

# Annual Performance Report 2022

anglianwater

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## Version Control

**1** This version of the Annual Performance Report was originally published and approved on DATE MONTH YEAR and is an update to the version that was originally published on 15 of July 2022.

**2** This version includes amendments to tables and commentary as a result of the Ofwat query process. The table below summarises the changes that have been made and these changes have been highlighted red within the data tables.

Table(s) / Line(s)	Description
1F.7	Updated inflation methodology as prescribed by Ofwat
4H	Prior year comparatives in commentary updated for change in accounting policy
4H.10	Restated following Ofwat query process
4K.16	Spend incorrectly recorded as maintenance (4D.9 and 2B.16/17 updated as a result)
4L.54	Cumulative figure updated following Ofwat query process
4L.70/72	Figure restated following reallocation of costs (from 4K.16 above)
4M.9	Cumulative figure updated following Ofwat query process
4M.37/39	Figure restated following Ofwat query process - reallocated to 4M.4/6
4M.49	Cumulative figure updated following Ofwat query process
6A.14-18	Reallocated works according to the type of source which makes up the bigger share
6A.20-27	Recategorised works based on their maximum production capacity, DI % was amended accordingly
7D.6/7/14	Works classification amended
7F	Site population column updated to correct units
6D.2/3	Expenditure reallocated
8B.17	Including omitted data to align with table 4E

## Introduction

### Annual Performance Report and required regulatory information

We present over the following pages the Annual Performance Report (APR), for the year ended 31 March 2022. This provides specific and transparent information on our progress on the delivery of customer outcomes, service levels, costs and financial and environmental performance. The APR is prepared to comply with Condition F of the Instrument of Appointment of Anglian Water Services Limited as a water and sewerage undertaker under the Water Industry Act 1991 and the Regulatory Accounting Guidelines (RAGs) published by Ofwat. This report complements our separately published Annual Integrated Report, available on our website [www.anglianwater.co.uk](http://www.anglianwater.co.uk), which provides more information about our activities in 2021/22.

Commentary has been included beneath each APR table to provide further information, to explain significant year-on-year variances in performance and to highlight assumptions where appropriate. The subheadings in the commentary refer to the APR table line numbers to aid navigation.

Beyond the tables, a full set of the disclosures required by RAG 3.13 is set out in a separate section.

This report includes the data assurance summary, which demonstrates the process carried out by Anglian Water Services to evidence that information provided is reliable.

At the end of the report are the summary reports of our Independent Auditor and our External Non-financial Assurance provider on the conclusions of the work they have undertaken to assess the reliability of our submission.

The APR is prepared in accordance with the Regulatory Accounting Guidelines (RAGs) issued by Ofwat, which are based on International Financial Reporting Standards (IFRSs). There are differences between IFRSs and the RAGs and where there is a conflict, the RAGs take precedence.

In this report, Anglian Water Services Limited is also referred to as Anglian Water, AWS or the Company.

The Annual Performance Report was approved by the Board of Directors on 13 July 2022 and was signed on their behalf by:

**Peter Simpson**

Chief Executive

**John Hirst**

Chairman

## Key Messages

Good further progress has been made in 2021/22 on the delivery of our purpose: to bring environmental and social prosperity to the region we serve through our commitment to Love Every Drop.

### Overall highlights

- **Largest ever single year programme of capital investment completed on schedule:** £577.7 million invested in the East of England in 2021/22 (31 March 2021: £447.0 million), including £109 million in abstraction reduction to protect chalk streams and rivers; £68.1 million for climate resilience schemes and £63.1 million to address population growth.
- **Accelerated £800 million environmental programme delivery well ahead of schedule:** cumulative total of 1,184 schemes delivered since 2020, including investment in storm tanks, event duration monitors and bathing water quality. As part of the programme we are today announcing the UK's largest ever programme of new wetlands. More than 25 new natural treatment wetlands modelled on award-winning Ingoldisthorpe blueprint will curb the impact of phosphates and nitrates and further improve biodiversity across the region; creation of first three planned to begin early 2023.
- **£32 million of tailored support in 2021/22 to customers facing affordability challenges:** 324,750 people supported this year and unprecedented £65 million package of support set aside for customers in 2022/23 as the cost of living crisis bites. Our total AMP package extends to £232 million as we seek to fulfil our aim of no customers being in water poverty.
- **Net zero carbon programme ahead of schedule:** industry-leading 2030 net zero routemap published as company leads the water sector at COP26.
- **Challenging year for performance against regulatory commitments resulting in net ODI penalty:** Majority on track or ahead of target, including environmental programme delivery, leakage and mains repairs, but targets not met for some key measures including pollutions, flooding and mains bursts, leading to an overall forecast net penalty for 2021/22 of circa £8 million. Across the AMP to date we remain in a net positive position, and anticipate returning to net reward in 2022/23.
- **Flow to full treatment:** Ofwat and the Environment Agency launched industry-wide investigations in 2021 into compliance with conditions of environmental permits. While the final outcome of these investigations isn't yet known, we have provided comprehensive information to both regulators and continue to engage positively with them.
- **Company financial restructure completed:** shareholder injection of more than £1 billion into Anglian Water, reducing gearing to 65 per cent (31 March 2021: 82 per cent).

### Financial highlights

- **Appointed revenue up £18.7 million (1.5 per cent)** as a result of higher developer activity following last year's lockdowns, and income which has been ring-fenced to fund our LITE tariff, which has supported customers through Covid-19 and is being retained to provide additional support through the cost of living crisis.
- **Operating profit up £23.4 million (7.3 per cent)** Revenue movements in combination with strong cash collection and the release of some of the Covid-19 provision, both reducing our bad debt charge, have been offset in part by the impact of inflation on our costs, tankering due to winter 2021/22 wet weather and our work to drive leakage reduction performance. In addition we changed the way in which we deliver boundary box and external meter chamber replacement. As a result of the change in delivery, the costs are now being treated as capital expenditure rather than operational.
- **Appointed loss before tax and fair value movements of £27.0 million down £160.8 million (117.8 per cent),** primarily driven through higher interest costs on inflation-linked debt due to higher inflation year on year.

- **Tax charge for the period has increased by £268.6 million** due to the increase in deferred tax provisions ahead of the corporation tax rate rise from 19 per cent to 25 per cent which will take effect from April 2023.
- **Final appointed dividend of £83.0 million** was paid in the period (2021: £nil), reflecting the Company's dividend policy having regard to Anglian Water's purpose and duties under the company's Articles of Association. In line with our dividend policy, a final dividend of £169.0 million relating to 2021/22 was paid in June 2022. A deduction of £9.0 million has been made to reflect the ODI penalty in the period. This decision is in combination with an equity injection of £1,165.0 million in the period and results in a net equity injection for the AMP of £899.7 million. Through these capital injections the company continues to benefit from the strong support of its ultimate shareholders who will, for the first time since 2017, receive a dividend: £91.8 million.
- **Company financial restructure completed:** shareholder injection of more than £1 billion into Anglian Water, reducing gearing to 65 per cent (31 March 2021: 82 per cent).
- **Cash generated from operations up £120.2 million (19.0 per cent)** a result of higher operating profit, positive working capital movements and strong customer cash collection.
- **Net debt down £838.9 million (12.8 per cent)** following the financial restructuring completion which has reduced gearing to 65 per cent.

#### **Capital investment and operational highlights: delivering our 2020-25 Final Determination**

- **£577.7 million capital investment in East of England, largest ever single year programme:** Programme highlights for the full year include £109 million of investment in river water quality; £68.1 million of investments in abstraction reduction and climate resilience, and £63.5 million of investments to address population growth. Overall, £269.3 million has been invested in capital maintenance and £308.4 million in capital enhancement.
- **World-class levels of leakage reduction delivered,** surpassing our most stretching target ever, achieving a 6.1 per cent reduction in leakage against performance which was already best-in-class.
- **On track delivery of award-winning smart meter rollout:** 310,321 smart meters installed towards 2025 target of 1.1 million meters, despite supply chain challenges causing temporary pause in programme.
- **Rated 'sector-leading' in Ofwat Service Delivery Report** in November 2021; regulator called out emerging evidence of cost efficiency.
- **First sections of pipeline complete in Anglian Water's biggest ever infrastructure programme:** creating hundreds of kilometres of large-diameter pipelines to enable water to be moved from areas where supplies are more abundant to areas which already face a shortfall.
- **Majority of performance commitments on track amid challenging year:** Regulatory targets met/surpassed across key measures including leakage, Water Industry National Environment Programme (WINEP) delivery, risk of severe restrictions in a drought, abstraction, mains repairs, properties at risk of low pressure, operational and capital carbon reduction, support for customers in vulnerable circumstances and management of void properties. However, the ongoing knock-on impacts of the exceptional weather we faced in early 2021, together with supply chain issues, have been challenging, particularly in the context of the toughest targets we have ever been set. Prioritising maintaining services to customers through widespread and persistent flooding has dented our performance in the year that followed, with colleagues and resources diverted from routine duties. We have not hit our performance targets in areas including pollutions, supply interruptions, flooding and reactive mains bursts, incurring regulatory penalties in these areas.
- **Our shareholders' support:** This June, we will return to paying a dividend to the shareholders of Anglian Water Group for the first time since 2017. Over that period they have reinvested returns, stood by us when times were tough, and wholeheartedly



endorsed the changes we made to enshrine environmental and social purpose. We are pleased now to be in a position to repay their faith in us by sharing our financial returns with them.

