas) sector because future opportunities do not match its bidding criteria.[747]

Price Review cycles creating additional pressures for supply chains

545. **The Commission has heard the 5-year Price Review cycles may be creating pressures on supply chains.** Companies typically wait until the start of a 5-year Price Review process – when they have more certainty over future revenues – before starting to ramp up expenditure, as seen in Figure 31. The Commission understands this level of variation in expenditure during and between Price Reviews can be disruptive for supply chains.

Figure 31: Total enhancement and base expenditure, England & Wales, WASCs & WOCs, 1989-90 to 2023-24, £billion, 2022-23 prices



Source: Ofwat[748]

Investment planning processes not factoring supply chain constraints

546. **The supply chain issues described above may partly reflect gaps in the water industry legislative framework and planning system**. As covered in *Chapter 5,* there has been a strengthening of targets for the water industry (for example in relation to storm overflows). However, the sector's capacity to deliver new infrastructure

[745] IPA engagement with the Commission
[746] Commission engagement with IPA
[747] Utility Week, Balfour Beatty's exit from water and gas 'should be a wake-up call' - Utility Week
[748] Data from: Long-term data series of company costs - Ofwat

appears not to have been taken sufficiently into account by government or Parliament in the setting of new targets, or in the water industry planning process described in *Chapter 2*.

547. **There have been attempts to improve planning processes.** For example, as covered in *Chapter 3,* RAPID has been established to enable the regulators to coordinate on the development of strategic water resource solutions.[749] However, there is no single mechanism responsible for overseeing if the demands on the supply chain are deliverable.

Skills and recruitment challenges

548. **Increasing demands on companies to deliver infrastructure will mean the balance between construction and operational capability will change – with corresponding implications for resourcing and management of risk**. It appears water companies are increasingly becoming operators and builders of infrastructure. Different skills and resources are required for each of these responsibilities. More detail on this is provided in Box 24 below.

Box 24: Construction challenges

Companies hold dual roles as operators of existing infrastructure as well as responsibility for building new infrastructure. During engagement with the Commission, some regulatory and industry body stakeholders have argued that water companies have effectively become large construction companies.[750]

At Price Review 2024, companies will be required to deliver a number of significant infrastructure projects. This includes: 9 new reservoirs, a further 9 large-scale water transfer projects, a tripling of the rate of water mains replacement, and the biggest smart meter rollout to date.[751] Meanwhile, companies are required to maintain 'business-as-usual' activities, including maintenance of their existing asset base.

The skills and risks involved in building and managing infrastructure appear to be different. This may explain why companies are often dependent on construction companies to deliver new projects – although, as covered above, it is not clear that supply chains can always service the sector's demands. New models of competition, including SIPR and DPC, have been introduced to help support construction delivery. However, as covered in *Chapter 4*, these also appear to face implementation barriers.

To compound these issues, companies also report experiencing skills and recruitment challenges, as well as cost challenges. While engineering and wider STEM recruitment is a growing issue across the UK, shortages of skills is particularly acute

[749] RAPID - Ofwat
[750] Commission engagement with regulators and industry bodies
[751] Ofwat, Price Review 2024 Final Determinations – Sector summary, 2024

in the water sector. It has been reported that the water industry is struggling to fill over 35% of its skilled roles, in comparison to a national average of 23%.[752]

Supply chain disruption and deliverability

549. The Commission has identified 3 broad areas where issues have been raised in relation to the disruption of critical services

- Critical dependencies between water and other sectors
- Limited clarity over where the balance of risk should lie
- Limited regulatory levers over supply chain risks

Critical dependencies between water and other sectors

550. **Initial findings have highlighted concerns about critical dependencies between the water industry and other sectors.**[753] To date, the industry appears to have avoided major service impacts from supply chain failures. While the risk of widespread supply chain disruption is low under normal conditions, the water industry does appear to have critical dependencies from the chemical, telecoms and energy sectors.

Limited clarity over where the balance of risk should lie

551. **The Commission has heard questions on whether the balance of risk between water companies, suppliers and government is right to secure a resilient service**. Risk of disruption to water supply or wastewater treatment is primarily owned by the water companies who hold the licenses and are legally required to notify the DWI/EA/NRW of potential or actual disruption. Water companies are responsible for the decisions for how to mitigate risks that may lead to disruption.[754] However, the Commission has heard that companies' face challenges in managing supply chain risks for critical treatment chemicals, such as chlorine. For example, the water industry is particularly vulnerable to supply disruptions due to reliance on a small number of suppliers and its relatively small market share compared to other sectors.[755] It is unclear whether companies *should* carry the risk for disruption, potentially with more prescriptive regulations (for example, levels of stockpiles they must hold in the UK) – or whether there should be greater direct government involvement, given companies' limited ability to influence supply chains and the importance of water supply in the protection of citizens.

[752] Water Industry Journal, Tackling the water industry's skills shortage
[753] U.S Environmental Protection Agency, Water Sector Interdependencies | US EPA
[754] Commission engagement with Defra
[755] U.S Environmental Protection Agency, Understanding Water Treatment Chemical Supply Chains and the Risk of Disruptions; HYMAX, Water Sector Supply Chain Issues and Lessons

Limited regulatory levers over supply chain risks

552. **The Commission has heard that there are limited levers in legislation to address supply chain risks for the water industry.** Whereas, for example, the chemicals *sector* is designated as CNI by the UK government, the *supply* of specific chemicals used in the water industry is not in itself deemed critical.[756] The DWI has no power to reach further into the supply chain past the water companies it regulates. Defra does work with other departments across UK government to monitor these supply chain risks, though the mechanisms available to address these risks, especially for imported products, appear to be limited.

Box 25: Critical dependencies

Chemicals supply

Water companies are dependent on a number of chemicals in the supply chain for the treatment of water and wastewater.[757] This was highlighted publicly in 2021 when disruption to the supply of ferric sulphate – needed for wastewater treatment – led the EA to issue a regulatory position statement, requiring companies to prioritise treatment to the most sensitive locations.[758] [759]

The water industry manages its chemical supply chain both as individual companies and through the operational strategy group of Water UK.[760] This group is part of the Water UK incident management structure. In addition to action by individual companies, the group coordinates a process by which each water company has an allocated supplier, which it engages with regularly. Supply chain risks are calculated based on information received from suppliers, producers, authorities, professional associations and the media.[761] This process manages any short-term risks to the supply chain and longer-term mitigation strategies.

However, there are limited legal levers for managing supply chain risks. Though water companies are regulated by SEMD, chemical industry manufacturers are not regulated by legislation under normal market conditions to supply chemicals to the UK water industry.[762] In the most serious emergencies, short-term regulations could be made under the Civil Contingencies Act 2004 but this has never been done for any sector.[763] Otherwise, standard market incentives operate for the sale of chemicals to the sector. When there are no UK facilities to manufacture required inputs and they are imported, this increases risk to the supply chain.

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[756] Commission engagement with Defra
[757] Chemical treatment for wastewater and supply chain issues - Aqua Advice
[758] Regulatory Position Statement on wastewater treatment – Defra in the media
[759] Statement on the impact of nationwide driver shortage on the water industry | Water UK
[760] Engagement with Defra
[761] Engagement with Defra
[762] Engagement with Defra
[763] Civil Contingencies Act 2004

Energy supply

All stages of water treatment require power to run, and disruption to energy supplies, though infrequent, can have cascading impacts on the water industry. The Commission understands that reduction or removal of electricity supply could severely affect the capability of water companies to treat water and wastewater. The exact consequences would be dependent on the scale, location and duration of power failure, but may impact the ability to supply a continuous flow of piped drinking water and treat sewerage. To mitigate the risk of power outages, critical systems can have backup power sources.

There have already been occasional disruption events. For example, in late November 2021, Storm Arwen caused widespread damage to power infrastructure in the north-east of England with Northern Powergrid badly impacted. Thousands of customers went without power for many days, including water companies, resulting in loss of water supply to some customers of Yorkshire Water. The loss of water supply was not attributable to Yorkshire Water, but was a consequence of large-scale loss of power supply from Northern Powergrid across a large geographical area.[764] The Energy Emergencies Executive Committee Storm Arwen Review, Commissioned by what was then the Department of Business, Energy and Industrial Strategy, concluded that "Storm Arwen resulted in electricity disruption which went well beyond the expectations of both Government and society".[765]

Areas where the Commission is seeking views

Infrastructure resilience

553. The Commission is seeking views on stakeholder proposals for changes in relation to infrastructure resilience, across the following 3 areas:

- Changes to the scope and enforcement of existing infrastructure requirements
- Issuing infrastructure resilience standards
- Changes to the Price Review process when setting 'base' expenditure

554. We encourage readers to respond to our questions on these topics via Defra's online consultation tool, Citizen Space. The questions on Citizen Space are also included at Annex A: Call for Evidence questions.

Changes to the scope and enforcement of existing infrastructure requirements

555. **The Commission would welcome views on possible changes to the scope and enforcement of existing infrastructure requirements.** This includes whether regulatory responsibility for overseeing water industry resilience has been allocated clearly. This could involve one regulator being granted responsibility for inspecting and

[764] Yorkshire Water, yorkshire-water-in-period-odi-report-2021-2022.pdf
[765] Storm Arwen review: final report

assessing the condition of assets, not simply permit compliance. If so, the Commission would like to understand which regulator should have this responsibility. The Commission is also keen to understand where there are potential gaps in the regulation of infrastructure resilience, what the impact is, and what changes could be made. For instance, the Commission would like to understand whether existing requirements on companies to map infrastructure should be strengthened.

Issuing infrastructure resilience standards

556. **The Commission would also like to explore whether there should be industry wide infrastructure resilience standards in the water industry**. The NIC have suggested that resilience standards should be published for the water sector by the UK government. The NIC suggest this standard could consider climate change and other future pressures, with the aim of ensuring that long-term maintenance is sufficient.[766] The Commission would like to gather views on this suggestion but is also keen to consider other forms of resilience 'standard'. Other sectors, are subject to standards or rules, which require regular assurance reporting to regulators, as well as resilience testing and scenario-based exercises.[767] The Commission would like to understand what lessons can be learned from other sectors.

Changes to the Price Review process when setting 'base' expenditure

557. **The Commission is seeking views on whether Ofwat's base allowance methodology adequately supports infrastructure resilience.** A number of potential reforms to Ofwat's Price Review are covered in *Chapter 4*. This includes adopting the Scottish water regulator's requirements-based, rather than expenditure-based, approach to setting base expenditure, considering the value and life of particular assets. The option of formally linking base expenditure to planned investment through WRMPs and DWMPs was also floated. The Commission would like to understand the merit of these as well as potential other changes to base, to support infrastructure resilience.

Infrastructure security

558. The Commission is seeking views on stakeholder proposals for changes in relation to infrastructure security, across the following 3 areas:

- Changes to the Price Review process to support security
- Changes to existing legislation, such as SEMD and NIS, to close gaps
- Changes to the enforcement of security regulations

559. We encourage readers to respond to our questions on these topics via Defra's online consultation tool, Citizen Space. The questions on Citizen Space are also included at Annex A: Call for Evidence questions.

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[766] National Infrastructure Commission, Developing resilience standards in UK infrastructure, 2024
[767] Financial Conduct Authority, New rules to strengthen resilience of UK's financial sector, 2024

Changes to the Price Review process to support security

560. **The Commission is interested in views on how to ensure security is appropriately factored into the Price Review.** As covered above, Ofwat has introduced an 'uncertainty' mechanism, following company complaints about the treatment of cyber security during the Price Review, although this is only in relation to cyber security. The Commission would like to understand whether this will be sufficient. The Commission would also like to explore whether there should be further coordination between Ofwat and the DWI on security during the Price Review process.

Changes to existing legislation, such as SEMD and NIS, to close gaps

561. **The Commission is seeking views on whether changes are needed to the scope of SEMD and NIS to close the apparent gaps.** Third parties are not covered by SEMD, so possible changes could include bringing third parties onto the same regulatory footing as companies. Further reforms could also address the wastewater gap in cyber security by expanding the scope of legislation. These proposals would expand the regulatory perimeter and the regulatory burden would need to be balanced against potential benefits from improved security.

Changes to the enforcement of security regulations

562. **Finally, the Commission is seeking views on whether additional enforcement powers are needed under SEMD.** As noted above, there are a number of issues which have been raised about the enforcement of SEMD which the Commission would like to explore further. For example, the Commission would like to understand the benefits and risks associated with providing the DWI with the power to issue directions under SEMD. The Commission would also like to explore providing the DWI with powers to enter premises, and issue penalties, as well as broader changes to legislation such as removing the need to consult undertakers on setting security related guidance.

Supply chain disruption and deliverability

563. The Commission is seeking views on stakeholder proposals for changes in relation to the management of supply chain constraints and disruption, across the following 5 areas:

- Incorporating construction supply chain capacity into water sector planning processes
- A more cross-government approach to infrastructure planning
- Changes to the Price Review process to address supply chain constraints
- Setting government guidance on managing supply chain disruption
- Requiring companies to take greater steps to reduce dependencies

Incorporating construction supply chain capacity into planning processes

564. **The Commission is interested in views on how to take account of the capacity of construction supply chains in the various investment planning processes**. As covered in *Chapter 2,* there are a number of frameworks for planning future water sector investment. Currently, however, there appears to be no consideration of supply chain constraints when agreeing investment plans or setting allowances. The Commission is interested in whether and how supply chain constraints could be factored into these processes.

A more cross-government approach to infrastructure planning

565. **Addressing infrastructure deliverability in the water sector may require a broader approach across multiple sectors.** As noted above, infrastructure demands across different sectors appear to be exacerbating supply chain constraints in the water sector. The Department for Business and Trade do coordinate work on supply chain issues in England with regular reporting from departments on constraints.[768] However, the Commission is interested in whether and how a more cross-sectoral approach could be taken to managing infrastructure planning and supply chain constraints.

Changes to the Price Review process to address supply chain constraints

566. **As covered in *Chapter 2*, the Commission is interested in views on whether changes to the 5-year price review cycle can ease supply chain constraints**.

Setting government guidance on managing supply chain disruption

567. **The Commission is interested in whether the UK and Welsh governments should set clearer guidance on managing supply chain disruption**. Requirements could be set on how companies should prepare for supply chain disruption to critical services, including by mapping dependencies on other sectors.

Requiring companies to take greater steps to reduce dependencies

568. **The Commission is also interested in whether companies should be required to take greater steps to reduce critical supply chain dependencies**. For example, Ofwat could agree through the Price Review to fund greater stockpiling of chemicals by water companies (where feasible) or a domestic manufacturing facility for certain chemicals could be procured by the water industry. Alternatively, the UK and Welsh governments could incentivise domestic production of certain chemicals, though given the large number of chemicals involved, this could be challenging. These possible changes could also carry significant costs, which would need to be borne by taxpayers or passed onto consumers via higher water bills. Another possibility that has been mentioned would be greater diversification of supply chains, such as by using biological treatment methods or building redundancy into supply chains. Some companies – like United Utilities – are attempting to deploy greater use of biological

[768] Engagement with Defra

treatment. However, this can come with additional capital costs relative to chemical treatment[769]. Building greater redundancy into the supply chain is also only possible where there are multiple suppliers.

[769] UUWR, UUWR_11.2_Appendix - Eccles WwTW

Innovation and technology

Background

569. **Given the water sector is a natural regional monopoly, there can be limited incentives for companies to innovate.** Therefore, attempts have been made to encourage innovation through regulation. Innovation is defined here as the full process of invention, application, and adoption, it involves a range of investment efforts in the form of research, development, demonstration, dissemination, and training. Innovation in the water industry is important for productivity and growth, enables better quality outcomes and potentially lower bills for customers.

Regulatory schemes

570. **Ofwat seeks to stimulate innovation through a number of bespoke schemes, including the Innovation Fund.** This fund, established in 2021, aims to enhance the water industry's capacity to innovate and address challenges. As of July 2024, it had supported 93 projects.[770] The Fund will be increased to £400 million (from £200m) over Price Review 2024 which runs from 2025-30.[771] It supports early stage and late stage solution development, testing projects focused on climate adaptation, environmental improvement, infrastructure resilience and delivery improvements. The fund is delivered through a series of innovation competitions, such as the Water Breakthrough Challenge and the Water Discovery Challenge.[772] Collaboration and knowledge sharing between water companies is a pre-requisite for entry and access to funding.

571. **There are also broader government and industry-led schemes intended to support innovation in the water sector.** HM Revenue and Custom's Research and Development Expenditure Credit scheme enhances returns from Research and Development (R&D) by providing a tax credit equivalent to 20% of qualifying R&D expenditure, which offsets a firm's Corporation Tax liability and effectively reduces the net cost of R&D.[773] The industry-led UK Water Industry Research (UKWIR), enables innovation in the water sector by coordinating collaborative research, pooling resources, and sharing findings to equip water companies with the knowledge and tools needed for sustainable and transformative solutions.[774]

Levels of innovation

572. **Some companies in England and Wales are making use of automation and AI to improve monitoring and model pressures on infrastructure (see Box 26)**.