## **1 Protecting and enhancing the environment: Creating a sustainable future for our region**

- **Ahead of schedule delivery of our £800 million+ accelerated WINEP**, including increased coverage of event duration monitors and early delivery of storm tank improvement programme, with a cumulative total of 1,184 schemes delivered.
- **Get River Positive partnership launched with Severn Trent** underpinned by pledges to prevent harm to UK rivers and ensure they can thrive, create opportunities for people to enjoy rivers, create new habitats and be transparent about performance and plans.
- **On track to deliver 2030 net zero carbon goal** following publication of detailed routemap in July 2021 and ahead-of-target reductions in operational and capital carbon; company named by Financial Times/Statista as a 2022 European Climate Leader and rated in top 5.5% of companies globally for our response to climate change by CDP.
- **Ahead of regulatory target on abstraction reduction** (376 million litres vs 87 million litre target) following £68.1 million of capital investments in 2021/22, leaving more water in the environment to safeguard precious chalk streams and waterways.
- **Co-lead of water theme at COP26 Resilience Hub with engineering consultancy Mott MacDonald and the Water Pavilion coalition**, the only UK water company with a formal role at the conference.
- **Rapid progress made on flagship Future Fens Integrated Adaptation initiative**, featured at COP26 as blueprint for integrated water management.
- **Seven successful applications to Defra's £150 million Flood and Coastal Resilience Innovation Programme** plus £1.7 million invested in flood alleviation and SuDS retrofit schemes with partners across our region.
- **Anglian Water CEO chairs Catchment Management summit with HRH The Prince of Wales** at Clarence House.
- **98 per cent reduction in metaldehyde levels** following successful seven-year Slug it Out reduction programme; 100 per cent engagement achieved with farmers at our key reservoirs.

## **2 Purpose-led delivery for our people, customers and communities: Making life better for our customers, every single day**

- **Facing in to the cost of living challenge:** £32 million of affordability support given to a record 324,750 customers in 2021/22, with support ramped up to £65 million to address anticipated customer hardship in 2022/23; customers in need signposted to £1.7 million of potential unclaimed benefits in year.
- **Going above and beyond:** Customer service team working in partnership with more than 150 charities and other organisations to provide tailored support – up 50 per cent in a year.
- **Record levels of support for customers in vulnerable circumstances:** 9.4 per cent of Anglian's customers supported through Priority Services Register (regulatory target 3.6 per cent), with regulator's AMP-wide target surpassed.
- **MyAccount developments enable customers with smart meters to monitor usage up to every hour;** further service improvements include increased functionality for reporting issues.
- **£1 million Positive Difference Fund fully dispensed**, benefiting more than 100,000 people in our region through more than 160 community groups.
- **Led development as lead sponsor of new BSI standard for Purpose-Driven Organisations;** lateral endorsement for purpose-led approach includes Best Use of Purpose as a Business Driver (Strategic Comms Awards) and Business in the Community Responsible Business Tracker result 76 per cent (vs cohort average 45 per cent). Internal survey recorded 83 per cent of staff feel connected with our environmental and social purpose (up 25 per cent year on year).

- **Support for wellbeing:** Winner of Royal Society Award for Public Health Workplace Health and Wellbeing; all colleagues given a wellness day in addition to annual leave to support wellbeing post-pandemic.
- **RoSPA Gold Award for health and safety:** 18th consecutive year of RoSPA recognition.
- **Employee engagement remains strong:** 81 per cent of employees are proud to work at Anglian Water, while 86 per cent agree we are an inclusive place to work.
- **Religious holiday swap policy launched:** employees can now switch out Christian bank holidays to celebrate festivals relating to their own faith.
- **Company-wide inclusion training launched:** mandatory course for all employees developed in collaboration with union colleagues and Inclusion Community.

### **3 Innovation and collaboration driving long-term resilience in East of England: Delivering our identified business priorities**

- **£17.3 million share of Ofwat Innovation Fund:** Anglian awarded 25 per cent of the total pot, the most awarded to any water company, leading five projects and partnering on 11 more.
- **New multi-sector reservoirs set to serve 750,000 people:** Gateway funding secured through RAPID (the Regulators' Alliance for Progressing Infrastructure Delivery) to progress our ambitious plans for two new multi-sector reservoirs to supply 250 million litres of water a day by the mid to late 2030s.
- **Planning for new operationally net zero water recycling centre for Cambridge:** third phase of community consultation completed April 2022; relocation from existing site to free space for 5,600 new homes; new centre scheduled to open 2028 pending planning consent.
- **Ambitious innovation acceleration plan launched:** Driving action on rivers, carbon reduction, leakage and optimisation, water resources, and climate change adaptation and resilience.

## Board statement on accuracy and completeness of data and information

RAG 3.13 requires the Board to confirm that the data and information which the Company has provided to Ofwat in the reporting year and/or which it has published in its role as a water and sewerage undertaker was accurate and complete.

The Board has considered the following sources of assurance in response to this requirement:

- the Company's Assurance Framework, which describes the Company's assurance philosophy and the approach it takes to test the reliability and accuracy of its data. The Assurance Framework is published on the Company's website
- the formal system used by the Company for the 'collection and storage of reliable data relating to our key assets and activities to fulfil all the requirements of Ofwat and other stakeholders and to deliver our business goals'. This system is part of our quality management system which is certified to ISO 9001.
- the other certified management systems used by the Company to manage its operations, such as water services, environmental management, occupational health and safety, laboratory services and carbon management. Accuracy of data is integral to all of these systems. The Board Audit committee oversees the completion of actions to correct issues identified in management systems audits and categorised as high risk
- the feedback from Ofwat on its 2020/21 Annual Performance Report and, where relevant, other submissions
- The Board's comprehensive approach to risk management, which includes maintenance of a corporate risk register. The risk that 'the data we provide are not robust' is a Top Tier risk in the register and mitigating actions are regularly reviewed
- reports to the Board's Audit Committee from the Company's external auditors who, as part of their routine audit process, consider and report on a range of risks which could result in inaccurate financial information (including the risk associated with the exercise of management judgement). The Board Audit Committee manages a comprehensive process to ensure that all internal audit recommendations are completed
- reports to the Board's Audit Committee from the Company's Internal Auditors which highlight potential improvements to business activities and processes, some of which may result in the production of data and information for onwards transmission to Ofwat
- the annual "Statement of Responsibility" process (conducted by Internal Audit) which requires all managers in the business to confirm that the Company's resources, policies, organisational structures, risk management processes, accounting systems and governance arrangements are sufficient to enable the Company to meet its responsibilities, including the provision of accurate information. The results of this process are reported to the Board's Audit Committee
- the cultural values of the business, in which accurate information is valued, resources are allocated to ensure information accuracy and the provision of high quality information is rewarded
- the Company's code of conduct, which summarises a series of policies which are designed to underpin the cultural values referred to above
- the Company's Whistleblowing Policy and procedure which facilitates the reporting of concerns regarding the accuracy or legitimacy of data and information which may be relied upon by the Company; and
- the relevant reports of the Executive Directors to meetings of the Board during 2021/22.

The Board considered its approach to assurance in a review in 2021. The Board's discussion included consideration of the Company's Assurance Framework, the performance of its third party external assurance providers, the quality of the Company's submissions and publications (as measured by stakeholder feedback and errors found) and the roles of various parties, including the Board itself. The Board satisfied itself that the Company's approach to assurance was fit for purpose and that the role of the Board was being fulfilled. Members of the Board have reiterated their satisfaction with the approach in subsequent discussions.

The Board Audit Committee met on three occasions during 2021/22. At each of these meetings it received reports from both internal and external auditors.

After consideration of all these factors, the Board is able to confirm that:

- all data and information provided to Ofwat or published has been compiled in a planned, professional, systematic fashion and submitted in good faith;
- the Company has sought to explain trends in data using best available, objective evidence;
- where assumptions have been required to make calculations, the Company has used its best estimates and made those assumptions clear;
- where the Company has identified errors in any data or information it has provided, it has disclosed and corrected those at the earliest opportunity;
- where relevant, the Company has made every effort to indicate the quality of its data and the likely margin of uncertainty.
- Accordingly, the Board has no reason to believe that the information and data it has provided during 2021/22 is other than accurate and complete in all material respects.

This Statement was approved by the Board of Anglian Water Services Limited on 13 July 2022, drafts having been discussed by the Board meeting of 25 May 2022.

Certified by

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Claire Russell

Company Secretary

Dated: 13 July 2022

## Risk and Compliance Statement

As the Board of Anglian Water Services, we confirm the following:

- We have sufficient understanding of our obligations as set out in the Water Industry Act and our licence ('our Obligations').
- We are satisfied that we have sufficient processes and internal systems of control to meet our Obligations.
- Subject to the exceptions listed below, we believe we are meeting all our material obligations.
- We have taken adequate steps to understand the range of expectations of our diverse customer base. We have sought to provide a service offering that best meets those expectations, taking into account the requirements of other stakeholders, the sustainability of the business and the level of water bills that customers are willing and able to pay.
- We have appropriate systems and processes in place to allow us to identify, manage and mitigate our material risks.