[770] Ofwat Innovation Fund: Annual report
[771] Price Review 2024 final determinations: Our approach
[772] Ofwat Innovation Fund - Ofwat Innovation Fund
[773] Reforms to R&D tax reliefs - GOV.UK
[774] Big Question Document

Box 26: Artificial intelligence and automation

New technologies appear to offer opportunities to improve infrastructure monitoring. Sutton and East Surrey Water has used new technology known as 'Echologics' to assess the condition of buried assets.[775] This uses a sound pulse which passes through pipes and allows the company to ascertain remaining wall thickness (and therefore condition) without the need for excavation. Dŵr Cymru Welsh Water has also used AI to automatically review footage and detect sewer defects with nearly 80% accuracy.[776] Previously, hours of footage were manually reviewed to search for cracks. Digital twin technology has also been raised as an opportunity for companies to analyse statistical relationships with greater accuracy.[777] In 2019, Anglian Water developed the first water sector digital twin, creating a digital representation of the company's infrastructure to locate where leaks are likely to occur.[778]

New technologies also offer opportunities to transform regulatory reporting. In 2023, rollout of event duration monitors (EDMs) to 100% of storm overflows was completed.[779] EDMs record when – and for how long – storm overflows are discharging into the environment, companies must submit EDM data to the EA/NRW annually. There are also other examples of regulators leveraging technology to fulfil their roles. The EA, for instance, use Geographic Information Systems to map water systems and have introduced drones to aid with inspections.[780]

573. **Internationally, there appear to be many examples of innovation in the water industry (see Box 27)**.

Box 27: International examples of innovation

South Bend, Indiana

South Bend, Indiana, transformed its wastewater management by implementing smart sewer technology. In 2008, the city partnered with the University of Notre Dame and EmNet to develop an AI-driven monitoring and control system. This system uses real-time sensors to track sewer conditions and automated valves to redirect flows. Wastewater is then moved around the network during peak flows to reduce overflows. As a result, the city achieved an over 70% reduction in combined sewer overflows, preventing 1 billion gallons of untreated wastewater from entering local waterways annually. The data collected also allowed South Bend to revise its Long-Term Control Plan, leading to an estimated $500 million in savings compared to the original infrastructure-focused approach.[781]

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[775] SES Water Selects Echologics ePulse Technology To Assess Condition Of 273 km Of Water Mains
[776] Open data in the water industry | Ofwat
[777] AI and machine learning in the water industry | Frontier Economics
[778] Anglian Water's digital twin one of first created for utilities - BIM+
[779] Storm overflows monitoring hits 100% target - GOV.UK
[780] Environment Agency takes to the air – Creating a better place
[781] South Bend, Indiana Uses Smart Technology to Monitor and Regulate Wastewater Levels: Case Studies: ERIT: Environmental Resilience Institute: Indiana University

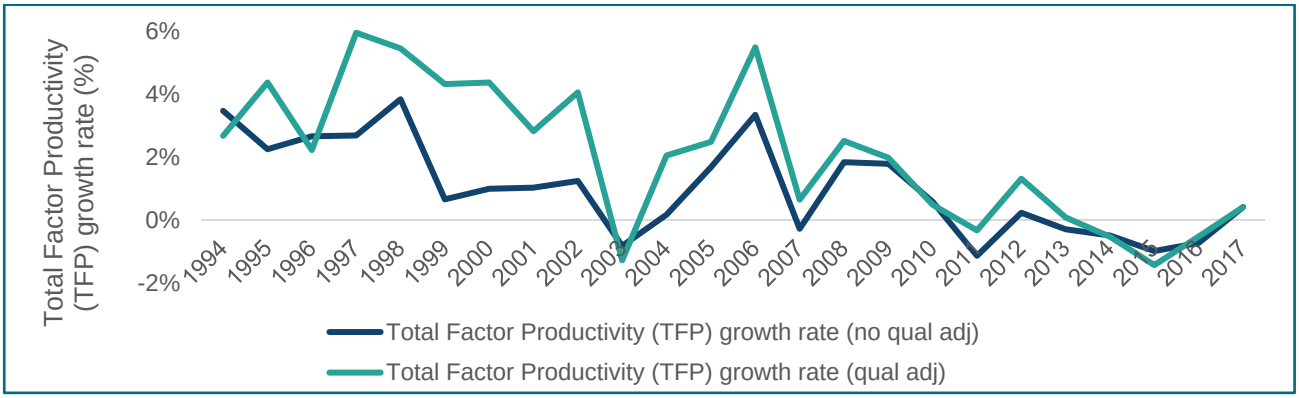
Singapore NEWater initiative

Singapore's NEWater initiative is a leading example of water innovation, addressing Singapore's limited freshwater resources through advanced reuse technology. Launched in 2002, it treats used water through microfiltration, reverse osmosis, and ultraviolet disinfection. This produces consistently high-quality drinking water within the World Health Organisation and U.S. Environmental Protection Agency's requirements.[782] As of 2017, NEWater plants were supplying up to 40% of Singapore's water needs, with plans for NEWater to meet up to 55% of future water needs by 2060.[783]

574. **Overall, levels of water company innovation appear to be low in England and Wales.** Data shows that in 2023, the water collection, treatment, and supply industry reported R&D expenditure of £33 million (in 2022-23 prices), representing just 0.1% of total R&D spending by UK businesses.[784] By contrast, the telecommunications industry had a significantly higher R&D investment of £1.195 billion, accounting for 2.4% of business R&D spending.[785]

575. **One visible sign of low innovation in the water industry is limited productivity growth.** The water industry has experienced significant slowdown in growth since 2008. A 2017 study published by Frontier Economics, for Water UK, estimated that from 1994–2017, quality-adjusted productivity in the English water and sewerage sector grew by an average 2.1% per annum. However, from 2008-2017, productivity growth was broadly flat, averaging only 0.1% per year (as shown in Figure 32 below).

Figure 32: Annual productivity growth estimate for England, WASCs only, 1994-2017



Source: Frontier Economics[786]

[782] NEWater | PUB, Singapore's National Water Agency
[783] corporatebrochure2017.pdf
[784] To note, granular R&D expenditure data for sewerage (SIC 37) is not available at the individual SIC code level. The £33 million reported R&D spending for SIC 36 (Water collection, treatment, and supply) does not cover the entire water industry as it excludes wastewater treatment and sewerage services. The total R&D investment in the broader water sector may well be higher when considering these additional activities.
[785] UK gross domestic expenditure on research and development (designated as official statistics) - Office for National Statistics
[786] Frontier Economics. (2017). *Productivity improvement in the water and sewerage industry in England since privatisation.* Prepared for Water UK. Water-UK-Frontier-Productivity.pdf. Total Factor Productivity (TFP) measures how efficiently inputs like labour and capital are used to produce outputs. Quality-adjusted TFP accounts for changes in service quality while non-quality-adjusted TFP only reflects input and output quantities.

576. **The Commission also understands there are concerns about slow adoption of new technologies and solutions.**[787] The roll-out of new techniques like nature-based solutions (see Box 28) has been slow in the water industry.

577. **Alongside supporting productivity growth, adoption of innovative technologies may have wider benefits, such as reductions in carbon emissions or the creation of green spaces**. The Commission has also heard the industry has been slow to make use of broader technologies – such as automation and Artificial Intelligence (AI).[788]

Box 28: Nature-based solutions

Nature-based solutions (NBS) apply natural processes to water management problems, such as improving water quality or reducing flood risk. This could include regenerating wetlands, vegetation buffers, or restoring or managing floodplains.[789] While these solutions offer lower carbon impacts, they are not necessarily as consistently reliable in delivering environmental obligations as 'grey' concrete alternatives.[790] The risk of failure and non-compliance for water companies is likely to be a significant driver limiting NBS rollout.[791]

The Commission has heard that innovation in this area may have been sacrificed for certainty, limiting the carbon and biodiversity benefits that novel solutions could have delivered.[792] NBS have been used for several years, but their wider use has been limited for several reasons, including regulatory barriers where the EA, for example, are sometimes reticent to approve NBS when there is conflicting evidence on their efficacy. This subsequently increases resource requirements on the EA and NRW, further stretching their capacity to deliver. A recent example is from the River Wharfe, where Yorkshire Water and Ofwat have agreed reed bed construction, however, there have been delays to permitting by the EA.[793]

Current issues

578. The Commission has heard 4 broad issues in relation to innovation and technology:

- Low innovation and productivity growth
- Concerns around a culture of risk aversion in companies and regulators
- Uncertainty around the impact of innovation schemes
- Potential impacts from the Price Review process on innovation

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[787] Engagement with the Commission
[788] Water can't wait: Accelerating the adoption of innovations in water security
[789] Understanding the value and limits of nature-based solutions to climate change and other global challenges | Philosophical Transactions of the Royal Society B: Biological Sciences
[790] How Can Investment in Nature Close the Infrastructure Gap?
[791] Ofwat responses to water reset questions, batch 1, 22nd November 2024
[792] Understanding the value and limits of nature-based solutions to climate change and other global challenges
[793] Swimming status of Ilkley's River Wharfe in limbo over sewage pollution | Rivers | The Guardian

Low innovation and productivity growth

579. **As set out in the background, R&D investment in the sector has declined and is low compared with other sectors**. This may have contributed to low productivity growth, which suggests a slowdown in innovation because productivity growth often reflects advancements in technology, processes and efficiency.[794]

Concerns around a culture of risk aversion in companies and regulators

580. **The Commission has heard that water industry culture and risk-aversion may pose a barrier to innovation.** Initial engagement has revealed considerable appetite among some water companies to adopt new technologies and approaches. Despite this, the Commission has heard regulator concerns that some are also slow to adapt.[795]

581. **The Commission has heard that innovation may have been sacrificed for certainty**.[796] While nature-based solutions have been used for several years, their wider use has been limited for several reasons, including regulatory barriers.

582. **The Commission has heard similar concerns about the regulators' low risk appetite and legal blockers on innovation.** The Commission has heard frequent frustrations over the EA's reported low tolerance for innovative approaches, such as use of nature-based solutions, during business planning due to potential conflicts in evidence of efficacy. [797] As covered in Box 28, a recent example is from the River Wharfe, where Yorkshire Water and Ofwat have agreed reed bed construction, however, there appear to have been delays to permitting by the EA.[798] In initial engagement, the EA has countered these views, noting that the environmental investment planning framework (WINEP) encourages companies to look at alternatives to 'end of pipe solutions'. The Commission has also heard that where nature-based solutions have been rejected, this is sometimes due to the nature of legislative requirements, government deadlines and plans (as described in *Chapter 2*).

Uncertainty around the impact of innovation schemes

583. **Concerns have also been raised about the impact of Ofwat's Innovation Fund**, including whether it is large enough compared to schemes in other sectors. Similar concerns have been raised about broader government schemes and industry-led initiatives. At £400 million, the Fund is equivalent to approximately 0.38% of total industry spending over Price Review 2024.[799] However, in comparison, the Energy Innovation Programme allocated £505 million between 2015 and 2021 (equivalent to approximately 0.39% of industry spending), solely to support the development of low-

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[794] Frontier Economics. (2017). *Productivity improvement in the water and sewerage industry in England since privatisation.* Prepared for Water UK. Water-UK-Frontier-Productivity.pdf
[795] Engagement with the Commission
[796] Understanding the value and limits of nature-based solutions to climate change and other global challenges
[797] Water company engagement with the Commission
[798] Swimming status of Ilkley's River Wharfe in limbo over sewage pollution | Rivers | The Guardian
[799] PR24-final-determinations-Expenditure-allowances.pdf (Ofwat Innovation fund £400 million / Industry Spending of £104 billion over Price Review 2024)

carbon technologies.[800] Additionally, the impact of the Fund has not been comprehensively assessed, with no detailed cost-benefit analysis in the 2024 annual report.[801] Similarly, the 2022 end of pilot report assesses the level of innovation prior to the fund's introduction and offers qualitative descriptions of benefits but does not quantify the benefits from funded projects.[802] This makes it challenging to effectively monitor and measure impact. Between 2019-20 and 2022-23, the water, sewerage and waste industry claimed R&D tax credits worth approximately £40 million annually, though as data is aggregated with the waste industry, it is not possible to isolate R&D tax credits claimed solely by the water and sewerage industry.[803] However, as a portion of total planned industry expenditure over Price Review 2024, HM Revenue and Custom's R&D tax credit scheme only accounts for approximately 0.2% and there is little evidence on its effectiveness within the sector. [804] UKWIR has annual funding of £3.5 million which, while useful, remains modest when compared to total industry spending, potentially limiting the scope of innovation achievable through its programme.[805]

Potential impacts from the Price Review process on innovation

584. **The Commission has also heard that the Price Review process, particularly 5-year cycles, may adversely impact innovation that takes longer to have an effect, such as nature-based solutions**.[806] One water company also indicated they would like to move towards biological treatment processes but felt unable to because of their settlement from Ofwat. Additionally, when new policies are brought in late to the Price Review process by government, the Commission has heard this can lead to reduced time for optioneering, which may contribute to companies reverting to more certain, grey solutions. Finally, the Commission has also heard that within the Price Review process, R&D spending from water companies is currently funded from base allowances. As covered in *Chapter 4*, stakeholders have flagged a potential concern around the way Ofwat sets base allowances. Were these concerns found to be valid, that could have ramifications for companies' R&D spending too.

Areas where the Commission is seeking views

585. The Commission is seeking views on stakeholder proposals for changes in relation to innovation and technology, across the following 3 areas:

- Changes to the way companies and regulators approach the risks around innovation

[800] Energy Innovation - GOV.UK & UK Energy in Brief 2022. (Energy Innovation Programme £505 million / Industry Investment £129 billion between 2015-2021)
[801] Ofwat Innovation Fund: Annual report
[802] Ofwat's Innovation Fund end of pilot report 2022
[803] Water, sewerage and waste industry claims in tabs RD6_1920, RD6_2021, RD6_2122, RD6_2223, Row 11 here: Corporate tax: Research and Development Tax Credits - GOV.UK [Main tables 2024]
[804] PR24-final-determinations-Expenditure-allowances-V2.pdf
[805] Recent Funding and Collaborations
[806] Engagement with the Commission

- Changes to the scale of the Innovation Fund
- Changes to the Price Review process

586. We encourage readers to respond to our questions on these topics via Defra's online consultation tool, Citizen Space. The questions on Citizen Space are also included at Annex A: Call for Evidence questions.

Changes to the way companies and regulators approach the risks around innovation

587. **The Commission would welcome views on water company, regulator and government attitude to the risk of innovation, and whether changes are needed to legislative requirements, government deadlines and plans to allow greater innovation**. The Commission is interested in whether regulations could evolve towards a more outcome-based approach that would focus less on the specific method of achieving the objective, allowing innovative options to be more easily considered. Some outcomes-based regulation does already exist in the water sector (for example, ODIs, which are covered in *Chapter 4*). The Commission would like to understand whether this approach should be extended further. The option of introducing a regulatory 'sandbox' approach for suitable areas of regulation, as used in other sectors, could be explored. This would enable regulators and companies to trial novel approaches in a controlled environment. This would allow companies to test new concepts in the real world more quickly without full regulatory burden, and regulators to better understand the impact.

Changes to the scale of the Innovation Fund

588. **The Commission is interested in understanding whether the current size of the Innovation Fund is adequate to deliver appropriate levels of innovation**.

Changes to the Price Review process

589. **The Commission is interested in whether changes to the Price Review may encourage more innovation**. Several potential changes to Ofwat's Price Review section are listed in *Chapter 4*. In addition to these, the Commission is seeking views on any further reforms that would support innovation. For example, research and development spending is currently funded from companies' base allowances – the Commission is interested in whether this spending should be treated separately. Changes could also be considered to support projects which take a longer time to have an impact, giving more certainty to water companies when projects run across Price Reviews.

Chapter 6: Water industry ownership

Background

590. **As covered in *Chapter 1,* the water industry was privatised in 1989 as part of a broader UK government push towards privatisation of utilities and amid impending pressures from new EU legislation**. The government first published its proposals to privatise the English and Welsh water industry in 1986.[807] The framework of economic and environmental legislation set out in *Chapters 2, 3, 4 and 5* was introduced to ensure the newly privatised regional monopolies acted in the public interest. Privatisation also included the government retaining a 'golden share' in each company, preventing any individual or company from controlling more than 15% of voting shareholdings (unless 75% of shareholders voted otherwise).[808] The 10 new water and sewerage companies were also publicly listed (some smaller water only companies were privately owned), as part of a drive by the government to encourage 'shareholder democracy'.

591. **While the industry remains privatised today, there have been a number of trends and changes *within* the privatised ownership model**, including: consolidation of companies; movement from public listing to private ownership; the adoption of complex company structures; changes in investor type; the adoption of a not-for-profit model in Wales; changes to companies' articles of association; and changes to licence terms.

Consolidation of companies

592. **The UK government redeemed its golden shares in 1995, which meant holding companies could sell the regulated businesses, and there was potential for takeovers within the industry and mergers between companies**.[809] This led to a flurry of merger and acquisition activity and a trend towards consolidation of companies. While the 10 water and sewerage companies created at privatisation still exist today, the number of water-only companies has reduced following consolidation, from 29 at privatisation to 5 today.[810]

Movement from public listing to private ownership

593. **From the late 1990s, most companies also began moving from public listings to private control**. Currently, there are only 3 groups listed on the London Stock Exchange that collectively own 5 licensed companies: Severn Trent/Hafren Dydrfdwy,

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807 Microsoft Word - development_of_water_industry270106.doc
808 https://www.oxera.com/wp-content/uploads/2018/03/Special-rights-of-public-authorities-in-privatised-EU-companies.pdf
809 https://www.ofwat.gov.uk/wp-content/uploads/2015/11/rpt_com_devwatindust270106.pdf
810 https://www.ofwat.gov.uk/wp-content/uploads/2021/06/1989.pdf & Contact details for your water company - Ofwat

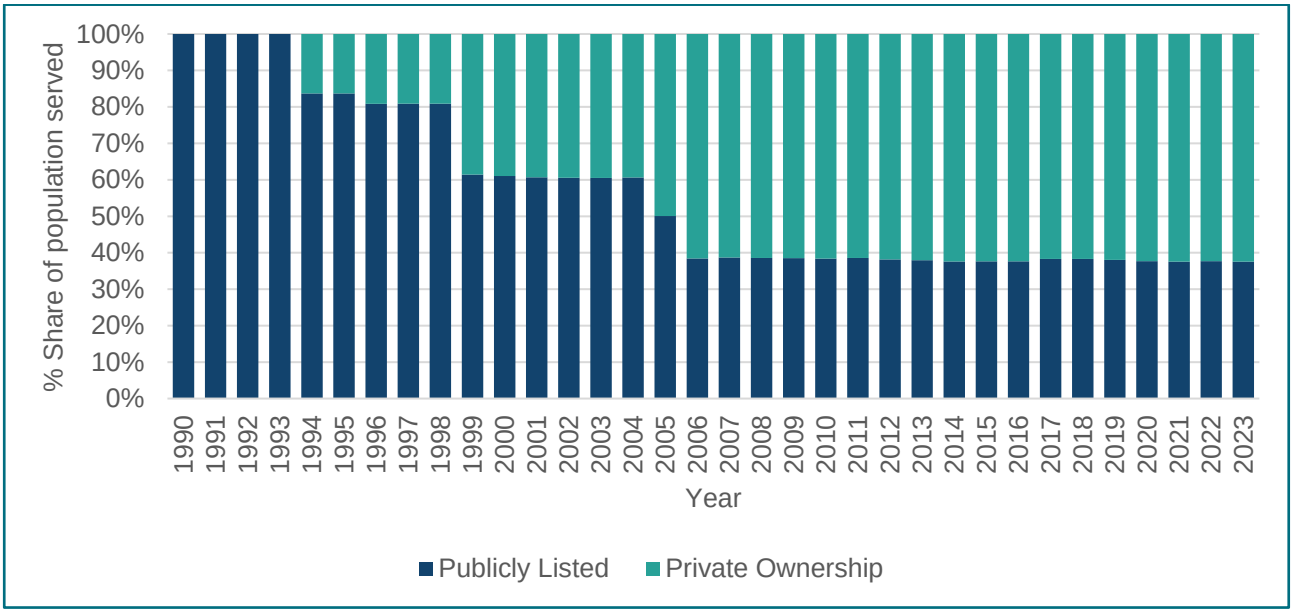
South West Water/SES and United Utilities.[811] The remaining companies are owned by a variety of unlisted entities ranging from pension funds, to infrastructure conglomerates, to private equity firms.

Public listing versus private ownership

Publicly listed companies are traded on public exchanges (for example, the London Stock Exchange), and are owned by shareholders. This means they are subject to a range of reporting requirements (for example, to publish regular or periodic financial reporting).[812]

Privately held companies, in contrast, are held by private investors. Shares are not tradeable on public markets.

Figure 33: Evolution of ownership, England, WASCs only, 1990 to 2023, share of population served, %



Source: Independent Commission analysis[813]

Adoption of complex company structures

594. **A number of privately held companies adopted complex structures in the 2000s**. As covered in *Chapter 4*, in the 2000s several privately held companies put in place Whole Business Securitisation: Dŵr Cymru Welsh Water (2001), Anglian (2002), Southern (2003), and Thames Water (2007).[814]

[811] https://www.severntrent.com/shareholder-centre/our-shares/; Water and wastewater | Pennon Group PLC; https://www.unitedutilities.com/corporate/investors/shareholders/shareholder-information/investor-guide/
[812] Main Market Raise finance - resources | London Stock Exchange
[813] Independent Commission analysis of Ofwat data provided directly to the commission
[814] RWI0028 - Evidence on Regulation of the water industry & Our structure | Governance and Legal | About Us | Thames Water

Box 29: Whole Business Securitisation

WBS involves a regulated utility establishing a special purpose subsidiary (Finco).[815] This Finco is separate from the holding company (Holdco), through which investors hold shares. The Finco is responsible for raising debt, the proceeds of which it lends to the regulated entity. Debt is guaranteed by the Holdco, and secured by a fixed charge from the Holdco. Cash flows back to the Finco from the regulated company to pay down debt.

Debt is typically separated (or 'tranched') into senior and junior classes, as well as subject to common terms, covering, for example, trigger and default events. The occurrence of a trigger event (for example, failure to meet target financial ratios) leads to an immediate lock-up of distributions to shareholders. The occurrence of a default results in a period of standstill among secured (senior) creditors, during which, for example, secured (senior) creditors are prevented from taking enforcement action against the regulated entity or the Finco.[816]

WBS enables water companies to leverage anticipated future revenue streams to lower financing costs. Because water companies have a relatively stable profile of future revenues, payments from the regulated company to the Finco can be used to pay down debt through a WBS structure.[817] The Commission understands the advantage of a WBS structure is that it can lower financing costs.[818] This is because WBS provides structure for managing debt (for example, providing certainty over which creditors will be paid first, and how default events will be managed). This can enable regulated companies to sustain higher levels of gearing without a commensurate decline in their credit ratings. Critically, however, for WBS to be effective, the assumption of stable future revenues must hold. It is also less transparent to consumers and regulators, and the higher gearing facilitated can lower financial resilience.

Changes in investor type

595. **The types of shareholders at water companies have changed since privatisation, with different types of investors pursuing different strategies in different companies**. At privatisation, water companies were typically owned by a large number of shareholders, each with a small number of shares. As noted above, there are now a variety of different types of investors in the water industry (see Box 30), with company ownership changing more than once since privatisation. For example, Thames Water was purchased by the German Utility RWE. Macquarie Asset Management (Macquarie) then bought a stake from RWE in 2006.[819] Macquarie gradually sold down their stake and sold their remaining shares in 2017 to the Canadian pension fund

[815] UK Water A Perfect Storm
[816] What Investors Want to Know: UK Whole Business Securitisation
[817] RWI0028 - Evidence on Regulation of the water industry
[818] Asset Securitization
[819] Macquarie and Thames Water - Factsheet

Ontario Municipal Employees Retirement System (OMERS) and Wren House.[820] The largest shareholders in Thames Water are now OMERS, the UK pension fund Universities Superannuation Scheme (USS), and the Abu Dhabi sovereign wealth fund Infinity Investments SA.[821] Macquarie, in turn, agreed to invest £1.1 billion into Southern Water in 2021 after discussions with Ofwat to support the company's turnaround.[822]

Box 30: Types of investors

There are a range of different types of investors involved in the water industry, including:

Pension funds – The largest shareholders in Anglian and Thames Water are respectively, the Canada Pension Plan (CPP) and the Ontario Municipal Employees Retirement System (OMERS).[823] Pension funds typically look for stable, long-term returns to manage liabilities.

Sovereign wealth funds – The largest shareholder in Yorkshire Water is the Singaporean sovereign wealth fund GIC. Sovereign wealth funds invest a country's public funds.[824]

Infrastructure conglomerates – Wessex Water and Northumbrian Water both have majority investments by global infrastructure conglomerates.[825] Infrastructure conglomerates specialise in owning infrastructure businesses across the world.

Private equity firms – Private equity firms typically focus on purchasing underperforming companies, adding value to the business, and then selling on to other investors. Corsair, through its managed entities Gateway HK Water Limited, Gateway HK Water II Limited, and Gateway Infrastructure HK Limited is currently invested in Yorkshire Water.[826] 3i previously had a stake in Anglian Water.[827]

Asset managers – The asset manager Lazard has large stakes in the publicly listed companies Severn Trent/Hafren Dydrfdwy, South West/SES and United Utilities.[828]

Not-for-profit model

596. **Different ownership models have been adopted in England and Wales**. Dŵr Cymru Welsh Water became a not-for-profit company in the 2000s. Following price cuts at Price Review 1999, a number of companies began exploring other changes to

[820] moodys-october-2017.pdf
[821] Our structure | Governance and Legal | About Us | Thames Water
[822] Macquarie is investing in more resilient water and wastewater infrastructure at Southern Water | Macquarie Group
[823] Our structure | Governance and Legal | About Us | Thames Water & About us
[824] The Rise Of Sovereign Wealth Funds | GIC ThinkSpace, https://www.keldagroup.com/about-kelda-group/group-profile/kelda-groups-investors/
[825] About us | Wessex Water & Final-NES-Change-of-control-consultation-document.pdf
[826] Yorkshire Water, Annual Report and Financial Statements 2024, published July 2024.
[827] 3i Infrastructure plc sells its stake in Anglian Water Group | 2017 | Press releases | Newsroom | 3i Infrastructure
[828] Who owns the water companies? - Dieter Helm

ownership structures.[829] In 2000, for example, Yorkshire Water put forward a proposal to move to a not-for-profit model. Ofwat rejected this proposal, however, on the grounds there was limited evidence this move would benefit customers.[830] At a similar time, Dŵr Cymru Welsh Water put forward a separate proposal to move to a not-for-profit model, which was approved by Ofwat. Under this model, Dŵr Cymru Welsh Water does not pay dividends or have shareholders, instead it relies on debt to finance investment.

Box 31: Dŵr Cymru Welsh Water

Dŵr Cymru Welsh Water has a not-for-profit model. In the late 1990s, Dŵr Cymru Welsh Water purchased electricity companies and renamed itself Hyder. Hyder subsequently encountered financial difficulties following the 1997 windfall tax and the water and electricity Price Review 1999. Western Power Distribution subsequently purchased Hyder with the intent of extracting its electricity business; Hyder's remaining water business was then put up for sale again. Around this time, Glas Cymru was established as a company limited by guarantee, with the sole purpose of purchasing Dŵr Cymru Welsh Water. Glas Cymru has no shareholders and therefore does not pay dividends – its business model is instead to finance investment by issuing debt and retaining profits. Glas Cymru announced it had reached an agreement to acquire Dŵr Cymru Welsh Water for £1.8 billion in November 2000. The equity of Dŵr Cymru Welsh Water was purchased for a nominal sum of £1 with the remainder of the purchase price paying off existing debt. The deal was initially met by scepticism (for example, related to Glas Cymru's ability to build up sufficient reserves to manage financial shocks), although Ofwat eventually agreed to the deal after Glas addressed concerns in an open letter. [831]

Dŵr Cymru Welsh Water has achieved high public trust ratings and appears to have maintained financial resilience. For example, in 2023, the CCW awarded Dŵr Cymru Welsh Water a public trust rating of 6.94. This was the highest rating of any WASC, and compared to a WASC average score of 6.37.

Dŵr Cymru Welsh Water has recently experienced material operational issues. Dŵr Cymru Welsh Water Environmental Performance Assessment star rating declined from 4/4 in 2020, to 3/4 in 2021, to 2/4 in 2022 and 2023.[832] Additionally, as a not-for profit company, in order to finance investment, Dŵr Cymru Welsh Water must either increase debt levels or use retained earnings, however, increasing debt can carry risks under certain circumstances. Dŵr Cymru Welsh Water held a credit rating of A- negative in 2023-24.[833]

[829] https://www.ofwat.gov.uk/wp-content/uploads/2020/10/PR99-final-determinations-document.pdf
[830] Microsoft Word - development_of_water_industry270106.doc page 105, Ofwat and Defra
[831] Case Study: Welsh Water
[832] https://naturalresources.wales/evidence-and-data/research-and-reports/water-reports/annual-performance-report-for-dwr-cymru-welsh-water/?lang=en
[833] PowerPoint Presentation

Changes in articles of association

597. **Some companies in England have also updated their Articles of Association to become public interest companies**. Articles of Association are written rules about running a company agreed by the shareholders, guarantors, directors, and the company secretary. Recently, some companies, like Anglian Water, have updated their articles of association to include customers, the region and communities, the environment, and society as stated beneficiaries of its business and operations.[834]

598. **The UK government has recently announced plans for other water companies to change their articles of association**. In July 2024, the UK government announced that these changes would be extended to all water companies in England, with articles of association updated to make the interests of customers and the environment a primary objective.[835] The UK government has also committed to introduce new customer panels in the sector, with powers to hold water company board members and executives to account. The Water (Special Measures) Act 2025 will provide powers for Ofwat to require companies in England and Wales to make arrangements to involve consumers in decisions with a material impact on consumer matters.[836]

Current issues

599. The Commission has heard 2 broad issues in relation to ownership:

- Public debate over the impact of ownership models on public policy objectives
- Uncertainty over whether ownership change would drive improvement

Public debate over the impact of ownership models on public policy objectives

600. **There has been significant public debate about the extent to which ownership models for water companies impact their performance against public policy objectives**.[837] Public criticism of pollution incidents and the financial management of certain companies has led to debate on the ownership structures of water companies.[838] Nationalisation is out of scope of the Commission, however, as the evolution of the industry over the decades since privatisation has shown, there is potential for change *within* the privatised model. Some commentators have highlighted Dŵr Cymru Welsh Water's not-for-profit model, and questioned whether this could be extended to English water companies.[839] Similarly, there has been discussion on the potential benefits of public listing over private ownership, as well as the influence of

[834] https://www.anglianwater.co.uk/corporate/about-us/our-purpose/
[835] Government announces first steps to reform water sector - GOV.UK
[836] Water (Special Measures) Bill: policy statement - GOV.UK
[837] Water Companies: Regulation and Financial Stability - Hansard - UK Parliament & Water companies - public ownership or public interest? - CIWEM
[838] The problem with English and Welsh sewage | LSE Business Review & Water Companies: Regulation and Financial Stability - Hansard - UK Parliament
[839] New Commission may ban English water companies from making a profit | Water | The Guardian

particular investor types on decision-making.[840] The adoption of complex structures by companies has also been subject to criticism.[841]

Uncertainty over whether ownership change would drive improvement

601. **Initial investigation of academic evidence of whether ownership models in England and Wales correlate with performance outcomes appears to be inconclusive**. One study, prepared by CCW, has highlighted a lack of compelling evidence that any one ownership model is superior.[842]

602. **The Commission's initial research on water ownership models in other countries has also failed to generate clear conclusions on whether ownership change would drive improved outcomes**. Some countries have nationalised models (for example, Scotland), others have public-private partnerships (PPPs) (for example, France). However, the picture is not clear on the relationship between ownership models and outcomes in these countries (see case studies below). Using comparable performance metrics, (such as pollution incidents, leakage levels, customer experience, investment, and efficiency levels), there are international examples of both strong and poor performance across all ownership models. It is therefore unclear whether change to the ownership model would necessarily result in improved outcomes – this is an area the Commission would like to gather more evidence on.

Box 32: international variation in ownership models

In France, the water sector is a franchise model with a mix of public and private provision, and mixed outcomes. Around 37,000 local municipalities handle water production, distribution, and wastewater services, often contracting supply services to one of 5 private contractors (known as gestion déléguée).[843] Some cities have brought the supply back under direct operation through municipal water companies in recent years, likely due to the perceived poor quality of services offered by private companies with mixed results.[844] For example, re-municipalisation in Paris led to an initial 8% tariff reduction, but the city faced challenges including a 30% rise in operating expenses (2010-15).[845] However, environmental performance improved, with Eau de Paris increasing network efficiency to 91.2% by 2023, up from 89.6% in 2016. Network efficiency measures how effectively a water distribution system delivers water to consumers by minimising losses due to leaks and ensuring optimal performance. Eau de Paris significantly outperformed the national average of 83.3% and the 85% average for large cities.[846]

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[840] The affluent and the effluent: cleaning up failures in water and sewage regulation, Private equity and the regulation of financialised infrastructure
[841] https://committees.parliament.uk/writtenevidence/109552/pdf/
[842] CCW-Water-Industry-Reform-and-Water-Company-Models-Ownership-Review-High-Level-Summary.pdf
[843] Laurent, V. (2014) Deloitte Global Report, Deloitte Water Company Profiles. Deloitte. Available at: gx-er-watercountryprofiles.pdf (deloitte.com) ; Marques, R.C. (2011) "Wastewater sanitation – An international perspective," The regulation of water supply and sanitation services.
[844] Turning the tide of water privatization – the rise of the new municipal movement | Rapid Transition Alliance
[845] 31646 LOBINA_et_al_Water_Remunicipalisation_in_Paris_(PSIRU)_2021.pdf
[846] In Paris, an unfailing commitment against water leaks | Water of Paris

In the United States, ownership in the water sector varies across public, private, and public-private partnership (PPP) models, leading to mixed outcomes. The Environmental Protection Agency (EPA) oversees over 148,000 public water systems, which can be either publicly or privately owned.[847] DC Water, a publicly owned utility provides services to approximately 2.3 million people within Washington D.C and neighbouring jurisdictions, while American Water, a private utility company, provides services to more than 14 million people in 24 states.[848] Both companies demonstrate solid financial outcomes, but DC Water appears to perform better, holding a AAA credit rating from Standard & Poor's (as of June 2024), compared to American Water's A rating (as of June 2024), suggesting a stronger credit position and financial stability for DC Water.[849]

In Scotland, government delivery of water has led to mixed outcomes. In Scotland, the water industry is nationalised, although the water company is still subject to a similar system of regulation described in *Chapters 2, 3, 4* and *5.* Public trust in the water industry is high, with Scottish Water being ranked the 'top water company in the UK' by the Institute of Customer Service in 2023.[850] The Commission understands this could be due to customer engagement in the Price Review process since 2011. Despite high public trust, however, environmental outcomes for Scottish Water appear to lag behind its English peers, with poorer treatment works compliance (96.2% vs. 98.91%) and a higher incidence of pollution (approximately 41 incidents per 10,000 km of sewer in Scotland, vs. 31 incidents per 10,000km of sewer in England and Wales) reported in 2022-23.[851] Scotland was also only monitoring 8% of storm overflows in 2023.[852]

Areas where the Commission is seeking views

603. The Commission is seeking views on stakeholder proposals in relation to ownership, across the following 5 areas:

- Consolidation
- Public listing versus private ownership
- Company structures

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[847] Information about Public Water Systems | US EPA
[848] Microsoft Word - Document1 ; American Water - Investor Relations
[849] Finance | DC Water; cbonds.com | 526: Invalid SSL certificate
[850] Scottish Water, 2023
[851] '96.2%' HYPERLINK "https://www.scottishwater.co.uk/-/media/ScottishWater/Document-Hub/Key-Publications/Annual-Reports/SWAnnualReport2023.pdf"SWAnnualReport2023.pdf; '98.91%' Ofwat, Water Company Performance Report 2022-2023; Scottish Water, Annual Report, 2022/23, 206 pollution incidents & Improving urban waters | Scottish Environment Protection Agency (SEPA); Pollution incidents per 10,000 km of sewer pipes has been calculated by dividing the total recorded pollution incidents (206) by the estimated Scottish sewer network length (50,000 km) and multiplying by 10,000. This provides a standardised measure, allowing for direct comparison with Ofwat's methodology, which assesses pollution incidents relative to sewer network size across water companies in England and Wales; Ofwat, Water Company Performance Report 2022-2023
[852] Major improvements required to sewer overflow monitoring and management - Environmental Standards Scotland

- Investor types
- The not-for-profit model

604. We encourage readers to respond to our questions on these topics via Defra's online consultation tool, Citizen Space. The questions on Citizen Space are also included at Annex A: Call for Evidence questions.