Furthermore, we confirm the following:

- We have sufficient financial and management resources to enable us to carry out our regulated activities and have published in our APR (as part of our ring-fencing certificate) the certificate to this effect required by Condition P.30 of our Instrument of Appointment.
- The Company has available to it sufficient rights and assets to enable a special administrator to manage the affairs, business and property of the Company in the event that a special administration order were made, as required by Condition P.14 of our Instrument of Appointment.
- All trade between the Company and associate companies in the year has been at arm's length, as required by Condition P.19 of our Instrument of Appointment.
- With our Annual Integrated Report for the year we have published a statement linking Directors' pay to standards of performance, as required under section 35A of the Water Industry Act 1991.
- We have maintained for the whole year an issuer credit rating for Anglian Water Services Financing Group of investment grade (Baa1) in accordance with Condition P.26 of our Instrument of Appointment.

As set out in the business viability statement on pages 22 to 27 of this Annual Performance Report, the Directors have a reasonable expectation that the Company will be able to continue in operation and meet its liabilities as they fall due over the period set out in that statement.

### Exceptions

The section below identifies obligations set out in the Water Industry Act, our Instrument of Appointment and the Regulatory Accounting Guidelines which – with Ofwat's knowledge – we are not complying with.

- The Water Industry Act places an obligation on wastewater companies to maintain maps of their sewers. In common with all other wastewater companies in England and Wales, not all of our sewers are so mapped because the cost of doing so is generally agreed to be uneconomic.
- Condition J of our Instrument of Appointment creates certain obligations regarding the setting, monitoring and reporting of service targets. Because of changes to the regulatory approach we are no longer required to fulfil these obligations.

Certified by

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Claire Russell

Company Secretary

Dated: 13 July 2022

## Board statement on company direction and performance

This statement explains how the Board of Anglian Water Services Ltd (the Company) sets the aspirations of the Company, to meet the significant challenges facing the business and the region it serves, and its performance against targets in pursuit of these ambitions.

It explains how customers' and stakeholders' views are an integral part of setting these aspirations within our long-term strategic ambitions and Business Plan, ensuring the Company delivers for everyone it serves.

### Anglian Water's aspirations

Our ultimate goal is to fulfil our Purpose: to bring social and environmental prosperity to the region we serve through our commitment to Love Every Drop. In doing so, we must ensure that we keep our services affordable and support our more vulnerable customers.

To that end, the Board's aim is to ensure the effective delivery of the company's Love Every Drop strategy, rooted in finding solutions to the challenges our region faces whilst providing safe, clean drinking water, protecting our environment and delivering world-class customer service. The strategy has forged an efficient, sustainable, responsible business that has delivered frontier performance on bills, leakage, carbon reduction and demand management.

In 2017 we updated our 25-year Strategic Direction Statement (SDS), first published in 2007. The process was informed by in-depth discussions with more than 1,300 household customers and nearly 500 non-household customers. Our online community gave us an 'advisory board' made up of engaged customers with whom we could talk in depth about their needs and our plans.

Our revised SDS set out four long-term ambitions for us and our region:

- Make the East of England resilient to the risks of drought and flooding;
- Enable sustainable economic and housing growth;
- Be a carbon neutral business by 2050; and
- Work with others to achieve significant improvement in ecological quality across our catchments.

Since revising the SDS, we have led the industry in setting a target to achieve net zero carbon emissions by 2030, and beaten our own ambitious carbon targets for 2022. In recognition of the increasing pace of climate change, and our responsibility as a heavy user of energy, in 2019 we reset our carbon ambition to the following: 'By 2030, be a net zero carbon business and reduce the carbon in building and maintaining our assets by 70%'.

Revising our SDS is just one aspect of an ongoing programme of engagement with all stakeholders across the region. This programme informs not only our long-term ambitions, but also our 10 Outcomes and the Performance Commitments (with linked Outcome Delivery Incentives) that we use to measure our progress towards them.





In 2019 we published our final Water Resources Management Plan (WRMP), having undertaken public consultation in 2018. This plan sets out how we will manage the water supplies in our region to meet current and future needs over a minimum of 25 years. We will focus on demand for water in the first instance, to reduce the amount used, which is our customers' preferred priority, and we will also invest in the supply side, via ambitious measures including the creation of hundreds of kilometres of interconnecting pipelines across our region, to maintain the amount of water available.

We also published our latest Drought Plan, which sets out how we will safeguard public water supplies during extended periods of low rainfall, and what we will do to minimise any potential environmental impacts that may arise as a result. Our Drought Plan 2022 was published in April 2022 following public consultation in the summer of 2021.

Alongside plans for water resources management, we are focusing attention on long term planning for water recycling. In 2018, we published our first Water Recycling Long-Term Plan (WRLTP). Endorsed by a wide range of stakeholders, it was the industry's first long-term plan to manage the supply of water recycling services and is equivalent to the Water Resources Management Plan.

The WRLTP is due to be replaced by our first Drainage and Wastewater Management Plan (DWMP) – the new industry-standard way for organisations to work together to improve drainage and environmental water quality. Co-developed with a wide range of regional stakeholders, our draft DWMP was issued for consultation on 30 June 2022 and will be available for stakeholder feedback until 16 September 2022. It constitutes our next phase



in long-term planning, covering the period 2025-2050, and supports our vision for a fully integrated water and water recycling system that provides reliable, affordable and sustainable levels of service for customers and business, while fully protecting the environment. Creating the plan together with all stakeholders who have an interest in drainage and water recycling ensures that we take a joined-up approach and consider all risks from growth, climate change and customer behaviours.

In March 2020 we also became the first company to publish a Climate Change Adaptation Report in response to the third round of reporting under the Climate Change Act (2008), doing so in draft form to enable a wide range of stakeholders to review and help to shape our plans. The final report, which was submitted to the UK Government in December 2020, describes our climate-related risks and the steps we are taking to deliver sustainable adaptation action through innovation, collaboration, investment and education.

We are also working with the multi-sector Water Resources East network which we set up in 2014, and which now operates as an independent company, to create a blueprint for the future of the Fens – an area rich in agriculture and biodiversity yet challenged with significant social deprivation and at risk from a changing climate. We believe one coherent plan can concurrently address these challenges and have set up a cross-sector strategic Taskforce to deliver an integrated approach to climate change adaptation. *Future Fens: Integrated Adaptation* was featured at COP26 as an exemplar of integrated water management.

Our Business Plan for 2020-25 was built on customer engagement that indicates a clear desire for us to take action to increase resilience to the challenges of climate change and population growth now, rather than to wait. It proposed a record £6.5 billion investment programme to drive resilience, protect and enhance the environment and support sustainable growth, while maintaining affordability. Throughout the PR19 process, including our reference to the Competition and Markets Authority, we strove to ensure our customers' views were represented and reflected in final determinations.

This year, across the water sector, environmental factors have come to the fore more than ever. The huge lifestyle shift triggered by Covid-19 lockdowns has led to the British public feeling much more connected to their natural environment, shining a spotlight on river water quality. Rightly, the public and political discourse, along with the provisions of the Environment Act, have highlighted a need for stakeholders to come together to invest in these areas to restore and enhance the ecological quality of our watercourses. We are totally aligned with this goal – indeed, as mentioned above, we first set our strategic ambition to improve ecological quality in collaboration with others in 2007.

The current poor health of our rivers is a complex issue, and one that is not solely in the gift of water companies to rectify. Other significant drivers impact water quality, including agriculture and highway run-off, calling for a joined-up approach. Because of this, we are actively working and collaborating with different sectors to create effective and workable plans for rivers, as set out in Water UK's 21st Century Rivers report.

In March 2022 we signed up with our fellow water and water recycling company Severn Trent Water to a new set of commitments under the banner of 'Get River Positive'. This means we will strive to do no harm to UK rivers and do everything we can to ensure they can thrive. Our five Get River Positive commitments are as follows:

1. Ensure storm overflows and sewage treatment works do not harm rivers.
2. Create more opportunities for everyone to enjoy our region's rivers.
3. Support others to improve and care for rivers.
4. Enhance our rivers and create new habitats so wildlife can thrive.
5. Be open and transparent about our performance and our plans.

In common with all our fellow water companies, we have also responded to regulatory concerns over compliance with environmental permits at water recycling centres, providing extensive disclosures in response to the joint investigations launched by Ofwat and the Environment Agency. We await the outcome of the investigations, but are confident that our water recycling operations are not causing harm to the environment.

## Supporting customers in vulnerable circumstances

We are committed to eradicating water poverty in our region, as we set out through our shared Public Interest Commitment made with our fellow water companies in 2019. Our support is needed now more than ever, as customers face the current cost of living crisis. As we enter 2022/23, we are anticipating a rise in the number of customers in financial difficulty, and we have set aside an unprecedented £65 million of support for the next financial year as part of an overall package of £232 million from 2020 to 2025.

We are also committed to ensuring that all customers who need extra help are aware of, and are offered the opportunity to sign up to, our Priority Services Register (PSR). We have exceeded our year-on-year registration target for the second year in a row and now have the highest percentage of customers registered for the PSR in the water industry.

In order to ensure we are providing the best possible tailored support to our customers, we work with more than 150 organisations, including charities, local authorities, public health bodies and other utility companies.

## Linking remuneration with outcomes for customers, and environmental, social and governance measures

We are clear that reward must be aligned to performance, particularly for the senior leaders of the Company. Our agreed approach is to reward our employees (including our Executive Directors) when the company performs well, meeting or exceeding the targets set by our regulators or in some cases tougher internal targets. When the targets are missed, our bonus schemes do not pay out.

Our Leaders' Bonus Scheme, in common with the Deferred Bonus Plan (which applies to the Executive Directors and the 50 most senior leaders), is made up of two parts: personal objectives and what is known internally as the 'Performance Contract'. The Performance Contract is designed to deliver outcomes for customers – customer efficiency and customer delivery. As a leader becomes more senior, the performance contract represents a greater proportion of their bonus, reflecting their ability to influence the service that the organisation provides to our customers.