Consolidation

605. **There has been significant consolidation in the industry historically.** The Commission is interested in the impact that consolidation has had on company performance.

Public listing versus private ownership

606. **The Commission is interested in views on whether public listing as opposed to private ownership has an impact on company performance**. Some stakeholders have suggested that public listing is associated with improved outcomes in the water industry. This could be driven by enhanced reporting requirements or easier access to funding. Some stakeholders have also suggested that publicly-listed companies have more independent boards. On the other hand, publicly listed companies may be more exposed to short-term market volatility, since share price can be directly observed and impacted by wider market trends. The Commission is seeking further evidence on the impact of public listing on water companies to date, as well as whether there may or may not be benefit in encouraging greater use of public listing in the future.

Company structures

607. **The Commission is interested in views on whether complex company structures, such as WBS, have an impact on company performance**. As covered in *Chapter 4,* the adoption of WBS by some privately held companies in the 2000s appears to have coincided with increases in debt, which may have left these companies more financially exposed to recent shocks. On the other hand, the Commission understands WBS may have benefits in some circumstances, through lowering the cost of debt. The Commission is seeking evidence on the impact company structures like WBS have on performance, as well as the role that regulation should or should not play in addressing the use of these structures.

Investor types

608. **The Commission is interested in the impact, if any, of different investor types on company performance.** As mentioned, there a range of different types of investors in the water sector – including pension funds, sovereign wealth funds, infrastructure conglomerates, private equity firms and asset managers. Some commentators have argued to the Commission that certain types of investors should not be involved in the sector, because their business strategies do not align with the long-term nature of water industry planning. The initial evidence on this is unclear, not least because ownership of companies has changed hands so frequently. The Commission is seeking evidence on the impact that the involvement of a particular investor type has

on company outcomes, as well as the role that regulation should or should not play on addressing the types of investors in the sector.

The not-for-profit model

609. **The Commission is interested in the effectiveness of Dŵr Cymru Welsh Water's not-for-profit model.** As noted, Dŵr Cymru Welsh Water appears to have performed well on public trust ratings and financial resilience but struggled recently with environmental performance. The Commission would like to understand the role the not-for-profit model has played in both these positive and negative outcomes.

610. **The Commission would also like to understand potential risks associated with the not-for-profit model**. As noted above, the not-for-profit model also appears to face challenges, given the reliance on debt and retained earnings to finance future investment. The Commission has also been told that the circumstances that led to the creation of Dŵr Cymru Welsh Water are unlikely to be replicated elsewhere, given that the equity in the business was purchased for a nominal sum of £1. It is likely that if other companies pursued a not-for-profit model, equity holders would need to be bought out at a much higher cost.

Annex A: Call For Evidence Questions

Introduction

The evidence sought here will inform the Commission's development of recommendations. This Call for Evidence sets out the current issues based on the evidence the Commission has gathered so far, and a number of areas for potential change that the Commission wishes to explore. In some areas, questions are intended to fill gaps in the evidence base and, in others, they explain current issues and ideas on which we welcome views and supporting evidence, in particular, where we may have missed perspectives from a wider audience of stakeholders.

As set out above, we encourage responses to this Call for Evidence through Defra's online consultation tool, Citizen Space. Using the online tool assists our analysis of responses, enabling a more efficient and effective consideration of issues.

This Annex provides the same questions as those set out on Citizen Space.

Section 1: About You

Introduction

Questions 1-9 cover information that will be used for data management and processing. For further information about how personal and identifiable information will be used as part of this call for evidence, please see the programme privacy notice.

Confidentiality

The Independent Water Commission may publish the content of your response to this Call for Evidence in its interim and final reports. These reports will be publicly available, but your name and private contact details (e.g. email address) will not be included.

If there is any part of your response that you do not want to be published, please select 'Yes' below and specify which information should remain confidential along with your reasons.

Questions

Q1. Would you like your response to be confidential? (required)

- ❑ Yes
- ❑ No

Q2. If you answered yes, which information would you like to keep confidential and why? (optional)

Space for a written response

Q3. Do you consent to being contacted by the Independent Water Commission about your response? (required)

- ❑ Yes
- ❑ No

Q4. If you consented above, please provide your full name. (optional)

Space for a written response

Q5. If you consented above, please provide your email address. (optional)

Space for a written response

Q6. In what capacity are you completing this consultation? (required)

- ❑ As a representative of a water company
- ❑ As a representative of a regulator or enforcement body
- ❑ As a consultant/industry expert
- ❑ As an academic or researcher
- ❑ As a business or organisation
- ❑ As a local authority
- ❑ As an NGO or other non-profit public interest group
- ❑ As a member of the public with an interest
- ❑ As a public representative (for example, Councillor, MP, etc.)
- ❑ As an investor
- ❑ As a farmer or land manager
- ❑ Other

Q7. What is the name of the organisation or interested group that you are responding on behalf of? (optional)

Space for a written response

Q8. Where do you live? (required)

- ❑ England
- ❑ Wales
- ❑ Scotland
- ❑ Northern Ireland
- ❑ Outside the UK, within the EU
- ❑ Outside the UK, outside of the EU

Q9. Where does your business or organisation operate? (required) (check all that apply)

- ❑ England
- ❑ Wales
- ❑ Scotland
- ❑ Northern Ireland
- ❑ Outside the UK, within the EU
- ❑ Outside the UK, outside of the EU
- ❑ Not applicable

Section 2: Questions on Chapter 2 – Overarching Framework for the Management of Water

Introduction

We have one water system that is facing many pressures, competing demands and low levels of public trust. It requires integrated planning and coordination between different groups, and clear strategic direction from government on priorities and trade-offs.

The following questions seek views across the following five areas:

- Whether there is a need for further strategic direction to improve water planning, funding and implementation.
- Whether the geographical scales for planning and delivery in the water system are appropriate and provide sufficient accountability, including through democratic structures.
- Whether there should be an integrated water management framework to improve the management of the water system across sectors and outcomes.
- Whether the current environmental objectives and planning frameworks reflect the right outcomes and incentivise the action needed to deliver them.
- Whether the current water industry planning frameworks are effectively producing the desired outcomes, or whether changes could enable better planning in aid of delivery, at both a water industry, regulator and government level.

Water System Outcomes

Understanding what society wants from the water system will help to inform the objectives that are pursued in future. As there are limited resources available across the water system, it is also important to understand how these objectives should be prioritised, and how trade-offs should be made between them.

Q10a. Thinking ahead to what you would like the water system to look like in the future (e.g. in 25 years' time), what outcomes from the water system are most important to you? (Please select your first priority here)

We have not included the core objectives of the water industry to provide a reliable supply of clean drinking water, and provide management and removal of sewage and wastewater, as we have assumed these are important. We would like your views on what further outcomes are most important to you.

*Please choose your **highest priority** (in addition to reliable supply of clean drinking water and management and removal of sewerage and wastewater) from the list below.*

- ❑ Improved water environment (e.g. healthy habitats for aquatic plants and animals)

- ❑ Resilient and reliable supply of water for businesses
- ❑ Water bodies being safe for swimming and other recreational uses (e.g. kayaking, paddleboarding)
- ❑ Wider public health outcomes (e.g. limiting anti-microbial resistance)
- ❑ A water system which contributes to Net Zero
- ❑ Resilience to climate change
- ❑ Reduced flood risk
- ❑ Limiting increases to water bills
- ❑ Aesthetic qualities of water bodies (e.g. no litter or visible sewage residues)
- ❑ Recreational access to 'blue' (water body) spaces
- ❑ None
- ❑ Don't know
- ❑ Other (please specify)

If you selected other, please specify below

Space for a written response – max 100 words

Q11a. To what extent do you believe the overall water framework already delivers the outcome you chose as your highest priority?

- ❑ To a great extent
- ❑ To some extent
- ❑ Very little
- ❑ Not at all
- ❑ Don't know

Q10b. Thinking ahead to what you would like the water system to look like in the future (e.g., in 25 years time), what outcomes from the water system are most important to you? (Please select your second priority here)

*Please choose your **second highest priority** (in addition to reliable supply of clean drinking water and management and removal of sewerage and wastewater) from the list below.*

- ❑ Improved water environment (e.g. healthy habitats for aquatic plants and animals)
- ❑ Resilient and reliable supply of water for businesses

- ❑ Water bodies being safe for swimming and other recreational uses (e.g. kayaking, paddleboarding)
- ❑ Wider public health outcomes (e.g. limiting anti-microbial resistance)
- ❑ A water system which contributes to Net Zero
- ❑ Resilience to climate change
- ❑ Reduced flood risk
- ❑ Limiting increases to water bills
- ❑ Aesthetic qualities of water bodies (e.g. no litter or visible sewage residues)
- ❑ Recreational access to 'blue' (water body) spaces
- ❑ None
- ❑ Don't know
- ❑ Other (please specify)

If you selected other, please specify below

Space for a written response – max 100 words

Q11b. To what extent do you believe the overall water framework already delivers the outcome you chose as your second highest priority?

- ❑ To a great extent
- ❑ To some extent
- ❑ Very little
- ❑ Not at all
- ❑ Don't know

Q10c. Thinking ahead to what you would like the water system to look like in the future (e.g., in 25 years time), what outcomes from the water system are most important to you? (Please select your third priority here)

*Please choose your **third highest priority** (in addition to reliable supply of clean drinking water and management and removal of sewerage and wastewater) from the list below.*

- ❑ Improved water environment (e.g. healthy habitats for aquatic plants and animals)
- ❑ Resilient and reliable supply of water for businesses

- ❑ Water bodies being safe for swimming and other recreational uses (e.g. kayaking, paddleboarding)
- ❑ Wider public health outcomes (e.g. limiting anti-microbial resistance)
- ❑ A water system which contributes to Net Zero
- ❑ Resilience to climate change
- ❑ Reduced flood risk
- ❑ Limiting increases to water bills
- ❑ Aesthetic qualities of water bodies (e.g. no litter or visible sewage residues)
- ❑ Recreational access to 'blue' (water body) spaces
- ❑ None
- ❑ Don't know
- ❑ Other (please specify)

If you selected other, please specify below

Space for a written response – max 100 words

Q11c. To what extent do you believe the overall water framework already delivers the outcome you chose as your third highest priority?

- ❑ To a great extent
- ❑ To some extent
- ❑ Very little
- ❑ Not at all
- ❑ Don't know

Management of Water

The Commission has heard while there have been efforts by the UK and Welsh governments to create plans and strategies with a long-term, holistic view of water planning and management, these appear to have limitations. These plans and strategies do not appear to communicate a holistic view of the outcomes society wants and expects from the water system. The Commission is interested to know what is and isn't working well in the strategic management of the water system, and how it could be improved.

The range of sectors that depend and impact on the water system, like local and regional governments, transport organisations, landowners, farmers, businesses, water companies, regulators, and others, do not seem to be consistently coming together to make decisions.

While water planning and decision-making occurs at local, regional, and national levels, the Commission has heard that there is a lack of coordination, funding, and accountability at local and regional levels which makes it difficult to realise objectives. The Commission is considering where responsibilities for managing the water system should sit, and which authorities should lead on this management.

Q12. Who do you believe should be responsible for making decisions about what outcomes to prioritise from the water system?

When thinking about who should be responsible, you may want to consider the UK Government (in England) and Welsh Government (in Wales), local authorities, mayors, independent regulators (including the existing regulators, and/or new ones), water companies, and others.

This is not intended to be an exhaustive list. Apart from the above, please think about other bodies you consider to be relevant.

Space for a written response – max 500 words

Q13. Do you believe there should be changes to roles and responsibilities for water management across local, regional and national levels?

When thinking about roles and responsibilities for water management, you may want to consider setting targets, engagement with customers and the public, planning, decisions on funding, delivery, monitoring, enforcement and managing trade-offs with other sectors.

- ❑ No changes are needed
- ❑ Changes are needed
- ❑ Don’t know

If you selected changes are needed, please explain below. Consider how you believe roles and responsibilities should be better organised across local, regional, and national levels, including who you believe should be the lead authority at each level and why.

Space for a written response – max 500 words

Q14. Do you believe changes are needed to help reduce the siloed approach to water management across different sectors? If so, what changes do you believe would be beneficial? (Please select up to 5 options)

- ❑ No changes are needed

- ❑ Government providing clearer national strategic direction and targets on water
- ❑ A national scale systems planning authority*
- ❑ A regional or catchment scale systems planning authority*
- ❑ Streamlining or aligning existing water plans and planning processes across the water system
- ❑ Increasing the status of water plans to influence other sectors (e.g. farmers, businesses, planning and development)
- ❑ Streamlining or aligning water management planning and other plans such as flood risk plans, local nature recovery strategies, and local plans for development
- ❑ Aligning water management with democratic structures**
- ❑ Pooling together existing funding streams at a spatial level***
- ❑ Changes to how regulators regulate sectors involved in the water system (e.g. through monitoring, advice, enforcement, etc.)
- ❑ Don't know
- ❑ Other (please specify)

* Where options refer to a '**systems planning authority**', this refers to an authority which could act as a central planning authority, deciding on the best actions for the water system.

****'Aligning water management with democratic structures'** would involve providing local or regional governments with responsibility for managing the water system in their area of responsibility.

*****'Pooling funding at a spatial level'** would involve bringing together sources of funding from different sectors at that spatial level. This could include funding from the water industry, agricultural and transport sectors, local or regional governments and others. This could allow funding to be targeted towards areas in which it would have the greatest overall impact on the water system, irrespective of which sector it came from.

If you selected other, please specify below

Space for a written response – max 100 words

Q15. Do you believe there are barriers to money being spent more effectively and efficiently across different sectors to deliver the best outcomes for the water system? If so, what do you believe are the key barriers? (Please select up to 3 options)

When responding, please think about how money is spent in the water system now (e.g. money spent separately by different sectors, possible reliance on water industry investment etc.), and if and how it could be spent more efficiently in future.

- ❑ There are no key barriers
- ❑ Limitations of evidence on costs and benefits (including co-benefits, such as wider environmental or ecological outcomes)
- ❑ Unclear targets and objectives
- ❑ Limitations of understanding of the full set of pressures (e.g. which sector is responsible for a pollution source)
- ❑ Limitations of alignment of existing funding pots (e.g. water company investment, agri-environment schemes, government funding for Catchment Partnerships)
- ❑ The scale at which actions are developed (e.g. actions are developed at too large or too small a scale, lack of spatially targeted actions)
- ❑ Planning timelines (e.g. timelines misaligned, too long, or too short)
- ❑ The monitoring and classification system (e.g. how the quality of water bodies is assessed)
- ❑ Barriers to partnership schemes (e.g. joint maintenance agreements, collaboration across sectors)
- ❑ Don't know
- ❑ Other

If you selected other, please specify below

Space for a written response – max 100 words

Q16. In your opinion, is it more important that regional water system governance aligns with hydrological or local government boundaries?

The Water Environment (Water Framework Directive) (England & Wales) Regulations 2017 (referred to as the WFD Regulations) provide a framework for managing the water environment in England and Wales.

Planning under the WFD Regulations currently aligns with hydrological boundaries, such as river basins or catchments. This reflects the natural flow of water bodies and their environment but means that there is no existing democratic structure aligned to these plans to support and enforce their implementation.

Local government structures (such as district councils, unitary or combined authorities, and mayoral authorities) have democratic accountability and are linked into broader planning structures (such as town and country planning).

The final option, 'Welsh government boundaries', is available to those who live in Wales or have a business of organisation that operate in Wales.