Our Performance Contract (70 per cent of Executives' maximum bonus) covers a range of the issues that customers have told us are most important.

Although a significant proportion of executive variable remuneration is already aligned to our purpose, with 45 per cent of executive bonus outcomes linked to ESG measures, during the reporting year, the Remuneration Committee has chosen to go further. As part of its annual review, the Committee looked externally to inform its thinking and has decided to introduce four further environmental and social measures for 2022/23 which it believes will help us achieve our Purpose. These are as follows:

- Capital carbon: the carbon in building and maintaining our assets;
- Operational carbon: the carbon used in the day-to-day running of our business, including energy and transport;
- Helping customers who are struggling to pay: the number of customers who receive support through our financial support schemes; and
- Biodiversity net gain: our commitment to leave the natural environment in a measurably better state than before our intervention.

Whilst remuneration remains closely linked to performance for customers, the introduction of these new measures demonstrates a strong alignment between employees' reward and the delivery of our purpose. The changes this year are only a first step, and we plan to further enhance the weighting of bonuses aligned to our purpose. A further review of ESG measures will be informed by the recent development of the BSI PAS 808 for purpose-driven organisations, which we have led.

See 'Company performance: Delivering performance for all those we serve', below, for a summary of remuneration outcomes for 2021/22.

### **Embedding customer and stakeholder engagement**

Our Business Plan for 2020-2025 was written following the most extensive engagement we have ever had with customers – no fewer than half a million customer interactions, ten times more than for our previous business plan. This engagement shaped our plan like never before, eschewing traditional consultations for on-going dialogue, ensuring rapid response to changing customer expectations.

However, our engagement with customers and communities goes far beyond our Business Plan. It is fundamental to the development of our strategies and plans, as well as shaping the day-to-day delivery of our service.

We regard independent scrutiny by our customers as an important test of our business planning and delivery. We first set up our Customer Engagement Forum in 2011, to challenge us on how we engage with customers and monitor performance in relation to our commitments to them. This year we have appointed a new independent chair, Craig Bennett, and refreshed the membership of the group as part of its role to scrutinise the quality of customer engagement activities and how it is shaping the company's future plans. The members of the group, which is now known as the Independent Challenge Group (ICG), come from a wide range of backgrounds to represent the interests of household and business customers, communities, the environment and the economy.

We also have a Customer Board, running alongside the ICG, which comprises a representative selection of members from the online community to provide further guidance and directly feed in customers' views.

We recognise the importance of engaging with a wide variety of stakeholders to inform our strategy and support the delivery of our purpose. Our Annual Integrated Report sets out seven key stakeholder groups:

- Our environment and the planet;
- Our customers and communities;
- Our people and partners;
- Regulators;
- Shareholders;
- Investors and ratings agencies; and
- Local and national government.

In the report we highlight how we engage with them and the outcome of that engagement.

### **Company performance: Delivering performance for all those we serve**

We have delivered a decade of first-class performance, most notably in leakage reduction and customer service. We publish details of our performance against our outcomes on our website.

Most recently, we were highlighted as a sector-leading company in the [2020-2021 Ofwat Service and Delivery Report](#). Our approach – to innovate, learn and share – has seen us pushing the frontier for the whole industry, while enabling the continued growth and prosperity of the region.

We have already:

- Reduced leakage by a third since privatisation to reach industry-leading levels, with the water lost per kilometre of pipe at half the national average;

- Kept the amount of water we supply every day at 1989 levels, despite supplying an extra 600,000 properties – the equivalent of saving 170 litres per property;
- Cut our capital carbon emissions by 63.1 per cent on 2010 levels and reduced operational carbon emissions by more than a third against a 2014/15 baseline (and by a further 9.4 per cent on a 2019/20 baseline set for AMP7). This has driven innovation and efficiencies that feed into lower bills.

In 2021/22, however, while the majority of performance commitments remain on target, our performance has dipped in some key areas. In important metrics, including pollutions, flooding, supply interruptions and burst mains, we have not reached our targets, incurring penalties in these areas.

It has been a year of very real challenges. Some of these were universal, including supply chain issues and the ongoing pandemic, but the most notable for Anglian Water were the knock-on impacts of prolonged flooding in the East of England over the first three months of 2021. Prioritising our customers' vital services and redeploying resources during that period held back some elements of operational performance in the year that followed. We have learned valuable lessons and taken decisive steps to increase our resilience, develop regional partnerships and reorganise our business structures. These include:

- **A new Quality and Environment Directorate:** We have created a new Quality and Environment directorate led by Dr Robin Price, with a remit to provide leadership and vision on all aspects of quality and the environment. The new directorate's focus is on source-to-sea water quality management, effective delivery of strategy and plans for 2020-2025, and the development of a long-term vision based on the principles of integration, collaboration and innovation.
- **Water Recycling Directorate:** We have remodelled our Water Recycling Directorate and appointed a new Director of Water Recycling, Emily Timmins, who joins us from Severn Trent, with a long and strong track record of success
- **Targeted investment on CSOs:** We continue to invest in our infrastructure and will increase the rate of installation of Event Duration Monitors (EDMs) to achieve 100 per cent coverage of CSOs by December 2023. This will further improve our understanding of how our networks are performing and create a sound platform on which to plan investment. This investment builds on the recent hydraulic modelling risk assessment for all CSOs and the installation of 794 EDMs to date.
- **Action on pollution:** Our continuous programme of investment and strategic delivery has seen the number of category 1-3 pollutions in our region reduced by more than half in 10 years. Our long-term ambition is to reach zero pollutions from our assets. However, this remains an area of challenge for us, and our performance this year has not reached the level we or our customers want to see. In response we have launched an intensive action plan based on military command models and refocused our Pollution Incident Reduction Plan. In the first quarter of 2022, pollutions were 54 per cent lower than the corresponding period of 2021, a clear reflection of the effect the exceptionally wet winter of 2021 had on our results. The calendar year measure means performance in during 2021 was significantly impacted by wet weather events, with the number of pollutions recorded in the first quarter of 2021 112 per cent higher than our five-year historical average. As flooding and rain abated, we saw big improvements, with pollutions dropping to 15% below our five-year average for the remaining three quarters of 2021. Serious pollutions remain a challenge and are a key focus for our Get River Positive initiative, launched in collaboration with Severn Trent earlier this year.

We are already seeing the positive impacts of the interventions we have made, as set out above.

The dip in our performance has been directly reflected in senior leaders' remuneration. As set out above, we put performance for customers at the heart of our bonus structure for Executive Directors and senior leaders at Anglian Water. Unusually for a bonus scheme, underperformance in one area of the Leaders' Bonus scheme and Deferred Bonus Plan can negate overperformance in another area. Despite strong performance in relation to leakage and the Water Industry National Environment Plan (WINEP) (see below), some of the

customer-focused targets included in our 2021/22 Performance Contract (such as those in relation to pollution and flooding) have not been achieved. As a result of this underperformance, no payment will be made for 2021/22 in relation to the Customer Delivery element of our Performance Contract. All senior leaders who participate in the Deferred Bonus Plan will therefore lose 45 per cent of their potential bonuses.

However, despite the difficult backdrop to the year, we have seen success in several key areas – including our best-ever performance on our world-class leakage reduction programme, and strong progress on our £800 million WINEP, exceeding targets and delivering a cumulative 1,184 schemes since 2020. In our biggest ever single year of capital investment, we have ploughed £577.7 million into programmes that will increase our resilience to drought and flood, and support growth, while safeguarding and enhancing the environment. The schemes we are delivering, including our smart metering programme (the most ambitious in the industry), the creation of a cutting-edge smart water network and a multitude of abstraction reduction programmes, have enabled us to make industry-leading reductions in the amount of water we take from the environment, protecting precious chalk streams and rivers.

As part of that investment we are well underway with delivery of our ground-breaking strategic pipeline – our biggest ever infrastructure programme – to move water around our region to where it is needed most.

Across the AMP to date we remain in a net positive position in relation to our performance commitments, and we anticipate returning to net reward in 2022/23. Further, in all the programmes we are delivering, we are maintaining a tight focus on efficiency. The step changes we are making put us on a strong glidepath for AMP8 .

Performance highlights in 2021/22 also included the following:

- We met the demands for growth in our region, connecting another 25,292 new properties to our water network and 28,818 to our water recycling network;
- We achieved our best-ever performance on renewable energy, with 153.7 GWh, including a monthly output record of 10.93GW;
- We disbursed the second and final tranche of our £1 million Positive Difference Fund, which has supported more than 100,000 beneficiaries in over 160 community groups;
- We secured a total of £17.3 million of funding from the Ofwat Innovation Fund, enabling us to push forward with innovative schemes that will accelerate sustainable outcomes and improve service to customers across the water sector;
- We sign-posted customers to potential unclaimed benefits worth more than £1.75 million and provided advice and support to 324,750 customers with affordability challenges, surpassing our performance commitment;
- In May 2021 we launched our enhanced MyAccount. Customers with smart meters can now monitor their water usage, compare to other similar households and stay more in control of their bills. We have also improved the 'Report an Issue' function on our website. Reporting an issue online helps customers notify of us about a range of issues and saves them time calling our customer care line. In turn, we can quickly respond to issues as they occur. More customers than ever have used our online services this year to update their accounts, report service issues or book appointments, up 24.7 per cent on 2020/21 to over 70 per cent of contacts. Despite a year of challenges, our customers continue to rate our service highly, with 97 per cent of those asked rating the service received as satisfactory or better (as measured by our internal satisfaction survey).

We were pleased to have our commitment to our environmental and social purpose endorsed by the awards of Best Use of Purpose as a Business Driver at the Strategic Comms Awards 2021, and to be named Utility of the Year by Utility Week for 2021, winning the title for a second time.

We also made progress on the key factors which will drive future performance: building a more diverse workforce; keeping our people healthy, happy and safe; and securing a strong financial base. Towards those ends we have:

- Delivered half-day health, safety and wellbeing sessions for more than 3,000 colleagues;
- Introduced mandatory inclusion e-learning for all colleagues;
- Maintained our RoSPA Gold Award and ISO45001 accreditation for safety , and been named Workplace Health and Wellbeing winner 2021 by the Royal Society for Public Health;
- Recorded a 25 point increase in our annual all-employee survey in the number of colleagues who say they are proud to play a part in creating environmental and social prosperity in our region. We also saw an 11-point increase in the number of colleagues who say we are an inclusive place to work, regardless of age, gender, race, disability or sexual orientation;
- Provided a wide range of services to support employees through the challenges of the Covid-19 pandemic
- Completed the delivery of a new financial structure which has enabled a reduction in gearing in the Company to 65 per cent.

Strengthening these foundations reinforces the Board's confidence in the ability of the Company to meet the challenges of the future and to continue delivering for all it serves.

This Board statement was approved by the Board of Directors on 13 July 2022 and signed on its behalf by Claire Russell, Company Secretary.

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Claire Russell

Company Secretary

Dated: 13 July 2022



## Long Term Viability Statement

The Directors are responsible for ensuring the resilience or viability of the Group's water and water recycling services to meet the needs of its customers in the long term. This means the Group must be able to avoid, manage and recover from disruptions to its operations and finances.

The Directors' review of the longer-term prospects and viability of the Group is an extension of our business planning process, which includes financial forecasting, a robust risk management assessment, regular budget reviews and scenario planning. This activity is strengthened by a culture throughout the Group of review and challenge. Our vision and business strategy aim to make sure that our operations are resilient and our finances are sustainable and robust.

As part of Anglian Water's approach to defining risk appetite, each year the Directors review our specific risk tolerance levels and consider whether our decision-making behaviours over the past year have been consistent with these risk levels. The Directors confirmed that the Group's behaviours over the past year had been in line with our risk appetite.

### Look forward period

As one of the 10 regional water and sewerage services companies operating in the UK, Anglian Water's prices are set by the industry regulator Ofwat for five-year Asset Management Plan (AMP) periods, which support the Group's underlying costs. This provides the basis for future tariffs, revenues, costs and cash flows over the current AMP (April 2020 to March 2025).

### Assessment of prospects and viability

The Directors have assessed Anglian Water's financial prospects over the next 10 years from April 2022 to March 2032. A 10-year period has been chosen to ensure that our business plan for the current AMP does not impact on the longer-term viability of the Group:

- The first three years takes us to the end of the current AMP, for which there is reasonable certainty and clarity, with a stretching five-year plan to deliver in line with the CMA Final Determination for AMP7.
- The next seven years of the period are outside the current AMP and therefore subject to the final outcome of the following five-year price reviews, PR24 and PR29, for which uncertainty exists. Our assumptions for AMP8 align to the AMP8 forecasts submitted in our PR19 Business Plan submission updated to account for the CMA Redetermination.
- The Board considered whether there are specific, foreseeable risk events relating to the principal risks that are likely to materialise within a 10-year period, and which might be substantial enough to affect the Group's viability and therefore should be taken into account when setting the assessment period. These events were modelled appropriately within our downside scenarios.
- The Board has considered the impact of the wider activities of other Group companies and transactions and of the overall Group structure.
- The Board considers the maturity profiles of debt and the availability of new finance over 10 years as part of its review of financial modelling and forecasting, as well as considering the credit ratings of the debt.
- Finally, we take note of the Water Industry Act, which requires Ofwat to ensure that water companies can (in particular through securing reasonable returns on their capital) finance the proper carrying out of their statutory duties.

### Principal risks

We have set out the details of the principal risks facing the Group in the full annual integrated report, described in relation to our ability to deliver our 10-year outcomes. We identify our principal risks through a robust assessment that includes a continuous cycle of bottom-up reporting and review, and top-down feedback and horizon scanning. Through this assessment, priorities are elevated appropriately and transparently.

The Directors regularly review business plans that show projected cash flows for the current AMP period, and long-term cash flow modelling projections which extend into AMP8 and beyond. This includes reviewing the expected outcome relating to the principal risks with this impact included in our business plans.

### Stress testing the business plan

In reviewing its financial viability, Anglian Water considers the stringent covenant tests required under its securitised structure to provide comfort to our bondholders that our business is viable to the end of the current AMP period and beyond, and to ensure the availability of debt to finance Anglian Water's investment programme. At each regulatory price review and throughout the AMP, the Board satisfies itself that the agreed five-year business plans ensure adequate covenant headroom throughout the AMP period and beyond. This includes extensive downside scenario testing at both Anglian Water and Group level from severe, plausible and reasonable scenarios chosen because they pose the greatest risk to the business. The following scenarios have been used individually and in combination to model the impact on the overall performance of the business, the ability of the business to service its debt and the impact on its credit rating:

Principal risk	Scenario	Impact modelled	Potential mitigations required
People Technology Financial Asset infrastructure Business resilience Commercial & third party Strategic execution	Material totex underperformance against the Final Determination allowance	Overspend of 10 per cent across an AMP	No mitigations required
Customer proposition Environment People Reputation Asset infrastructure Business resilience Strategic execution	Material Outcome Delivery Incentive (ODI) penalties	Up to £100 million applied in a single year	No mitigations required
Environment Water supply and quality Health and safety People Reputation Legal Regulatory	Regulatory fines and legal penalties	Up to 3 per cent of turnover applied in a single year	No mitigations required
Financial	Unfunded pension liabilities	Up to £15 million applied per annum	No mitigations required
Customer proposition Financial Business resilience	Risks associated with the disruption caused by cost of living crisis, potential reductions in revenue collection	Up to 4 per cent decrease in cash collection	No mitigations required
Financial Reputation Strategic execution	The potential impact of credit rating agencies downgrading the debt for any companies in the Group	2 per cent increase in cost of new debt	No mitigations required
Financial Reputation Strategic execution	Cost of debt increases	2 per cent above base level assumptions across an AMP	No mitigations required
Customer proposition Financial Asset infrastructure Commercial & third party	Significant inflation fluctuations	1 per cent above and below base level assumptions for each AMP	No mitigations required
Customer proposition Environment People Technology Financial	Combined scenario based on totex underperformance for a	Overspend of 10% across an AMP,	No mitigations required



Reputation Asset infrastructure Business resilience Commercial & third party Strategic execution	whole AMP, along with a significant ODI penalty and a revenue penalty	combined with an ODI penalty of 1.5% of RORE in year 4 and 5 plus a financial penalty of 1% of revenue in year 4	
Customer proposition Environment People Technology Financial Reputation Asset infrastructure Business resilience Commercial & third party Strategic execution	Combined scenario based on low inflation, an opex cost shock plus a significant ODI penalty	Inflation 1 per cent below base for the AMP combined with 2.5% opex cost shock in AMP7 and a £50 million ODI penalty in year 4	No mitigations required

As part of our stress tests for the downside scenarios we have considered the potential impacts of cost shocks resulting from climate change. Such cost shocks include the 'Beast from the East' extreme cold weather event, followed by a rapid thaw, experienced in early 2018, and the extreme wet weather events experienced in our region in the summer of 2019 and winter of 2020/21. The cost impacts of these events (including longer term recovery impacts such as leakage reduction), were in the order of £7 million for 'Beast from the East' and £3 million for each extreme wet weather event. Our modelled downside scenarios include cost shocks equal to experiencing several of these events in continuous years across the AMP; we are therefore confident that we can withstand the financial impacts of extreme weather events, predicted to increase as a result of climate change.

In April 2019 Ofwat issued Information Notice IN 19/07 setting out its expectations for companies in issuing long-term viability statements. In our Annual Performance Report (available on the Anglian Water Services website) we provide additional detail on the processes and assumptions underpinning our long-term viability statement and demonstrate our compliance with IN 19/07.

### Mitigating actions

For each sensitivity and combined scenario, we identify, where required, the appropriate mitigations against the potential risks. In the event that the situations used for stress testing were to result in an unacceptable level of deterioration in the Group's financial metrics, management's principal actions would include further reducing the level of shareholder distributions, potential shareholder equity injections, reviewing the financing structure and identifying further opportunities to reduce the Group's cost base or reduce financing costs.

Evidence of the shareholders' support for equity injections is provided by the equity injections made in October 2018 of £22.0 million, April 2021 of £110.0 million and July 2021 of £1,055.0 million.

As a further mitigation we have a significant portfolio of insurance cover in place to provide protection against many catastrophic scenarios such as dam failure, pluvial and fluvial flood, terrorism, and public and employer's liability. There would still be a short-term liquidity impact from such events due to the time it would take between incurring the expenditure and recovering this through the insurance claim; however, it is an important consideration in terms of medium-term liquidity. The Board formally reviews the output of the stress testing twice a year.