- ❑ Hydrological boundaries (e.g. water catchments, river basin districts)
- ❑ Local government boundaries (e.g. strategic authority, district councils, combined authorities, and mayoral authorities)
- ❑ Don't know
- ❑ [For Wales Only]: Welsh government boundaries

Management of the water environment

In England and in Wales, the Water Framework Directive Regulations (WFD) currently provide the overarching statutory framework for the water environment. Other regulatory frameworks, such as the Urban Waste Water Treatment Regulations 1994 and the Bathing Waters Regulations 2013, also drive action in the water environment. However, the WFD provides the overarching target condition for the water environment and the framework for achieving it.

Under the WFD Regulations, a River Basin Management Plan must be prepared for each river basin district. The plan includes environmental objectives and a summary of the programmes of measures required to achieve those objectives. The current River Basin Management Plans were published in December 2022.

The WFD requires governments to 'aim to achieve' Good Ecological Status (GES) for all surface water bodies by 2027. There is no published plan in place for these objectives beyond 2027. While the regulations implementing the WFD will not stop applying after 2027, they do not provide for a scenario beyond 2027. The UK and Welsh governments will need to decide what, if anything, should follow this objective after 2027.

Q17. Do you believe changes are needed to the WFD Regulations, including for 2027 onwards? If so, which areas would benefit the most from change? (Please select all that apply). This could include, for example, strengthening, streamlining or clarifying the Regulations.

- ❑ No changes are needed
- ❑ The targets and objectives (e.g. 'Good Ecological Status' water body objectives, the designation of Artificial and Heavily Modified Water Bodies, the deadlines for achieving environmental objectives, the scale at which objectives are set and applied)
- ❑ River Basin Management Plans (e.g. spatial coverage, scope, the length of the planning cycle, the programmes of measures)

- ❑ The classification system (e.g. chemicals, ecological, groundwaters)
- ❑ The way economic evidence is considered (e.g. cost benefit appraisals of actions, use of economic analysis to justify exemptions)
- ❑ The monitoring system (e.g. the evidence base, the use of technology, data sharing for monitoring, reporting)
- ❑ Governance and accountability (e.g. the duties of governments and organisations)
- ❑ Public participation and engagement (e.g. through consultations, delivery and investment planning)
- ❑ Don't know
- ❑ Other

Q18. If you feel the WFD Regulations would benefit from change, please expand on where you feel changes are necessary and the reasons why. *(Max 500 words)*

Space for a written response – max 500 words

Measuring and assessing the water environment

The WFD Regulations currently drive water body monitoring in England and Wales. A range of chemical, biological and physical elements of water bodies are measured, and these measures are combined to classify water bodies. Their ecological status is classified as high, good, moderate, poor or bad. This classification is an indication of water body health, which is often used to report on the state of the water environment. Classification is produced at a water body scale.

We are interested in your views on whether this measurement framework provides the right data for informed decision-making on the water environment and how this data can be collected and collated in a more cost-effective way.

Q19. Do you believe changes are needed to improve how we monitor and report on the health of the water environment? If so, what changes do you believe could lead to improvements? (Please select all that apply)

- ❑ No changes are needed
- ❑ Using statistical modelling for state of environment reports (reducing monitoring inputs)
- ❑ Reporting on wider outcomes than ecological status (e.g. public health)
- ❑ Use of citizen science

- ❑ Data sharing platforms for government and third-party evidence/data
- ❑ Expanding out from the water body level to report on a whole catchment
- ❑ Full or partial integration with wider environmental/water monitoring
- ❑ Don't know
- ❑ Other (please specify)

If you selected other, please specify below

Space for a written response – max 250 words

Strategic direction for the water industry

Q20. What role do you believe the government can play in providing strategic direction for the water industry?

By 'strategic direction' we mean, for example: the Strategic Policy Statement / the Strategic Priorities and Objectives Statement; Government targets (e.g. in the Environment Act 2021 and the Plan for Water in England only); the Price Review Forum (Wales only). This is not an exhaustive list.

Space for a written response – max 500 words

Q21: What changes, if any, should be made to how the government provides strategic direction for the water industry?

- ❑ No changes are needed
- ❑ Don't know
- ❑ Changes are needed

If you selected that changes are needed, please describe what changes you feel are needed and why.

Space for a written response – max 500 words

Q22. Do you believe there are barriers to effective long-term water industry planning? If so, what factors do you believe are preventing effective long-term water industry planning? (Please select all that apply)

We are interested in understanding the factors that limit effective planning within the water industry to meet its duties and deliver its functions both now and in the future.

When thinking about planning, please consider price review business planning, drainage and wastewater management plans, water resources management plans and planning as part of the water industry national environment programme (in England) or National Environment Programme (in Wales).

- ❑ There are no barriers to effective long-term planning
- ❑ Limited clear guidance from UK and Welsh Governments on priorities and how to manage trade-offs
- ❑ Limited timebound, specific and measurable targets (e.g. for water outcomes such as water quality and water supply, or wider outcomes such as Net Zero, nature-based solutions, circular economy)
- ❑ Regulators are not adequately supporting effective planning (e.g. through guidance, scrutiny)
- ❑ Unclear what duties and functions other stakeholders (e.g. local authorities) are expected to deliver to contribute to plans
- ❑ Issues with data and assumptions (e.g. inconsistent or inadequate scenarios and assumptions across plans, data on asset performance not adequately collected)
- ❑ Engagement with customers and environmental or local groups (e.g. too much engagement, too little, engagement is not meaningful, engagement is not local)
- ❑ Regulatory requirements don't support sufficient long-term certainty or respond well to emerging issues/policy changes
- ❑ Plans don't interact well together (e.g. duplication, decisions/timelines/asks conflict, and/or decisions aren't sequenced in the right order across plans)
- ❑ Don't know
- ❑ Other (please specify)

If you selected other, please specify below

Space for a written response – max 100 words

Q23: What changes, if any, would help water companies to use planning frameworks more effectively to fulfil their duties and deliver their functions?

Space for a written response – max 250 words

Section 3: Questions on Chapter 3 – The Regulators

Introduction

The water industry is responsible for providing clean drinking water and collecting and treating wastewater. This ensures the protection of public health and the environment. The regulatory model is designed to oversee water companies to ensure they deliver statutory requirements and government policies and targets. The regulatory model is made up of organisations including:

- The Environment Agency (EA) in England and Natural Resources Wales (NRW) in Wales - the principal environmental regulators
- The Drinking Water Inspectorate - the drinking water regulator who ensures the quality and sufficiency of public drinking water supplies
- Water Services Regulation Authority (Ofwat) – primarily the economic regulator who ensures consumer interests are protected, and that water companies properly carry out their statutory functions and are financed to do so

The current regulatory model has evolved over time driven by changing public expectations in relation to the environment and concerns about the performance of water companies.

The commission is seeking views on potential changes to the overarching regulatory model.

Q24: How would you rate the performance of the water regulatory framework?

- ❑ Performing very well
- ❑ Performing well
- ❑ Performing averagely
- ❑ Performing poorly
- ❑ Performing very poorly
- ❑ Don’t know

Q25: To what extent do water regulators coordinate effectively in the regulation of the water industry?

- ❑ To a great extent
- ❑ To some extent
- ❑ Very little
- ❑ Not at all
- ❑ Don’t know

Q26: What changes, if any, do you consider are needed to the framework of water regulators to improve the regulation of the water industry? Please consider both potential benefits and costs of any proposed changes.

Please answer and explain below, providing supporting examples or evidence, where possible

Space for a written response – max 500 words

Q27: To what extent do you think the water industry regulators have the capacity, capabilities and skills required to effectively perform their roles?

Please provide information to support your views on the capacity and capability of regulators, including, where possible, supporting evidence and examples

Space for a written response – max 500 words

Section 4: Questions on Chapter 4 – Economic Regulation

Introduction

The provision of water and wastewater services is, in the main, a natural regional monopoly, in which the scope for competition is very constrained. Economic regulation is in place to prevent any abuse of monopoly powers, such as high costs and poor service, and to incentivise the investment the water system requires.

Ofwat's Price Review process is intended to substitute for competition in the water sector. This is composed of 3 key building blocks: setting base and enhancement cost allowances for the amount water companies may spend; setting the Weighted Average Cost of Capital (WACC); and setting additional performance incentives e.g. Outcome Delivery Incentives (ODIs) and Price Control Deliverables (PCDs).

The following questions explore how effective Ofwat's economic regulatory measures are and what changes could be made to enhance their effectiveness in delivering core outcomes for the supply of drinking water and managing wastewater, as well as broader environmental, public health and economic growth outcomes.

When answering these questions, please provide supporting examples or evidence, where possible.

Q28. To what extent do you think the economic regulatory framework is delivering positive outcomes?

- ❑ To a great extent
- ❑ To some extent
- ❑ Very little
- ❑ Not at all
- ❑ Don't know

Q29. How do you think the Price Review process should balance the need to keep customer bills low with the need for infrastructure resilience? (*Infrastructure resilience is the ability of an organisation's infrastructure, and the skills to run that infrastructure, to avoid, cope with, and recover from disruption in its performance*)

Please answer and explain below, providing supporting examples or evidence, where possible

Space for a written response – max 500 words

Q30. What, if any, changes could be made to the Price Review process to better enable the water industry to deliver positive outcomes?

Please answer and explain below, providing supporting examples or evidence, where possible

Space for a written response – max 500 words

Q31. What, if any, changes could be made to the Price Review process on assessing and setting base expenditure to effectively support infrastructure maintenance?

Please answer and explain below, providing supporting examples or evidence, where possible.

Space for a written response – max 500 words

Q32. What, if any, changes could be made to the Price Review process on assessing and setting enhancement expenditure to effectively support infrastructure improvements?

Please answer and explain below, providing supporting examples or evidence, where possible.

Space for a written response – max 500 words

Q33. What, if any, changes could be made to the Price Review Process on assessing and setting the Weighted Average Cost of Capital (WACC) to effectively attract investment in the water industry?

Please answer and explain below, providing supporting examples or evidence, where possible.

Space for a written response – max 500 words

Q34. What, if any, changes could be made to the Price Review process on assessing and setting performance incentives to effectively secure infrastructure delivery? *This could be across Outcome Delivery Incentives (ODIs) to effectively deliver for customers, the*

environment and public health; and/or across Price Control Deliverables (PCDs), for example.

Please answer and explain below, providing supporting examples or evidence, where possible.

Space for a written response – max 500 words

Customer Bills

Customers need to know that their bills are acceptable, particularly for the most vulnerable in society. It is the responsibility of Ofwat to ensure the interests of customers are appropriately balanced with the needs of the water companies to be able to properly finance their functions. They do this through the Price Review process, where water and sewerage charges are set for 5-year periods.

Bills have reduced by 15% in real terms since 2014-15[853], however, the need for increased investment in infrastructure will result in larger bills over the period of Price Review 2024. These increases come at a time of declining public trust and satisfaction in water companies. There is also a regional variation in bills, with customers paying differing amounts for their water, depending on where they live. Whilst most households have a water meter and therefore pay for the water they use, a significant minority do not.

The Commission is seeking views on potential changes in relation to the fairness of water bills. This includes, but is not limited to:

- Improving transparency for customers to help improve trust, for example, by explaining how the money from bills is used by water companies and how bills are set.
- Increasing the use of smart water meters to help customers better understand their water usage and improve water efficiency.
- Exploring innovative water charging to support affordability and/or efficient use of water.

Q35. **To what extent does the economic regulatory framework deliver acceptable water bills for customers?** (Please select one)

- ❑ To a great extent

[853] Ofwat bills data provided directly to the Independent Water Commission. The reduction is calculated between 2014-15 and 2022-23

- ❑ To some extent
- ❑ Very little
- ❑ Not at all
- ❑ Don't know

Q36. **What, if any, changes would help ensure customers are paying fairly for the water they use?** (Please select all that apply)

- ❑ No changes are needed
- ❑ Improve transparency for customers on how money from bills is used
- ❑ Increase the use of smart water meters
- ❑ Explore innovative water charging (such as rising block tariffs or other innovative tariffs) to support affordability and/or efficient use of water
- ❑ Don't know
- ❑ Other (please specify)

If you selected other, please specify below

Space for a written response – max 250 words

Customer Protections

Customers also need to know that they will receive a good level of service in return for their money. Whilst the provision of an uninterrupted supply is a key expectation of customers, they also expect clear communication, the quick resolution of problems, and accurate billing.

In addition, there are a wide range of customers who may require financial or practical support from their water companies. This could include households with people of pensionable age, someone who is pregnant or has young children, people with a mental health condition or a disability, people who have difficulty in communicating, and those on low-income. Despite some recent improvements, the awareness and take-up of the various initiatives to support these customers remains low.

The commission is seeking views on potential changes in relation to customer protections on service provision and support for vulnerable customers. This includes but is not limited to:

- ❑ Ensuring that customer matters are investigated and, where necessary, enforcement action taken, to incentivise water companies to improve their service provision.

- ❑ Increasing the accountability of water companies' handling of complaints to drive an improved experience for customers.
- ❑ Introducing a single social tariff for England and Wales with the aim of providing a fair, consistent and sustainable support for customers who struggle to afford their water bill.
- ❑ Ensuring that water companies proactively offer support to customers who may be eligible.

Q37. **To what extent does the regulatory framework protect customers from poor service?** (Please select one)

- ❑ To a great extent
- ❑ To some extent
- ❑ Very little
- ❑ Not at all
- ❑ Don't know

Q38. To what extent does the regulatory framework ensure that vulnerable customers are effectively supported?

- ❑ To a great extent
- ❑ To some extent
- ❑ Very little
- ❑ Not at all
- ❑ Don't know

Q39. **What, if any, changes to the regulatory framework would better incentivise water companies to deliver and maintain high customer standards?** (Please select all that apply)

- ❑ No changes are needed
- ❑ Ensure customer matters are investigated and, where necessary, enforcement action taken
- ❑ Greater accountability for water companies' handling of complaints
- ❑ Don't know
- ❑ Other (please specify)

If you selected other, please specify below

Space for a written response – max 250 words

Q40. What, if any, changes to the regulatory framework would improve support for customers in vulnerable circumstances? (Please select all that apply)

- ❑ No changes are needed
- ❑ Introduce a single social tariff for England and Wales
- ❑ Ensure a proactive approach by water companies in identifying customers eligible for additional support
- ❑ Don't know
- ❑ Other (please specify)

If you selected other, please specify below

Space for a written response – max 250 words

Financial Resilience

Financial resilience is the ability of companies to weather shocks to capital structure, spending, revenue and liquidity. Some companies are experiencing challenges today with financial resilience.

A range of factors influence water company financial resilience. Companies appear to have been hit by recent cost pressures from inflation and regulatory fines. Historical decisions taken by water companies about debt levels also appear to have played a role in current challenges. The evidence on the relationship between debt raised and investment delivered is complex and contested.

The Commission is seeking views on potential changes to support water company financial resilience. This includes, but is not limited to:

- Changes to the Price Review process to support financial resilience
- Changes to the regulatory approach to companies' debt levels
- Changes to financial oversight, including a more supervisory approach
- Changes to the way in-distress companies are managed (for example, providing the water regulators additional discretion over how penalties are issued)
- Changes to the Special Administration Regime (for example, Ofwat providing guidance on SAR thresholds)

Q41. To what extent is change required to the economic regulatory framework to support water companies' financial resilience?

- ❑ To a great extent
- ❑ To some extent
- ❑ Very little
- ❑ Not at all
- ❑ Don't know

Q42. Which of the following changes to the economic regulatory framework, if any, would improve outcomes for the water industry? (Please select all that apply)

- ❑ No changes are needed
- ❑ Changes to the Price Review process to support financial resilience
- ❑ Changes to the oversight of water company debt (for example, 'capping' company debt levels)
- ❑ Changes to financial oversight of companies (for example, moving to a more supervisory model as defined in the Call for Evidence)
- ❑ Changes to the way in-distress companies are managed (for example, providing the water regulators additional discretion in their enforcement regime)
- ❑ Changes to the Special Administration Regime (for example, providing guidance on the thresholds for the SAR)

- ❑ Don't know
- ❑ Other (please specify)

If you selected other, please specify below

Space for a written response – max 500 words

Q43. Do you think there is evidence on the historical relationship between debt, dividends, and expenditure at water companies that the commission should be looking at? Please answer and explain below, providing supporting examples and evidence, where possible.

Space for a written response – max 500 words

Investment

In a given year, water company costs typically exceed revenues as investment is financed by debt and equity over time. The current and future investment need for the water sector is significant; Ofwat consider that £12.7 billion of equity will be required between 2025-2030, and companies forecast they will need to raise £45 billion in debt.

The attractiveness of the sector to investment is driven by the level and stability of returns investors can expect to get. These appear to have been declining since privatisation. At the same time, there are some public concerns that returns have been too high. Assessing returns in the sector is inherently challenging, and the Commission is seeking evidence on how returns compare between the water industry and other comparable sectors (for example, energy).

The Commission is seeking views on potential changes to support investment. This includes, for example:

- Changes to the Price Review process to support investment
- New mechanisms to underpin and/or constrain returns

The Commission is also interested in the impact public and political perceptions of the water industry have had on the attractiveness of the sector to investment.

Q44.To what extent does the economic regulatory framework support or hinder investment into the sector?

- ❑ Significantly supports investment
- ❑ Somewhat supports investment
- ❑ Neither supports nor hinders investment
- ❑ Somewhat hinders investment
- ❑ Significantly hinders investment
- ❑ Don’t know

Q45. How do financial returns in the water sector compare to other similar sectors (for example, energy)? Please answer and explain below, providinge supporting evidence and examples, where possible.

Space for a written response – max 500 words

Q46. What options, if any, would incentivise investment in the water sector? Please answer and explain below, providing supporting evidence and examples, where possible.

Space for a written response – max 500 words

Q47. How does the public and political portrayal of water companies in the media and elsewhere affect the attractiveness of the water sector to investors?

- ❑ Positively affects the attractiveness of the water sector to investors
- ❑ Does not affect the attractiveness of the water sector to investors
- ❑ Negatively affects the attractiveness of the water sector to investors
- ❑ Don't know
- ❑ Other (please specify)

If you selected other, please specify below (max 250 words)

Competition

Competition has been introduced into the water industry by Ofwat, and encouraged by successive governments, to help ensure private companies deliver investment and services for a fair price.

As the water sector is a natural monopoly, competition will always be constrained. The commission has heard varied feedback about how effective existing schemes have been and could be in the future. Some schemes appear to have delivered benefits (for example, enabling housing development), whilst others appear to face obstacles (for example, legal constraints, limited awareness).

The Commission is seeking views on potential changes that could be made to the competition regime. These include, but are not limited to:

- Changes to the New Appointments and Variations market to reduce administrative burdens (for example, relaxing requirements on Ofwat to consult on all New Appointments and Variations licensing applications)
- Changes to the business retail market, to focus on where it is most beneficial (for example, limiting the business retail market to large customers)
- Changes to the business retail market, to ensure efficient use of water (for example, updating water tariffs)

- Changes to Direct Procurement for Customers and/or Specified Infrastructure Projects Regulations, to ease and expand their use (for example, relaxing the criteria for Specified Infrastructure Projects Regulations usage)

Given different approaches historically between England and Wales, the Commission is also interested in where different approaches might be taken in England and Wales, as well as where there may be opportunities for convergence.

Q48. To what extent should further competition in the water industry be encouraged through regulation? Please answer below and provide evidence and examples, where possible.

Space for a written response – max 500 words

Q49. Which of the following schemes, if any, have <u>failed</u> to provide effective levels of competition and efficiency? (Please select all that apply)

- ❑ New Appointments and Variations (NAVs)
- ❑ Self-Lay Providers (SLP)
- ❑ Business Retail Market
- ❑ Water bidding market
- ❑ Bioresources market
- ❑ Direct Procurement for Customers (DPC)
- ❑ Specified Infrastructure Projects Regulations (SIPR)
- ❑ None
- ❑ Don’t know

Q50. Which of the following changes to competition schemes, if any, would improve outcomes for the sector? (Please select all that apply)

- ❑ No changes are needed
- ❑ Changes to the New Appointments and Variations market to reduce administrative burdens (for example, relaxing requirements on Ofwat to consult on all New Appointments and Variations licensing applications)
- ❑ Changes to the business retail market, to focus on where it is most beneficial (for example, limiting the business retail market to large customers)

- ❑ Changes to the business retail market, to ensure efficient use of water (for example, updating water tariffs)
- ❑ Don’t know
- ❑ Other (please specify)

If you selected other, please specify below

Space for a written response – max 500 words

Q51: To what extent would greater market tendering of infrastructure delivery projects improve outcomes? Please answer below and provide evidence and examples, where possible.

Space for a written response – max 500 words

Section 5: Questions on Chapter 5 – Water Industry Public Policy Objectives

Introduction

Regulation has been introduced over the past 30 years to deliver government objectives in relation to drinking water, protecting the environment and securing long term water supplies. Requirements on water companies, particularly in relation to the environmental regime, have grown over the past 30 years and have become increasingly complex. We are interested to understand in which areas the legal and regulatory requirements placed on water companies are effective/ineffective and/or where they create perverse outcomes, and/or where there may be gaps. We are interested to know if, and if so how, these requirements could be improved.

When we say legal requirements on water companies, we mean statutory requirements related to their status as water companies (not including for example general duties under companies' legislation or public health legislation) and their duties under common law, including in relation to nuisance. When we say regulatory requirements, we mean requirements imposed on water companies by the various regulators. In some cases, the tools used by regulators are directly related to legal requirements on water companies (such as enforcement powers), whereas other tools used by regulators attempt to influence companies' behaviour but may not relate directly to a legal requirement on companies (for example, Ofwat's Outcome Delivery Incentives).

Q52. Do you believe that legal and/or regulatory requirements would benefit from review or consolidation? If so, please explain your answer and provide evidence and examples, where possible

Space for written response – max 500 words

Protecting the environment

Environmental regulation for the water industry is in place to protect the environment from harm and mitigate damaging activities by water companies. Environmental standards have been introduced at the EU level and by the national governments. As the principal environmental regulators in England and Wales respectively, EA and NRW issue permits and licences setting rules and conditions to secure compliance with requirements.

In these questions we are interested in views on the regulatory framework specifically as it relates to water companies.

The Commission is seeking views on potential changes that could be made to the environmental regulatory regime for the water industry. These include, but are not limited to:

- A review and rationalisation of the environmental legislative framework for the water industry
- Changes to address emerging threats
- Enhanced monitoring, including reform of operator self-monitoring
- Expanded use of inspections and audits
- Swifter enforcement

Q53. Do you believe that the system of environmental regulation, monitoring and enforcement is ensuring water company compliance with environmental standards? (Please select one)

- ❑ To a great extent
- ❑ To some extent
- ❑ Very little
- ❑ Not at all
- ❑ Don't know

Q54. Which of the following changes to water industry environmental regulatory requirements, if any, would improve outcomes from the sector?

- ❑ No changes are needed
- ❑ A review and rationalisation of the water industry environmental legislative framework
- ❑ Legislative reforms to address current and emerging threats
- ❑ Don't know
- ❑ Other (please specify)

If you selected other, please specify below.

Space for a written response – max 100 words

Q55. Which of the following changes to the water industry environmental regulation, monitoring and enforcement framework, if any, would improve outcomes for the sector? (Please select all that apply)

- ❑ No changes are needed
- ❑ Enhanced monitoring, including reform of operator self-monitoring
- ❑ Expanded use of inspections and audits

- ❑ Swifter enforcement
- ❑ Don't know
- ❑ Other (please specify)

If you selected other, please specify below.

Space for a written response – max 100 words

Delivering clean drinking water

Securing clean drinking water is fundamental to public health. The DWI is responsible for assessing the quality of drinking water in England and Wales and taking enforcement action if standards are not being met. Water companies are consistently meeting the regulatory standards for drinking water with 99.97% of samples in England and 99.96% of samples in Wales complying with the regulatory standards in 2023. However, to ensure that the increasing pressures of population growth, climate change and challenges with ageing assets can be fully accounted for, stakeholders have raised a small number of areas where the system could perform even better. This includes water company risk management; a need to update water quality standards to ensure they remain world leading; approach to dealing with legacy contaminants such as lead; the extension of regulatory powers and tackling backlogs in product approvals to better support innovation in the sector.

The Commission is seeking views on potential changes that could be made to support the regulation of drinking water quality. These include, but are not limited to:

- Whether updates to drinking water quality standards are necessary to ensure that world leading standards are maintained
- Whether any changes to DWI's regulatory powers should be explored to better regulate new water supply mechanisms and approaches
- Addressing regulation 31 supply chain challenges to support innovation

Q56. What changes, if any, could be made to the drinking water regulatory system to maintain world leading drinking water quality? (Please select all that apply)

- ❑ No changes are needed
- ❑ Updates to drinking water quality standards
- ❑ Changes to DWI's regulatory powers to better regulate new water supply mechanisms and approaches
- ❑ Addressing regulation 31 supply chain challenges to support innovation
- ❑ No changes needed

- ❑ Don’t know
- ❑ Other (please specify)

If you selected other, please specify below.

Space for a written response – max 100 words

Securing resilient water supply

In light of climate change and population growth, the security of long-term water supply is critical to the economy. We need secure and resilient supplies of water for people and the economy, whilst ensuring the environment is protected. There is projected to be a substantial water supply gap by 2050 if no action is taken. Water companies are responsible for the supply of water in their area and deliver their duty by developing Water Resources Management Plans and Drought Plans every 5 years. To deliver long term water supply, water companies need to reduce demand as well as increase supply.

The Commission is seeking views on potential changes that could be made to the water resources regulatory regime. These include, but are not limited to:

- Integrated water management framework to improve the management of the water
- Changes to regulatory responsibilities or introduction of new requirements or standards to oversee delivery of the water company supply and demand activity
- Abstraction reform
- New water demand and efficiency policies

Q57. To what extent is the overall water regulatory framework securing resilient long-term supplies of water? (Please select one)

- ❑ To a great extent
- ❑ To some extent
- ❑ Very little
- ❑ Not at all
- ❑ Don’t know

Q58: What changes, if any, could be made to the overall water regulatory framework to ensure it can secure a resilient long-term supply of water? (Please select all that apply)

- ❑ No changes are needed

- ❑ Integrated water management framework to improve the management of the water system
- ❑ Changes to regulatory responsibilities or introduction of new requirements or standards to oversee delivery
- ❑ Abstraction reform
- ❑ New water demand and efficiency policies
- ❑ Don't know
- ❑ Other (please specify)

If you selected other, or want to provide additional views, please specify below

Space for a written response – max 500 words

Infrastructure and supply chain resilience and security

Water companies need resilient and secure infrastructure and supply chains to deliver on their core duties. Infrastructure resilience is the ability of an organisation's infrastructure, and the skills to run that infrastructure, to avoid, cope with, and recover from disruption in its performance. Infrastructure security is the practice of protecting systems and assets against physical and cyber threats.

The commission has heard conflicting evidence on the sector's resilience (for example, with disagreement between companies and Ofwat on whether companies have been appropriately funded to maintain assets).

Initial engagement has also highlighted potential concerns about the maturity of the sector's security arrangements, as well as whether funding decisions and regulatory oversight are adequately delivering a secure sector.

Supply chain concerns have also been raised regarding the ability to deliver ambitious new infrastructure programs and whether risk is appropriately allocated for critical dependencies (such as chemical supply).

The Commission is seeking views on potential changes that could be made to support infrastructure resilience. These include, but are not limited to:

- Changes to the Price Review to support infrastructure resilience (for example, calculating base expenditure with reference to asset condition, or linking base expenditure to investment plans)
- Changes to the scope and enforcement of existing infrastructure requirements (for example, strengthening requirements on companies to map assets)

- Setting infrastructure resilience standards (for example, requiring companies to prepare for a defined level of disruption)

The Commission is seeking views on potential changes that could be made to support infrastructure security. These include, but are not limited to:

- Changes to the Price Review to ensure adequate coordination on security expectations
- Changes to existing legislation, such as Security Emergency Measures Direction and cyber security regulations to close gaps (for example, giving powers in relation to security of wastewater infrastructure)
- Changes to the enforcement of security regulations (for example, providing the DWI with powers to issue directions under Security Emergency Measures Direction)

The Commission is seeking views on potential changes that could be made to manage risks from supply chains. These include, but are not limited to:

- Changes to planning processes to ensure supply chain constraints are factored (for example, factoring supply chain into planning decisions)
- Changes to cross-government policy on supply chain constraints (for example, agreeing investment plans with other sectors)
- Changes to the Price Review process to address supply chain constraints (for example, moving from a 5-year Price Review process)
- Setting government guidance on managing supply chain disruption
- Requiring companies to take greater steps to reduce dependencies (for example, onshoring chemicals production)

Q59. To what extent does the overall water regulatory framework support or hinder infrastructure resilience? When considering your answer, please think about future pressures including factors such as climate change and population growth.

- ❑ Significantly supports infrastructure resilience
- ❑ Somewhat supports infrastructure resilience
- ❑ Neither supports nor hinders infrastructure resilience
- ❑ Somewhat hinders infrastructure resilience
- ❑ Significantly hinders infrastructure resilience
- ❑ Don’t know

Q60. To what extent does the overall water regulatory framework support or hinder infrastructure security? When considering your answers, please think about evolving security threats such as cyber security.

- ❑ Significantly supports infrastructure security
- ❑ Somewhat supports infrastructure security
- ❑ Neither supports nor hinders infrastructure security
- ❑ Somewhat hinders infrastructure security
- ❑ Significantly hinders infrastructure security
- ❑ Don't know

Q61. To what extent does the overall water regulatory framework support or hinder effective management of supply chain risks? When considering your answers, please think about disruption in and constraints from supply chains.

- ❑ Significantly supports effective management
- ❑ Somewhat supports effective management
- ❑ Neither supports not hinders effective management or
- ❑ Somewhat hinders effective management
- ❑ Significantly hinders effective management
- ❑ Don't know

Q62. What changes, if any, could be made to the overall water regulatory framework to better support infrastructure resilience? (Please select all that apply)

- ❑ No changes are needed
- ❑ Changes to the Price Review to support infrastructure resilience (for example, calculating base expenditure with reference to asset condition, or linking base expenditure to investment plans)
- ❑ Changes to the scope and enforcement of existing infrastructure requirements (for example, strengthening requirements on companies to map assets)
- ❑ Setting infrastructure resilience standards (for example, requiring companies to prepare for a defined level of disruption)
- ❑ Don't know
- ❑ Other (please specify)

If you selected other, please specify below

Space for a written response – max 250 words

Q63. What changes, if any, could be made to the overall water regulatory framework to better support infrastructure security? (Please select all that apply)

- ❑ No changes are needed
- ❑ Changes to the Price Review to ensure adequate coordination on security expectations
- ❑ Changes to existing legislation, such as Security Emergency Measures Direction and cyber security regulations (for example, giving powers in relation to security of wastewater infrastructure)
- ❑ Changes to the enforcement of security regulations (for example, providing the DWI with powers to issue directions under Security Emergency Measures Direction)
- ❑ Don't know
- ❑ Other (please specify)

If you selected other, please specify below

Space for a written response – max 250 words

Q64. What changes, if any, could be made to the overall water regulatory framework to better manage risks from supply chains? (Please select all that apply)

- ❑ No changes are needed
- ❑ Changes to planning processes to ensure supply chain constraints are factored (for example, factoring supply chain into planning decisions)
- ❑ Changes to cross-government policy on supply chain constraints (for example, agreeing investment plans with other sectors)
- ❑ Changes to the Price Review process to address supply chain constraints (for example, moving from a 5-year Price Review process)
- ❑ Setting government guidance on managing supply chain disruption
- ❑ Requiring companies to take greater steps to reduce dependencies (for example, onshoring chemicals production)
- ❑ Don't know
- ❑ Other (please specify)

If you selected other, please specify below

Space for a written response – max 250 words

Innovation and technology

Innovation is defined here as the full process of invention, application, and adoption, and it involves a range of investment efforts in the form of research, development, demonstration, dissemination, and training.

Historically, there have been concerns about the levels of innovation in the water sector and its approach to innovation

The commission has also heard that risk-aversion from both regulators, the government and water companies could be stifling the introduction of innovative approaches and technologies as more 'certain' engineering approaches are favoured over newer, less tested options.

The commission is gathering views on changes to the regulatory framework to support innovation. These include, but are not limited to:

- Changes to the way companies and regulators approach risk (for example, introducing a regulatory 'sandboxing' tool)
- Changes to regulation to allow flexibility on delivery approaches Changes to the Price Review process to support innovation (for example, treating research and development spending separately in the Price Review)

The commission is also interested in views on opportunities from new technologies to transform water company and regulator approaches.

Q65. To what extent does the overall water regulatory framework currently support or hinder innovation?

- ❑ Significantly supports innovation
- ❑ Somewhat supports innovation
- ❑ Neither supports nor hinders
- ❑ Somewhat hinders innovation
- ❑ Significantly hinders innovation
- ❑ Don't know

Q66. Which of the following changes in the sector, if any, would enable innovation outcomes? (Please select all that apply)

- ❑ No changes are needed
- ❑ Changes to the way companies and regulators approach risk (for example, introducing a regulatory 'sandboxing' tool)
- ❑ More outcome based regulation to allow flexibility on delivery approaches

- ❑ Changes to the Price Review process to support innovation (for example, treating research and development spending separately in the Price Review)
- ❑ Don't know

❑ Other (please specify)

If you selected other, please specify below

Space for a written response – max 250 words

Q67. What opportunities, if any, do new technologies present for companies and the regulators?

Space for a written response – max 500 words

Section 6: Questions on Chapter 6 – Ownership

Introduction

The English and Welsh ownership model has evolved since 1989.

There has been significant public debate about the extent to which ownership models for water companies impact their performance against public policy objectives. Initial research on other countries has failed to generate clear conclusions on whether ownership change would drive improved outcomes.

The Commission would like to gather evidence on the following areas in relation to ownership:

- What the impact, if any, of mergers between companies (consolidation) has on company performance.
- What the impact, if any, of public listing versus private ownership is on company performance.
- What the impact, if any, of company structures – like Whole Business Securitisation – is on company performance.
- What the impact, if any, of different types of investors (for example, private equity firms, pension funds) is on company performance.
- How effective Dŵr Cymru Welsh Water's not-for-profit model is, and what the risks associated with this model are.

Q68. What impact, if any, has consolidation of water companies had on their performance?

Space for a written response – max 250 words

Q69. What impact, if any, does whether or not a water company is listed on the stock exchange have on their performance?