### Benefits of the securitised structure

The highly covenanted nature of our financing arrangements (often described as a whole business securitisation) enhances our financial resilience by imposing a rigorous governance framework. This requires continuous monitoring and reporting of our financial and operating performance by senior management, through a well-established business process, to ensure compliance with our financing arrangements, and provides an additional layer of control

over how we transact with our stakeholders, including suppliers, business partners, customers, shareholders and lenders, compared to the regulatory frameworks by which we are governed.

### **Assurance**

Robust internal assurance is provided by the Board reviewing and challenging the stress test scenarios selected and the risk mitigation strategies. The Directors also obtain annual independent third-party assurance on the integrity of the long-term cash flow model which underpins the financial projections. In addition, our external auditor, Deloitte, reviews this viability statement and the outputs of our stress testing as part of its normal audit procedures. It considers whether these are consistent with the Directors' conclusion with respect to business viability, and if the processes undertaken are sufficient to support the statements made.

### **Directors' statement**

In making this statement, the Directors have assumed that funding for capital expenditure in the form of capital markets or bank debt will be available in all reasonable market conditions. They have also considered the impact of the Group structure, intra-Group transactions and any other Group activities on the viability of the regulated business.

Ofwat published its PR19 Final Determination in December 2019 which formed the basis for setting customer charges in 2021/22. Funding for the remaining years of AMP7 will be set by the CMA Redetermination, which rebalanced the split between operational expenditure (opex) and capital expenditure (capex) and recognised that long-term investment for resilience requires long-term investors, who deserve a fair return on their commitment. Whilst the delivery of our 2020-25 Business Plan remains challenging, the Redetermination will enable us to deliver the resilience to climate change and population growth that our region needs and continue to operate within our covenant requirements.

Anglian Water Services is an efficient company with a history of outperformance. The Directors can be satisfied that the business has a reasonable expectation of being able to continue in operation and meet its liabilities as they fall due at least to March 2032, and is financially resilient in the face of severe but plausible downside shocks.

This is based on the reasonable certainty of its future revenue stream, the strength of the balance sheet (in particular the substantial cash balance and strong net assets), the availability of undrawn debt facilities in the unlikely event that debt markets were temporarily restricted, and by reviewing the business plans and strategic models, combined with the robust risk management process and mitigations described above.

### **Supplementary information to the above viability statement in support of meeting the requirements of Ofwat Information Notice IN 19/07 "Expectations for companies in issuing long term viability statements"**

#### **Plans reflect an accurate up to date view and take account of anticipated changes in financing and gearing**

Our future operational and expenditure plans which have been stress tested in support of our long term viability statement (LTVS), fully reflect the PR19 CMA redetermination and our assumptions for AMP8 are aligned to those submitted with our PR19 Business Plan, updated to account for the CMA Redetermination. Our base plan also reflects our revised Group financing structure which was completed in July 2021 and enabled a reduction in gearing in the company. This enhanced and protected our credit ratings. The regulatory regime incentivises good operational performance and customer service through the use of financial and reputational rewards. We are a leading company, which has consistently delivered totex outperformance, achieved net ODI rewards across both Water and Water Recycling price controls and was the leading company in the SIM customer service measure for 2018/19 (the final year of measurement). As a leading company we would therefore

expect to continue to deliver some net outperformance against price review determinations. Our base AMP7 position to which we apply stresses and shocks, assumes no AMP7 totex outperformance and limited in AMP ODI rewards; in itself we view this as a prudent position.

### **Justification for scenarios selected**

As part of our stress testing we have modelled appropriate scenarios and sensitivities which reflect the risks that the business faces. We have listed the scenarios tested (both individual and in combination) in our viability statement, including where appropriate, the severity of the stress testing. Our stresses and cost shocks that we have applied and tested are substantially more extreme than any actual risk that has crystallised in AWS since privatisation, some 30 years ago. Macroeconomic impacts have been set with consideration of recent economic trends. We have also considered the size of historic cost shocks experienced by the wider industry since privatisation.

### **Consideration of full range of categories of risk and link to wider risk assessment reported in statutory accounts**

Our stress testing aligns to the principal risks identified in our [Annual Integrated Report](#). These risks consider individual company risks, as well as common external risks that affect the sector as a whole, including severe, but plausible macroeconomic impacts. Available mitigations against downside shocks, where necessary are detailed in our long term viability statement.

Our approach to risk management is detailed in our [Annual Integrated Report](#) (AIR). In our AIR we describe in detail our processes for identifying, assessing and mitigating risks. We have considered the full range of categories of risk which could impact the company; these include financial risks, operational risks and regulatory risks.

### **Methodology used and justification**

We maintain a comprehensive long term cashflow model against which we test the impact of downside scenarios. This model is subject to annual independent third party assurance to ensure its integrity, which underpins the financial projections and outputs. As well as future cashflows, this model includes metrics testing our forecast compliance against our lending covenants and key Rating Agency metrics (for example PMICR and FFO/net debt). The robustness of this cashflow model, together with the internal and external assurance applied to the outputs of the stress testing, provide reassurance to the Board, that our approach to viability testing is appropriate.

### **Workforce considerations**

As part of our risk management framework we actively consider the need to continue to attract and retain a workforce with the talent and skills to ensure our long term success. This is enhanced by our leading status in both operational and customer service measures and demonstrated in the recognition in 2019 by Glassdoor as the best place to work in the UK.

### **Pension risk**

With regard to pension risk, our defined benefit pension schemes are closed to future accrual of benefits, and therefore the only remaining risk relates to pension deficit recovery payments. As part of our stress testing we have included the impact of downside risks which would trigger additional pension deficit payments and have modelled these impacts as part of our stress testing.

### **Revenue variation risk**

Our stress testing included plausible, but severe reductions in revenue, through testing of large ODI revenue penalties and increases in bad debt. We have also included stress testing of severe reductions in revenue cash collection as a result of the economic impacts of the "cost of living crisis".

### **Credit rating risk assessment and mitigations**

Our downside stress tests include the impact on key Ratings Agencies metrics and where metrics come under pressure, appropriate mitigations have been identified. These mitigations have been quantified and tested for ability to implement in the necessary timeframe and are sufficient to avoid the risk of downgrade to sub-investment grade in all scenarios.

Our LTVS considers the need to raise further funding for investment and we have assessed the impact on key Ratings Agencies metrics in all of our downside scenarios. In addition our shareholders have demonstrated their long term commitment and support of the business as evidenced by their past actions which have included injecting additional capital into the business, reducing gearing through dividend reduction and re-investing operational outperformance and efficiencies for the benefit of customers.

### **Company Monitoring Framework assessment assurance and actions**

Ofwat have stated that they will not publish further Company Monitoring Framework assessments. In the absence of this we did receive feedback from Ofwat on our 2021 APR. We have considered that feedback relating to our long term viability statement. Three specific points of feedback were made:

The first was that the "The company's statement did not clearly link the scenarios modelled to the principal risks identified". We have included in the table above, the principal risks relating to each modelled scenario.

The second was "The specific outcomes of the stress testing under different scenarios should be clearly set out and explained". In all of the downside stress tests in the current year, the outcome was that we could maintain our threshold covenant and rating agency metrics.

The third was "The overall mitigation for a range of scenarios is provided but it was too high level. Greater detail on the potential mitigation actions available under different scenarios should be provided". All of the downside stress tests performed this year can be managed by decreasing planned dividends and / or increasing gearing while still remaining within our covenanted thresholds.

### **Impact on financing plans**

We have tested the impact of a credit rating downgrade through increasing the cost of raising new debt, and our mitigations are sufficient to maintain our business viability. Our Board policy of maintaining at least 18 months of liquidity, together with a policy of refinancing maturing debt at least three months in advance of maturity, ensures significant protection against downside shocks and credit market availability. We have significant committed liquidity facilities of just under £1 billion and plan to maintain this throughout AMP7. This protects us from any short term restrictions in the availability of credit markets and provides substantial liquidity to meet severe but plausible short term cash flow impacts.

### **Reflecting impact of gearing benefit sharing mechanism**

As the CMA Redetermination did not include a gearing benefit sharing mechanism, we have not therefore included any impacts of this in our scenario testing. We currently have no regulatory investigations being undertaken, therefore we have not had to take these into account for our viability statement.

## Statement of Directors' Responsibilities

Further to the requirements of company law, the Directors are required to prepare accounting statements which comply with the requirements of Condition F of the Instrument of Appointment of the Company as a water and sewerage undertaker under the Water Industry Act 1991 and Regulatory Accounting Guidelines issued by Ofwat.

The Directors of the company hereby confirm that the company has kept proper accounting records, which comply with Condition F.

The Instrument of Appointment additionally requires the Directors to:

- a. Confirm that, in their opinion, the Company has sufficient financial resources and facilities, management resources and methods of planning and internal control for the next 12 months.

The Directors have included within this report a ring-fencing certificate which confirms the adequacy of resources and facilities as set out above and in accordance with clause P.30 of the Instrument of Appointment.

- b. Confirm that, in their opinion, the Company has sufficient rights and assets which would enable a special administrator to manage the affairs, business and property of the Company.

The Directors confirm this requirement has been met throughout the year.

- c. Confirm that, in their opinion, all contracts the Company has with any associate company include the necessary provisions and requirements concerning the standard of service to be supplied to ensure compliance with the Company's obligations as a water and sewerage undertaker.

The Directors have included within this report a ring-fencing certificate which confirms the adequacy of contracts as set out above and in accordance with section P.30 of the Instrument of Appointment.