Space for a written response – max 250 words

Q70. What impact, if any, do complex company structures like Whole Business Securitisation have on water company performance?

Space for a written response – max 250 words

Q71. What impact, if any, does the type of investor (for example, private equity firms, pension funds) have on water company performance?

Space for a written response – max 250 words

The following 2 questions are targeted at those who live in Wales or are part of an organisation that operates in Wales.

Q72. How effective has Dŵr Cymru Welsh Water's not-for-profit model been in driving improved outcomes?

Space for a written response – max 250 words

Q73. What are the risks associated with Dŵr Cymru Welsh Water's not-for-profit model?

Space for a written response – max 250 words

Annex B: Stakeholder engagement

Since the Commission launched in October 2024 Sir Jon has met with more than 90 external stakeholders, including environmental groups, consumer representatives, water company CEOs, major investors, Parliamentarians, economists and regulators. A selection is listed below. This engagement has helped inform the Call for Evidence. The Commission will continue to engage directly with stakeholders as its thinking develops.

- Ofwat
- Environment Agency
- Drinking Water Inspectorate
- Natural Resources Wales
- Office for Environmental Protection
- Natural England
- No10 Downing Street
- Defra Ministers
- HM Treasury Ministers
- Welsh Ministers Government
- All Advisory Group members
- English and Welsh water company CEOs
- Scottish Water
- Consumer Council for Water
- Water UK
- Waterwise
- Water Resources National Framework
- National Infrastructure Commission
- Thames Tideway
- The Chartered Institution of Water and Environmental Management
- Market Operator Services Limited (MOSL)
- Scottish Water
- Water relevant All-Party Parliamentary Groups (APPG)
- Environment, Food and Rural Affairs Committee

- Environmental campaigners
- Water campaigners
- Academics
- Economists
- Investor groups including:
    - Pension funds
    - Hedge funds
    - Insurance companies
    - Sovereign wealth funds
- Environmental groups including:
    - Rivers Trust
    - Afonydd Cymru
    - Surfers Against Sewage
    - River Action
    - Angling Trust
    - Wildlife and Countryside Link
    - Wildlife Trust
    - Wildfowl and Wetlands Trust
    - RSPB

Annex C: Overview of the principal water regulators

	Water Services Regulation Authority (Ofwat)	Environment Agency	Natural Resources Wales	The Drinking Water Inspectorate
Foundation	Established in 1989 by the Water Act 1989. Derives duties and powers from the Water Industry Act 1991.	Established in 1996, through the Environment Act 1995.	NRW was established in April 2013 through the merging of the Countryside Council for Wales, Forestry Commission Wales, and the Environment Agency in Wales.	Established in 1990 under the Water Act 1989. Derives powers from the Water Industry Act 1991.
Organisational set up and government and Parliamentary accountability	Non-ministerial government department. Ofwat is directly accountable to Parliament and to Welsh ministers. It receives steers from Defra SoS and the Welsh Government through the Strategic Policy Statement (SPS).	Executive non-departmental public body with high degree of autonomy. Reports to Parliament via Defra Ministers.	Welsh Government sponsored body and is therefore accountable to Welsh ministers through the sponsorship minister, which is currently the Cabinet Secretary for Climate Change and Rural Affairs. NRW is also subject to scrutiny by relevant Senedd committees, including The Senedd's Climate Change, Environment and Infrastructure Committee, which conducts annual scrutiny of NRW.[854]	The DWI operates as its own autonomous, specialist unit within Defra. The Chief Inspector of Drinking Water and Inspectors are appointed by the SoS in England and separately by Welsh Ministers in Wales and have a statutory duty to advise Defra SoS and Welsh Minister directly. Certain powers are vested in the inspectors. Other functions are exercisable on behalf of Ministers.

[854] CCEI Scrutiny of Natural Resources Wales

				Inspectors are also statutory appointees. The Chief Inspector and their inspectors are the appointed technical advisers to the Secretary of State and Welsh ministers on all drinking water matters.
Remit and jurisdiction	Economic regulator of the water industry in England and Wales.	Environmental regulator in England (but can enter cross border arrangements in Wales) and holds some UK wide roles.	Environmental regulator, advisor and land manager in Wales (but can enter cross border arrangements in England).	Drinking water quality regulator and statutory regulator for NIS and SEMD of the water industry in England and Wales. The DWI has been transferred the function to undertake the operational Competent Authority duties to regulate OESs on behalf of SoS and Welsh Ministers. DWI are responsible for the regulation of SEMD on behalf of SoS and Welsh Ministers
Primary statutory duties and aims	The Water Industry Act 1991 sets out Ofwat's duties:	The Environment Agency's main aim is to protect or enhance the environment, contributing towards the	The general purpose of NRW, is to presume the Sustainable Management of Natural Resources in Wales	Independent scrutiny of the water industry of England and Wales ensuring the safety,

	To further the consumer objective to protect the interests of consumers, wherever appropriate by promoting effective competition. To secure that water companies (meaning water and sewerage undertakers) properly carry out their statutory functions. To secure that water companies can finance the proper carrying out of their statutory functions To secure that water supply licensees and sewerage licensees properly carry out their licensed activities and statutory functions. To further the resilience objective to secure the long-term resilience of water companies' water supply and wastewater systems, and to secure that they take steps to enable, in the long term, to	objective of achieving sustainable development. The Environment Agency lists its priorities as to: Work with businesses and other organisations to manage the use of resources. Increase the resilience of people, property and businesses to the risks of flooding and coastal erosion. Protect and improve water, land and biodiversity. Improve the way we work as a regulator to protect people and the environment and support sustainable growth.	and apply the sustainable development principles in the exercise of its functions.[855] NRW have a wide range of statutory duties and aims, including as a category one responder, land manager, environmental regulator, and statutory nature conservation body.[856]	quality, sufficiency (including resilience), and the physical and cyber security of drinking water from source to tap. Statutory duties are set out in the Water Industry Act 1991. Drinking water inspectors are statutory appointees with regard to enforcement of section 68 of the Act. Proceedings for any offences arising out of section 68 of the Act and the offence in section 70 of the Act of supplying water unfit for human consumption, are instituted and carried on in the name of the Chief Inspector. The DWI is the regulator for the quality of public supplies of drinking water and enforcement of The

[855] Environment (Wales) Act 2016
[856] The Natural Resources Body for Wales (Functions) Order 2013

	meet the need for water supplies and wastewater services.			Water Supply (Water Quality) Regulations in England and Wales. The DWI is the drinking water quality technical adviser to the Secretary of State for England and the Welsh Government Minister on the quality of private supplies. The DWI is the cyber security regulator for the water industry and the security and emergencies regulator for water supply. ***The DWI's vision and objectives (2020-25) (DWI's aims):*** Improve and protect the quality and sufficiency of drinking water supplies in England and Wales. Protect public health and maintain public confidence in drinking water. Ensure effective and proportionate regulation of the water industry for

				the quality, sufficiency, cyber and physical security of drinking water supplies. Promote strategic planning for water quality and sufficiency now, and for future generations.
Functions	Ofwat enforces water companies' statutory duties under the Act and imposes licence obligations on companies to further its statutory duties. It delivers the 5-yearly Price Review, setting the price, investment and service package customers receive and controlling what companies charge. In addition to the Price Review, Ofwat sets obligations on other things such as financial resilience, consumer protection, procurement, and constraints on harmful monopoly behaviours. Ofwat also takes enforcement action where	Requirements under the Water Framework Directive to establish environmental objectives for water bodies and programmes of measures to meet those objectives, and to produce, publish and periodically review and update river basin management plans. Issues permits to control potentially polluting activities (waste, industry, water quality, groundwater, radioactive substances and waste, mining waste) and monitors compliance against permits. Issues licences on the abstraction and impoundment of water including in relation to drought orders and monitors compliance against licences.	Required under the Water Framework Directive to establish environmental objectives for water bodies and programmes to measure progress against those objectives, and to produce, publish and periodically review and update river basin management plans. Oversees water resources management planning, including licencing, regulation, water company planning and drought management. Issues permits to control activities with the potential to cause environmental harm (including waste, industry, marine licencing, water abstraction, water	Non-statutory functions include: Development and production of non-statutory guidance. Coordinating and convening experts to advise the Chief Inspector of Drinking Water. Dealing with drinking water quality queries, advising ministers and officials on drinking water supply issues. Developing and publishing advice notes for consumers. Providing advice and guidance to local authorities on drinking

	companies do not comply with statutory and license obligations it is responsible for enforcing.	Flood and coastal erosion risk management.	quality, groundwater, species permits, felling licences, radioactive substances). Monitors and enforces compliance with environmental regulations, permits, licences. and standards. Secures flood and coastal erosion risk management. This includes planning management of defences, monitoring, issuing warnings, and responding to events. NRW is the statutory Nature Conservation Body for Wales, including designating SSSIs, issuing species licences, providing advice, and managing 56 National Nature Reserves. Manages the Welsh Government Woodland Estate (~6% of Wales) and regulates forestry activities. Responds to environmental incidents.	water quality, including private water supplies. Managing the Defra water quality and health research programme. Providing information to SoS and Welsh Ministers through the annual Chief Inspector's report on quality of drinking water. Non-statutory consultee on Water Resource Management Plans. A World Health Organization collaborating centre. Developing and implementing water quality performance metrics such as event risk index, compliance risk index, risk assessment risk index. Liaising with other regulators on areas such as RAPID.

			Responsible for environmental monitoring. This includes water quality, aquatic ecology, designated sites, air quality, marine, and others.	

Annex D: Technical details allowance process

Base allowances

1. **Ofwat sets base allowances primarily on the basis of econometric modelling of companies' past spending.** Ofwat reviews companies' actual spending on maintenance and operations over a defined period (13 years at Price Review 2024) and uses this to establish relationships between cost and cost drivers for different companies. Ofwat then benchmarks companies in order to identify an 'efficient' relationship between costs and cost drivers, set with reference to the upper quartile company. Using company forecasts of cost drivers, Ofwat then predicts an efficient level of future costs for each company.[857]

2. **Ofwat also considers some unmodelled costs, as well as allowing companies to submit cost adjustment claims.** While the majority of base costs are modelled, Ofwat does also allow for a smaller portion of unmodelled costs. Unmodelled costs are calculated using a variety of different approaches. Companies are also able to submit cost adjustment claims, where they believe they have company-specific factors that are not appropriately caught by the model.

Enhancement allowances

3. Where multiple companies incur similar types of enhancement costs, Ofwat typically uses comparative benchmarking and unit cost models for evaluation. Comparative benchmarking involves reviewing companies' proposed spending in business plans on a given type of project and using econometric models to identify an efficient level of costs for this project.[858] This relies on accurate submission of planned spending in business plans. To incentivise this, Ofwat has used business plan incentive mechanisms since Price Review 2014, under which companies are financially or reputationally rewarded or penalised on the basis of business plan quality. Alongside comparative benchmarking, Ofwat also makes use of unit costs models for assessing certain types of project.[859]

4. Where proposed spending is company-specific, or sample sizes are small, Ofwat relies on deep and shallow dives to scrutinise spending. Deep and shallow dives occur, respectively, for activities above and below 0.5% of companies' total expenditure.[860] In deep dives, Ofwat applies a series of qualitative criteria to assess the need and efficiency of company spending.[861] For shallow dives, Ofwat applies a

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[857] Assessing-base-costs-at_PR24.pdf
[858] PR24-final-determinations-Expenditure-allowances-Enhancement-cost-modelling-appendix.pdf
[859] Ofwat. PowerPoint Presentation
[860] Ofwat. PowerPoint Presentation
[861] PR24-draft-determinations-Expenditure-allowances-to-upload.pdf. At Price Review 2024, key criteria include 'need for adjustment' and 'cost efficiency'.

lighter touch approach, with proposed costs allowed after a company specific efficiency factor has been applied.[862]

5. Relative to base expenditure, Ofwat's enhancement allowances rely more on qualitative criteria and simple modelling.

Cost of capital

6. Like other regulators, Ofwat sets the cost of capital using the 'Capital Asset Pricing Model' methodology, using estimates of the cost of equity and debt, and an assumption about the notional level of gearing. Under this approach, a single figure is set for the WACC across all companies. The amount of money companies are able to reclaim through bills for the cost of capital is then a function of the assumed WACC and companies' RCVs.[863] In practice, companies will have different levels of gearing to the notional level, and may face different capital costs; the true WACC companies face may therefore differ from the regulatory WACC.

7. Ofwat sets the cost of debt as a function of the cost of new and existing debt, and expected changes in the ratio of new to existing debt. To calculate the cost of existing debt, Ofwat compares quotes submitted by companies to an index of utility debt. For new debt, Ofwat indexes forward based on actual changes in debt cost over the Price Review period, and updates assumptions at the end of the Price Review.[864]

8. **Ofwat sets the cost of equity as a function of the risk-free rate, the total market return, and the equity beta.** The risk-free rate is the return an investor could be expected to make on an investment with zero risks. In practice, government bonds are typically used as a proxy for this. To calculate the risk-free rate, Ofwat therefore use 20-year RPI index-linked gilts at Price Review 2024. Since Ofwat now sets price limits in CPIH terms, Ofwat then applies a wedge to the risk-free rate to provide a figure in RPI terms. The total market return represents the expected real return an investor could expect to make in a well-diversified portfolio. To calculate the total market return, Ofwat uses a mixture of looking at past data and forecasting methods. For example, Ofwat averages long-run returns in FTSE all-share index. The equity beta is a measure of the non-diversifiable risk of a company, which guides the premium above the risk-free rate. If a stock is less risky than a well-diversified portfolio, then beta will be lower than one. To calculate the equity beta, Ofwat relies on daily share price data for 2 publicly traded water companies: Severn Trent and United Utilities.[865]

9. Ofwat sets the notional level of gearing on a more qualitative basis, based on observed debt levels and assessments of the sector's financial resilience.

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[862] Ofwat. PowerPoint Presentation
[863] PR24-draft-determinations-Aligning-Risk-and-Return-Allowed-Return-Appendix.pdf
[864] PR24-draft-determinations-Aligning-Risk-and-Return-Allowed-Return-Appendix.pdf
[865] PR24 Cost of Equity

ODIs

10. When ODIs were introduced at Price Review 2014, Ofwat initially set targets, penalties and rewards on a company-by-company basis, with reference to customer panels.[866] The intent behind ODIs was to encourage companies to internalise costs and benefits associated with service improvements. This was to be achieved by getting customers to value a given improvement in, for example, leakage levels, and then rewarding or penalising companies with reference to this valuation, depending on levels of improvement. The idea was this would facilitate automatic cost benefit analysis by companies. Where customer valuations exceeded the expected cost of improvement to companies, companies would attempt to deliver improvements in order to secure a reward, where they did not, companies would not and would internalise the cost. Implicit in this approach was an assumption that ODIs would vary between companies, reflecting different customer preferences. There were only 2 mandatory ODIs (leakage and service incentive mechanism).

11. **The accuracy of customer panels, however, was subsequently reviewed.** Ofwat identified that the valuations provided by customers in panels was highly sensitive to the framing of questions around the improvements they would like to see. This led Ofwat to question the accuracy of customer panels in determining valuations.[867] At the same time, companies overperformed against targets at Price Review 2014, which may have encouraged Ofwat to view ODIs as 'too easy'.[868]

12. Ofwat responded at Price Review 2019 by moving away from customer panels to a more top-down approach to setting targets, and greater use of benchmarking. Ofwat declared its intent to sharpen incentives at Price Review 2019. This involved specifying a number of common performance commitment areas across companies, with reference to performance commitments from Price Review 2014.[869] Companies were then required to propose reward and penalty rates, with benchmarking applied by Ofwat to identify sector standards (upper quartile used as reference for many performance commitments). Ofwat did still allow, however, companies to submit 'bespoke' performance commitments based on customer feedback.[870]

13. Following these changes, there has been net underperformance against targets in Price Review 2019, leading to complaints from companies that the ODI framework is hindering improvements. This has led some in the industry to declare that Price Review 2019 targets were too challenging.[871] It is worth noting that not all companies under-performed against ODIs in Price Review 2019. Some, such as Severn Trent,

[866] PR14_Review_Paper_Jan_2022.pdf
[867] PR24-and-beyond-Reflecting-customer-preferences-in-future-price-reviews-–-a-discussion-paper.pdf ?
[868] https://www.ofwat.gov.uk/regulated-companies/price-review/price-review-2014/pr14-review/
[869] 20171213 Final methodology RESTRICTED
[870] Appendix-6-Performance-commitments-1.pdf
[871] Untitled

appear to have been successful in meeting ODIs, with positive payments in each year of Price Review 2019 to date.[872]

14. At Price Review 2024, Ofwat has continued to move towards a more standardised, top-down approach to setting ODIs, albeit with increased safety mechanism.**[873]** This has involved setting a single set of ODIs for the industry, calibrated by Ofwat. The targets set by Ofwat are increasingly stretching, building on targets set at Price Review 2019. Responding to criticism that targets are too challenging, Ofwat has consulted on a number of safety mechanisms at Price Review 2024.[874] In particular, Ofwat has proposed an Outturn Adjustment Mechanism, which would apply a uniform adjustment to all companies' incentive payments each year, such that the outcome for the median company is zero. This should reduce the likelihood of net penalties across the industry as a whole.

15. Companies and investors have complained about the level of risk imposed on them through the ODI mechanism.**[875]**

[872] ST-APR-2022-Customer-Summary-v2.pdf, PowerPoint Presentation, Final-determination-of-Severn-Trent-Waters-in-period-outcome-delivery-incentives-for-2022-23.pdf
[873] PR24-final-determinations-In-period-adjustments.pdf
[874] PR24-Consultation-on-outturn-adjustment-mechanism.pdf
[875] Ofwat in danger of repeating same mistakes say water investors | GIIA

Annex E: Key Water Legislation

Date	Legislation	Overview	Applies in England	Applies in Wales
1949	**National Parks and Access to the Countryside Act 1949**	Makes provisions for National Parks and the establishment of a National Parks Commission and confers on Nature Conservancy and local authorities powers for the establishment & maintenance of nature reserves	✓	✓
1971	**Prevention of Oil Pollution Act 1971**	Regulates oil discharges from shipping	✓	✓
1975	**Reservoirs Act 1975**	Makes provision for the regulation of reservoirs	✓	✓
1981	**Wildlife and Countryside Act 1981**	Makes provisions in relation to wildlife protection. Amended law relating to nature conservation, the countryside & National Parks.	✓	✓
1985	**Water (Fluoridation) Act 1985**	Makes provision with respect to the fluoridation of water supplies	✓	✓
1988	**Public Utility Transfers and Water Charges Act 1988**	Enabled water authorities to set up metering experiments in varying types of property under differing charging methods	✓	✓
1989	**Water Act 1989**	Provided for the privatisation of the former water authorities	✓	✓
1989	**Sewage Sludge Directive (86/278/EEC)** **Sludge (Use in Agriculture) Regulations 1989**	Regulates the use of sewage sludge in agriculture, including such a way as means to prevent harmful effects on soil, vegetation, animals, and humans	✓	✓
1990	**Environmental Protection Act 1990**	Part IIA regime seeks to identify and deal with significant pollution of controlled waters. Local authorities are the lead regulators and the EA provides advice on water pollution in England	✓	✓

1991	**Water Industry Act 1991**	Sets out the main powers and duties of the water and sewerage companies (replacing those set out in the Water Act 1989) Defines the powers of the Director General of Water Services (Ofwat) . Established the Consumer Council for Water (CCW)	✓	✓
1991	**Land Drainage Act 1991**	Requires the owner of a watercourse to maintain it in such a condition that the free flow of water is not impeded and provides for Internal Drainage Boards and districts	✓	✓
1991	**Water Resources Act 1991**	Sets out the functions of the National Rivers Authority (now the Environment Agency), and introduced water quality classifications and objectives	✓	✓
1992	**Competition and Service (Utilities) Act 1992**	Increased Ofwat's powers to determine disputes and provided for some increased competition in the water industry	✓	✓
1994	**Urban Waste Water Treatment Directive (91/271/EEC)** **Urban Waste Water Treatment (England and Wales) Regulations 1994**	Provides for the protection of the water environment from urban waste water and certain industrial discharges	✓	✓
1995	**Environment Act 1995**	Restructured environmental regulation Created the Environment Agency and conferred functions on the Natural Resources Body for Wales (Natural Resources Wales). S6 provides for EA and NRW to take action to conserve, redistribute and secure the proper use of water resources.	✓	✓

1998	**Competition Act 1998**	Prohibits agreements between businesses that prevent, restrict, or distort competition, and abuse of a dominant market position. Provides for enforcement in relation to the water and sewerage sectors by the Competition and Markets Authority (CMA) as well as Ofwat	✓	✓
1999	**Pollution Prevention and Control Act 1999**	Provides powers for environmental permitting regulations to control and prevent pollution, including emissions into water. See the Environmental Permitting (England and Wales) Regulations 2016	✓	✓
1999	**Water Industry Act 1999**	Made important amendments to the Water Industry Act1991: - Removed a company's right to disconnect domestic customers for non-payment of bills; - Limited the circumstances in which companies can start charging domestic customers on a metered basis; - Secured the ability of companies to continue charging customers on the basis of rateable value	✓	✓
1999	**Water Supply (Water Fittings) Regulations 1999**	Sets requirements for water fittings supplied with water from the public water supply	✓	✓
2000	**Countryside and Rights of Way Act 2000**	Makes provision for public access to the countryside, amends law relating to public rights of way, enables traffic regulation orders to be made for the purpose of conserving an area's natural beauty, amends law relating to nature conservation and protection of wildlife	✓	✓
2000	**Water and Sewerage (Conservation, Access and Recreation) (Code of Practice) Order**	Approves the Code of Practice on Conservation, Access and Recreation, which gives guidance to water companies and EA under ss3 and 4 WIA and 6-8 Environment Act 1995	✓	
2000	**The Drinking Water (Undertakings) (England and Wales) Regulations 2000**	Section 19 WIA 1991 sets out exceptions to the duty to enforce by way of undertakings. These Regulations set out the application process for / contents of / conditions of acceptance in relation to such undertakings	✓	✓

2001	**Control of Pollution (Oil Storage) (England) Regulations 2001**	Sets requirements for oil storage to prevent or minimise contamination of controlled waters by oil	✓	
2002	**Enterprise Act 2002**	Amended the Water Industry Act 1991 to update the regime for the compulsory reference of certain mergers between water companies to the Competition Commission (now the CMA)	✓	✓
2003	**Water Act 2003**	Amended the framework for abstraction licensing, made changes to the regime for economic regulation, and extended the scope for competition in the industry to large users Amended water legislation to provide for Welsh Ministers to regulate water companies operating wholly or mainly in Wales	✓	✓
2004	**Strategic Environmental Assessment Directive (2001/42/EC) Environmental Assessment of Plans and Programmes Regulations 2004**	Requires the assessment of the likely environmental effects of certain plans and programmes including those relating to waste and water management that have a strategic role in directing development and other interventions in the environment	✓	✓
2004	**The Water Mergers (Modification of Enactments) Regulations 2004**	These Regulations apply Part 3 of the Enterprise Act 2002 with relevant modifications in relation to water merger references to the CMA under section 32 of the Water Industry Act 1991	✓	✓
2005	**Drought Plan Regulations 2005**	Set out requirements on water undertakers in relation to drought plans, in accordance with the Water Industry Act 1991	✓	✓
2005	**The Water Supply (Exceptions from Supply System Prohibitions) Regulations 2005**	Set out exceptions to the s66I WIA offence of using the water undertaker's supply system for the purpose of supplying water to any premises	✓	✓
2006	**Water Resources (Abstraction and Impounding) Regulations 2006**	Provisions relating to abstraction and impounding iThese include procedural requirements such as time limits for making applications and appeals	✓	✓

2006	**Natural Environment and Rural Communities Act 2006**	Makes provisions about bodies concerned with the natural environment and rural communities, including Natural England. Includes requirements relating to wildlife, sites of special scientific interest, National Parks & the Broads and the Inland Waterways Amenity Advisory Council	✓	✓
2006	**Government of Wales Act 2006**	Sets out devolution settlement for Wales. Includes provision on regulation of water companies wholly or mainly in Wales.	✓	✓
2007	**Water Resources Management Plan Regulations 2007**	Prescribe how water undertakers are to prepare and publish water resources management plans	✓	✓
2008	**Planning Act 2008**	Provides that the construction of dams/reservoirs and development relating to the transfer of water resources in England by a water undertaker are nationally significant infrastructure projects (NSIP), requiring a development consent order (DCO). Infrastructure projects in the field of water that are not NSIPs can be subject to the DCO regime if considered by SoS under s35 as nationally significant	✓	✓
2008	**Water Supply and Sewerage Services (Customer Service Standards) Regulations 2008**	Set out service standards that must be met by water and sewerage undertakers and provide for payments to be made to customers for failure to meet the prescribed standards	✓	✓
2009	**Environmental Damage (Prevention and Remediation) (Wales) Regulations 2009**	The regulations implemented the Environmental Liability Directive and specify the types of damage to water constituting "environmental damage"		✓
2009	**Water (Prevention of Pollution) (Code of Good Agricultural Practice) (England) Order 2009**	Approves under s.97(1) Water Resources Act 1991 the Code to protect water, soil and air quality	✓	
2009	**Floods Directive (2007/60/EC)**	Requires the carrying out of flood risk assessments, the creation of maps of flood risk, and the development of flood risk management plans	✓	✓

2009	**Marine and Coastal Access Act 2009**	Introduces a system of marine management, including a marine planning system, changes to the system for licensing the carrying on of activities in the marine environment, and the designation of conservation zones	✓	✓
2010	**The Water Use (Temporary Bans) Order 2010**	s76 WIA allows a water undertaker to prohibit one or more specified uses of water supplied by it if it thinks it is experiencing or may experience a shortage	✓	✓
2010	**Flood and Water Management Act 2010**	Provides for the use of sustainable urban drainage systems (SUDs) Amended the Water Industry Act to modernise the list of activities that can be restricted by water companies in a drought. Makes provision for flood and coastal erosion risk management and establishes Regional Flood and Coastal Committees Made it easier for water companies to offer lower tariffs to certain groups. Provides for flood and coastal risk management authorities, and the carrying out of certain functions by those authorities	✓	✓
2010	**Marine Strategy Framework Directive (2008/56/EC)** **Marine Strategy Regulations 2010**	Establishes marine regions on the basis of geographical and environmental criteria. Provides for the development of strategies to protect their marine waters	✓	✓
2010	**Water Resources (Control of Pollution) (Silage, Slurry and Agriculture Fuel Oil) (England) Regulations 2010**	Makes provision for the custody of silage, slurry or fuel oil for the purpose of prevention of pollution of water	✓	
2010	**Flood Risk Management Functions Order 2010**	Specifies functions of a sewerage undertaker in respect of surface water under s94 Water Industry Act 1991	✓	✓
2010	**Environmental Permitting (England and Wales) Regulations 2010**	Integrate existing permitting regimes covering water discharge consenting, groundwater authorisations, and radioactive substances regulation authorisations into the environmental permitting system	✓	✓

2010	**Environmental Civil Sanctions (England) Order 2010**	Permits the Environment Agency to impose civil sanctions where offences breaching certain environmental offences under the EA 1995 and WRA 1991 have been breached	✓	
2011	**The Drought Direction 2011**	Lists the purposes which may be specified in any ordinary drought order	✓	✓
2011	**Regional Flood and Coastal Committee (England and Wales) Regulations 2011**	Relate to the Flood and Water Management Act 2010. Set out procedure to be followed by the EA when dividing England and Wales into regions under the 2010 Act and makes provision about appointments to Regional Flood and Coastal Committees and their functions	✓	✓
2011	**Water (Prevention of Pollution) (Code of Good Agricultural Practice) (Wales) Order 2011**	Approves the Code of Good Agricultural Practice to protect water, soil and air quality		✓
2013	**Bathing Water Directive (2006/7/EC)** **Bathing Water Regulations 2013**	Provides for the designation and testing of bathing waters	✓	✓
2013	**Water Industry (Specified Infrastructure Projects) (English Undertakers) Regulations 2013**	Provides for the procurement, licensing and regulation of large or complex high risk infrastructure projects provided by water undertakers	✓	✓
2013	**The Reservoirs Act 1975 (Exemptions, Appeals and Inspections) (England) Regulations 2013**	Provide for certain structures not to be treated as large raised reservoirs; contain appeals provisions and provisions on inspections	✓	
2013	**The Reservoirs Act 1975 (Capacity, Registration, Prescribed Forms, etc.) (England) Regulations 2013**	Contain provision about the calculation of the capacity of and registration of large raised reservoirs. Provide for reporting and for the form of documentation to be used by engineers	✓	
2014	**Water Act 2014**	Provides for greater competition for non-household customers and gives Ofwat new powers to make rules about charges and charges schemes Makes provisions for flood insurance and drainage boards	✓	✓
2015	**Water Industry (Charges) (Vulnerable Groups) (Consolidation) Regulations 2015**	Provide for water company charging schemes to include provision for providing financial assistance to certain persons in receipt of certain benefits or with certain	✓	✓

		medical conditions. The duty can be discharged if the company has a social tariff in place which gives eligible persons the same (or better) financial assistance		
2015	**Nitrate Pollution Prevention Regulations 2015**	Provide for the designation of nitrate vulnerable zones and impose annual limits on the amount of organic manure that may be applied or spread in a holding in a nitrate vulnerable zone	✓	✓
2015	**Environmental Damage (Prevention and Remediation (England) Regulations 2015**	Implemented the Environmental Liability Directive and specify the types of damage to water constituting "environmental damage". The EA is the regulator, regarding the prevention and remediation of environmental damage to water and any environmental damage arising from an activity authorised by it under the Environmental Permitting Regulations	✓	
2015	**Well-being of Future Generations (Wales) Act 2015**	Requires the Welsh Ministers and other named public bodies to undertake sustainable development and to work towards the Well-being goals. The Well-being goals include a prosperous, resilient, healthier and globally responsible Wales		✓
2016	**Water Supply (Water Quality) Regulations 2016** **Private Water Supplies (England) Regulations 2016**	Implemented the Drinking Water Directive. Set quality standards for drinking water and require drinking water quality to be monitored and reported on	✓	
2016	**Reservoirs Act 1975 (Capacity, Registration, Prescribed Forms, etc.) (Wales) Regulations 2016**	Contain provision about the calculation of the capacity of and registration of large raised reservoirs. Provide for reporting and for the form of documentation to be used by engineers		✓
2016	**The Reservoirs Act 1975 (Exemptions, Appeals and Inspections) (Wales) Regulations 2016**	Provide for certain structures not to be treated as large raised reservoirs; contain appeals provisions and provisions on inspections		✓
2016	**Water Quality and Supply (Fees) Order 2016**	Allows the Chief Inspector of Drinking Water to charge a water supplier a fee for the exercise of certain functions	✓	✓

2016	**Environmental Permitting (England and Wales) Regulations 2016**	Provides for ongoing supervision by regulators of activities which could harm the environment, by way of permits	✓	✓
2016	**Shellfish Waters Protected Areas (England and Wales) Directions 2016**	Sets out the microbial standard to be observed in all shellfish water protected areas	✓	✓
2016	**The Environment (Wales) Act 2016**	Sets out measures for the sustainable management of natural resources. Provides for targets for reducing emissions of greenhouse gases, measures around more sustainable management of waste including its ingress into water courses and infrastructure, and measures around fisheries and flood management		✓
2017	**Private Water Supplies (Wales) Regulations 2017**	Regulate private water supplies intended for human consumption		✓
2017	**Water Abstraction (Transitional Provisions) Regulations 2017**	Transitional provisions for water abstraction following amendments made by Water Act 2003 to Water Resources Act 1991 including procedural requirements for making and determining certain licence applications and appeals	✓	✓
2017	**Water Framework Directive (2000/60/EC)** **Water Environment (Water Framework Directive) (England and Wales) Regulations 2017**	Creates a single system of water management, based around a natural basin Set objectives and deadlines for improving water quality, looking at both the ecology of the water and its chemical characteristics	✓	✓
2017	**Conservation of Habitats and Species Regulations 2017**	Regulate activities which may have an impact on certain habitats and species	✓	✓
2018	**Reduction and Prevention of Agricultural Diffuse Pollution (England) Regulations 2018**	Require land managers to comply with provisions on application and storage of organic manure to prevent diffuse water pollution	✓	
2018	**Network and Information Security (NIS) Directive ((EU)2016/1148)** **Network and Information Systems Regulations 2018**	Provide for measures to protect network and information systems. Include provision for inspections in relation too drinking water supply and distribution	✓	✓
2018	**Water Supply (Water Quality) Regulations 2018**	Regulate drinking water supplied by water undertakers whose areas are wholly or mainly in Wales		✓

2020	**Drought Plan (England) Directions 2020**	Required water undertakers to submit a draft drought plan to Defra by 1 April 2021	✓	
2020	**Fisheries Act 2020**	Regulates the UK fishing industry following the UK's exit from the EU and its Common Fisheries Policy	✓	✓
2021	**Environment Act 2021**	Makes provision about targets, plans and policies for improving the natural environment; for statements and reports about environmental protection. Set up the Office for Environmental Protection. Includes provisions inserted into the WIA 1991 governing monitoring requirements for storm overflows	✓	✓
2022	**Security and Emergency Measures (Water and Sewerage Undertakers and Water Supply Licensees) Direction 2022**	Sets outcomes water companies must meet in the interest of national security and for the purpose of mitigating the effects of any civil emergency	✓	✓
2022	**Water Resources Management Plan (England) Direction 2022**	Directs water undertakers whose areas are wholly or mainly in England on the content of the Water Resources Management Plans	✓	
2023	**Environmental Targets (Water) (England) Regulations 2023**	Creates four legally binding long-term targets in the area of water. The targets aim to address nutrient pollution from agriculture and wastewater, the reduction of the concentration of metals in rivers from abandoned metal mines, and the reduction of water demand	✓	
2023	**Levelling-up and Regeneration Act 2023**	Makes provision for levelling-up, regeneration and planning. Provides for environmental outcome reports for certain consents and plans and about nutrient pollution standards	✓	✓

2024	**The Water Industry (Special Administration) Regulations 2024**	These Regulations modernise the special administration regime for water companies	✓	✓
2024	**The Water Industry (Special Administration) (England and Wales) Rules 2024**	Make updated provision for the special administration procedure that applies to water companies	✓	✓
2025	**Water (Special Measures) Act 2025**	This will include measures to regulate the appointment of and payment of bonuses to water company executives, provide for consumer involvement in water company decision-making, require annual pollution incident reduction plans, and extend powers relating to civil and criminal sanctions	✓	✓