- d. Report to Ofwat changes in the Company's activities which may be material in relation to the Company's ability to finance its regulated activities.

The Directors hereby confirm there were no such changes in the year ended 31 March 2022.

- e. Undertake transactions entered into by the appointed business, with or for the benefit of associated companies or other businesses or activities of the appointed business, at arm's length.

This has been confirmed within disclosure 'Transactions between the appointee and associated companies'.

These responsibilities are additional to those already set out in the statutory financial statements:

In the case of each of the persons who are Directors at the time when the Report is approved under Section 418 of the Companies Act 2006 the following applies:

- So far as the Director is aware, there is no relevant audit information of which the Company's auditors are unaware; and
- He/she has taken all the steps that he/she ought to have taken as a Director in order to make himself/herself aware of any relevant audit information and to establish that the Company's auditors are aware of that information.

## Ring-Fencing Certificate

### Introduction

Condition P of Anglian Water's licence requires the Company ('the Appointee') to ensure that it maintains sufficient financial and management resources to enable it to carry out its functions in a sustainable manner, and protects the Appointee from the activities of other group entities. The Appointee must, at all times, conduct the Appointed Business as if the Appointed Business were substantially the Appointee's sole business and a public limited company separate from any other business carried out by the Appointee. To enable it to carry out the Regulated Activities the Appointee must, at all times, act in a manner which is best calculated to ensure that it has in place adequate financial resources and facilities, management resources and systems of planning and internal control.

Condition P requires that Anglian Water submits to Ofwat a Ring-Fencing Certificate at the same time as it publishes its APR. When the Appointee submits its Ring-Fencing Certificate, it must submit a statement of the main factors which the Board of the Appointee has taken into account in giving its opinion for the Ring-Fencing Certificate. The Ring-Fencing Certificate should be accompanied by a report prepared by the Appointee's Auditors and addressed to Ofwat, stating whether they are aware of any inconsistencies between that Ring-Fencing Certificate and any information which the Auditors obtained in the course of their work as the Appointee's Auditors.

### Financial resources and facilities

In the opinion of the Directors, Anglian Water Services Limited ("the Company") will have available to it sufficient financial resources and facilities to enable it to carry out, for the next twelve months, the Regulated Activities (including the investment programme necessary to fulfil its obligations under the appointment). Additionally, the Directors have approved a business viability statement covering the ten year period to March 2032 which is included in the Annual Performance Report.

### Management resources

In the opinion of the Directors, the Company will, for the next twelve month period, have available to it management resources which are sufficient to carry out the Regulated Activities (including the investment programme necessary to fulfil the Company's obligations under the Instrument of Appointment).

### Systems of planning and internal control

In the opinion of the Directors, the Company will, for the next twelve month period, have available to it systems of planning and internal control which are sufficient to carry out the Regulated Activities.

### Rights and resources other than financial

In the opinion of the Directors, the Company will, for the next twelve month period, have available to it rights and resources other than financial resources which are sufficient to carry out the Regulated Activities.

### Contracting

In the opinion of the Directors, all contracts entered into include all necessary provisions and requirements concerning the standard of service to be supplied to the Company, to ensure that it is able to meet all its obligations as a water and sewerage undertaker.

### Material issues

The Directors have taken into consideration the remaining effects of the Covid-19 pandemic when making this statement.

The Directors have also taken into consideration the impact of the high levels of inflation evident now and forecast for the remainder of the year, the need to address public concerns about river quality and the sanctions against individuals and suppliers with links to Russia.

This Certificate was approved by the Board of Anglian Water Services Limited on 13 July 2022, a draft having been discussed by the Board meeting of 25 May 2022.

As required by the licence, our external auditor, Deloitte, has provided an accompanying report stating whether they are aware of any inconsistencies between this Certificate and any information obtained during their assurance in relation to the regulatory accounting statements and during their work as Anglian Water's Auditors.

Certified by

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Claire Russell

Company Secretary

Dated: 13 July 2022



## Relevant factors

The following main factors have been taken into account by Directors in giving this declaration:

### Financial resources and facilities

- Financial details – In considering the requirements of Condition P, the Directors took financial resources and facilities to mean the cash requirements and funding arrangements needed to run the Company as follows:
  - The financial strength of the Company, as recorded in the statutory financial statements for the year ended 31 March 2022. Cash flow projections for the forthcoming year have been prepared and subjected to sensitivity analysis using various downside scenarios. This analysis has shown that it is reasonable to believe that facilities will be sufficient for the next twelve months;
  - The Euro 10 billion global secured medium term note programme of financing implemented on 30 July 2002 by Anglian Water Services (Financing) Plc (AWSF), a subsidiary Company to, inter alia, provide future financing for the Company (including the investment programme necessary to fulfil the Company's obligations under the Instrument of Appointment);
  - Cash and deposit balances at 31 March 2022 for the Anglian Water Services Limited Group of £870.7 million. As at March 2022 Anglian Water has access to £600.0 million of undrawn facilities (March 2021: £575.0 million), to finance working capital and capital expenditure requirements. In addition, Anglian Water has access to a further £375.0 million of liquidity facilities (March 2021: £400.0 million), consisting of £254.0 million to finance debt service costs and £121.0 million to finance operating expenditure and maintenance capital expenditure in the event that the company was in an Event of Default on its debt obligations and had insufficient alternative sources of liquidity.
  - All bank facilities and debt capital market issuance are issued pursuant to the Global Secured Medium Term Note Programme dated 30 July 2002 between the Company, AWSF and Deutsche Trustee Company Ltd (as agent and trustee for itself and each of the finance parties). This agreement provides that any facilities drawn by AWSF will be passed directly on to the Company upon utilisation of the facility.
- Performance against the FD – Overall the Company has performed within the totex allowance set out in Ofwat's FD, mainly through our innovative approaches to capex expenditure. The Company has also achieved net financial reward over the first two years of the price control period through the performance framework.
- Credit related factors – The Company has maintained its investment grade credit rating at a level that allows adequate access to the financial markets.
- Business plans and long-term viability – In considering (ii) above, the Directors are mindful that there is a reliance on the accuracy of forecasting. The Company has undertaken a detailed planning and budgeting process that incorporates the period of twelve months commencing on the date of the Certificate. The Directors have reviewed forecasting accuracy and are satisfied that it is acceptable for this purpose.

### Management resources

- In respect of the adequacy of management resources, the Directors have gained assurance from the Company's chosen business model and organisational design resulting from the ring fencing of Anglian Water Services. Robust identification and allocation of resources has been made through alignment of objectives, processes and manpower requirements.
- Management skills, experience and relevant qualifications - The Company is managed operationally by the Management Board. The Board believes that the members of the Management Board have the appropriate mix of skills, experience and relevant qualifications to continue to run the Company effectively for the next 12 months. Details

of the individuals who form the Management Board can be found on page 109 of the Annual Integrated Report 2022.

- Recruitment process, staff engagement – The Company has a robust and fair recruitment process, using an applicant tracking system (ATS) to ensure GDPR compliance. The Company is an equal opportunities employer which aims for inclusion, diversity and fair treatment for all. The Company promotes this within its attraction strategies (including branding, careers website, adverts and job boards), throughout the application process and within its hiring manager recruitment and selection training and ongoing coaching.
- The Company values and recognises that diversity and inclusion is central to its success as an organisation and each member of the management board champions a different diversity demographic to drive advocacy, engagement and to reinforce organisational importance. We believe that the Company is better able to understand and meet the needs of its customers if the organisation reflects the communities it serves.
- The Company regularly engages with employees in a number of different ways, including regular consultations with trade unions and the Open House representative forum. In the annual 'Love to Listen' employee survey, carried out in September 2021, more than 6,500 employees took part, our highest ever response rate at 83%. An action plan to follow up on the survey feedback is being implemented, with updates provided through communications channels and a shorter pulse survey in April 2022 to check progress. Key themes include employee pride in our purpose to create environmental and social prosperity in the region we serve, maintaining our strong people management and encouraging collaboration between teams.
- We are using the new communication tools introduced during Covid-19 to broaden Open House from a group of employee representatives to a truly open forum in which all our people have direct access to regular interactive sessions with our CEO and senior management.
- Succession Planning for key management staff - The Company's succession plans for its key management staff are developed by the Management Board, led by the Group People and Change Director. The succession plans are reviewed and challenged annually by the Company's Nomination Committee (which consists of a majority of Independent Non-Executive Directors). Further information can be found on pages 129-131 of the Company's Annual Integrated Report 2022.
- Quality of management/staff induction and other training and development - On joining the Company, all staff are required to complete online induction training to understand the Company. This combined with other mandatory modules including Acceptable Use of IT, Data protection and Inclusion ensure all staff understand the Company's expectations and commitments. In addition, all new starters are provided with a booklet entitled 'Doing the Right Thing'. This booklet summarises key Company policies in a clear and concise way to ensure that the Company's values and standards are clear to colleagues from their very first day. All new Directors receive a comprehensive induction to the business; further information can be found on page 118 of the Company's Annual Integrated Report 2022.
- The Company offers a wide range of training and development to its employees during their careers in both operational and non-operational roles, including the externally accredited 'Licence to Operate' programme. During 2021/22 the training team used the 'Build Back Better' ethos to ensure that we retained the efficient ways of working that were developed throughout Covid-19 whilst still ensuring that competence was assured for all roles. We continue to develop virtual and remote training options where possible whilst retaining face-to-face training where physical interaction is required. We continue to develop our e-learning suite across a broad range of business areas and we have accelerated the roll-out of our Virtual Reality training programme which is now fully accredited by CABWI.
- Our apprenticeship and graduate programmes continue to grow and now cover over 200 positions across operations, project management, data analysis, IS, finance and our laboratories.
- Process for ensuring diversity of perspectives - The Company is committed to creating an environment where all employees feel included and valued in order to achieve their

potential. Further information on the Company's approach to inclusion can be found on page 66-68 on the Company's Annual Integrated Report 2022.

- Board or management activities, reports or statements – Both the Board (consisting of Executive Directors, Independent Non-Executive Directors and Non-Executive Directors) and Management Board meet regularly to consider and decide upon a range of operational, financial and strategic matters impacting the Company. Further information on the operation of the Board can be found in the Section 172 Statement on pages 73-76 and in the Corporate Governance Report on pages 112-121 of the Annual Integrated Report 2022.
- The Company publishes a range of annual and periodic reports including: Annual Integrated Report, Annual and Interim Financial Results, Annual Performance Report, Drinking Water Quality Report, Gender Pay Gap Report, Drought Modelling Report and Water Resources Management Plan.
- Independence of Board – It is a requirement of Ofwat's Board Leadership, Transparency and Governance (BLTG) Principles that 'independent non-executive directors are the largest single group on the Board'. The Board confirms that, for the 2021/22 financial year and up to the date of this certificate it has been compliant with this requirement, with the Board consisting of five Independent Non-Executive Directors, four Non-Executive Directors and two Executive Directors. The Board confirms it intends to maintain this structure for the next 12 months. Further information on the structure of the Board can be found in the Corporate Governance Report on pages 112-121 of the Company's Annual Integrated Report 2022.

### **Systems of planning and control**

- Governance procedures, risk management frameworks, oversight procedures – In October 2020, the Board adopted the Anglian Water Services Corporate Governance Code 2020 (the 2020 Code), which incorporates Ofwat's BLTG Principles and most of the provisions contained in the 2018 UK Corporate Governance Code. Full details of the compliance against the 2020 Code is detailed in the Corporate Governance Report on pages 112-121 of the Annual Integrated Report 2022.
- The 2020 Code came into effect on 1 October 2020 and replaced the Anglian Water Services Limited Corporate Governance Code 2019 (the 2019 Code). The only difference between the 2019 Code and the 2020 Code is that Provision 2.4 has been updated to ensure alignment with the Company's articles of association and Ofwat's requirements for Board composition.
- Both the Management Board and Board regularly review the Company's Top Tier Risk Register and the Company has a full risk management framework in place, details of which can be found on pages 90-103 of the Company's Annual Integrated Report 2022.
- Internal and external audit policies, processes, activities - Deloitte was awarded the contract for external audit services in September 2016, following a competitive tender process. The contract was for a four-year term which could be extended for up to a further four years, either annually or for any alternative period. The initial four-year contract expired in September 2020 and was extended in March 2020 until August 2021. It was subsequently extended, after careful consideration, for a further year until August 2022.
- During the year, the Audit Committee led a competitive tender process and, on conclusion of the tender process, the Committee recommended to the Board that Deloitte should be re-appointed from September 2023 for an initial four year term. To ensure the independence of the external auditors, the Company's Audit Committee approved a new policy on fees for non-audit work with effect from 1 April 2020. Under the new policy, only work permitted under the Financial Reporting Council's (FRC) 'whitelist' may be undertaken by the external auditors and the level of non-audit fees is restricted to 70 per cent or less of the average of the previous three years' audit fees. Further information on external audit can be found on pages 122-128 of the Company's Annual Integrated Report 2022.
- With effect from 1 August 2021, the provision of internal audit services has been undertaken by Head of Integrated Assurance and through the recruitment of an internal audit team, with specialist support provided by PricewaterhouseCoopers (PwC). The

Head of Integrated Assurance reports jointly to the Chief Financial Officer and the Chair of the Committee. Prior to 1 August 2021, the provision of internal audit services was outsourced to PwC. The Company's internal audit plan is approved on an annual basis and progress is reviewed by the Audit Committee regularly during the year. Further information on Internal Audit can be found on pages 122-128 of the Company's Annual Integrated Report 2022.

- The internal audit plan for 2022/23 was approved by the Committee at its meeting in March 2022. The plan is designed to review the range of principal risk areas facing the organisation and was also developed using a number of key inputs, including the regulatory environment, major projects and programmes and assurance activity. It is structured on a risk basis over an 18-month timescale and will involve a range of different audit types designed to add greater value and insight to the organisation in real time and assess other assurance activity to facilitate alignment and improvements in efficiency
- Systems for maintaining supply / business continuity - the Company has robust operational and organisational resilience mitigations in place to ensure its essential services to customers can continue during events that affect the Company's assets, people or processes. These include plans and procedures, incident room facilities, workplace recovery facilities, emergency equipment stocks, card warning stocks and stocks of alternative supplies such as bottled water. All processes and plans are regularly reviewed against risks to the business, and the Company undertakes training and exercises to validate these. Throughout the Covid-19 event, the Company continued to utilise its established Business Impact Analysis via an online platform to provide visibility and consistency across the business. This uses a systematic approach to assess the criticality of activities delivered within the business and the people, buildings, equipment, partners and systems that teams need to deliver them. This information continues to be used to form a whole range of Business Continuity plans such as workplace recovery arrangements and reduced manpower plans. These plans are regularly tested and exercised with all our critical teams. Business Impact Analyses forms part of the Company's ISO 22301 Business Continuity certification for which the Company is audited annually by Lloyd's Register. During the pandemic, the Company adapted its incident response processes to ensure it could respond during an incident while maintaining social distancing and continue the day-to-day operations while limiting the risk to staff and customers as much as possible. This "hybrid" response to incidents, with some incident personnel moving to a centralized space and some working remotely, will continue in the future. The Company is currently enhancing the "Anglian Water Force" with all employees being nominated for a secondary Incident support role during core working hours. This will greatly enhance our capacity to resource Incident Response Teams in the future. This programme is targeted for business wide delivery by the end of 2022/23.
- Policies to prevent fraud and other unethical behaviour including whistleblowing – The Company expects all employees, partners, agents and contractors to adopt a high standard of business ethics and have zero tolerance of bribery and corruption. The Company requires all employees to complete training, including on anti-bribery, maintaining a level playing field and data protection. The Company has a whistleblowing policy whereby employees can, in confidence, report on matters where they feel malpractice, criminal activities, improper or unethical behaviour is taking place. Employees can raise any concerns with management or, if this is inappropriate, to raise them with the externally facilitated helpline or confidential email address which is managed by an independent provider. The independent provider maintains a register of all allegations and senior management decide whether there are grounds for further investigation. Further information on the Company's approach to whistleblowing, anti-fraud and anti-bribery processes can be found on page 125 of the Company's Annual Integrated Report 2022.
- Risk, compliance other assurance statements - The Company has an extensive risk management process, with key risks regularly reviewed by the Management Board and Board. A full disclosure relating to resilience, risk management and viability is included in the Company's Annual Integrated Report 2022 on pages 90 to 103. The Company maintains registers that demonstrate that the Company complies with the

relevant sections of the Water Industry Act and its Licence. In addition, annual assurance statements from external assurance providers are included in the Annual Performance Report.

### **Rights and resources other than financial**

- Corporate missions and values – The Company operates within its values framework, the North Star, which combines its Purpose, Mission and Values to give a common goal for all employees. Along with the Company's public interest commitment, which is enshrined in the Company's Articles of Association, the values framework provides direction and guidance across all areas of the business to support the Company to deliver its purpose and keep the business running over the coming years.
- Technology and other systems for ensuring checks and balances - The Company has robust systems in place to ensure the management of a stage-gate approach to investment delivery, as well as a change control process for the initial allocation and subsequent re-allocation of capital and operational expenditure budgets. The Company has also worked to better integrate these systems to improve the consistency of management information and enable improved benefits decision making. In addition to the systems it has in place to manage the delivery of the investment programme, the Company also has a corporate risk tool which hosts the corporate risk register and allows risk owners to update their risks prior to Board updates.
- A wide range of technology and systems are deployed to ensure the functioning of the business, including an Enterprise Resource Planning (ERP) system, risk management system, extensive operational monitoring and control systems, field scheduling systems, employee management and customer and billing systems. The Heads of each business area are required to assess and confirm annually that the Business Unit Information Technology requirements are adequately met. The Company's internal audit programme for 2021/22 included a review of the risk of attack to corporate IT systems and the controls in place to prevent such attacks. Building on recent reviews relating to cyber security, this review focused upon key emerging risk areas such as Identity and Access Management (IdAM) which is a fundamental part of the foundation, ensuring that access to information systems and operational technology is well understood, documented and controlled.
- Policies to encourage an integrated approach and 'systems thinking' - The Company's management systems help ensure it meets customer commitments and deliver its outcomes. The Company's integrated management system framework sets out all its management system standards in a clear and consistent way, aligning to strategic priorities, business goals and good outcomes. Strategic and business unit plans form the basis on which Anglian Water sets and reviews its objectives, obligations and targets. These cover areas such as the following:
  - Customer - Putting its customers first by delivering a personal, trusted and effortless experience to make Anglian Water a leading service provider in the UK.
  - Water Quality - Protecting water quality from source to tap, providing confidence that its drinking water supply is always safe and clean.
  - Environment - Protecting and enhancing the air, water and land in the region served by the Company, thus sustaining and maintaining the environment.
  - Asset Management - Coordinating business activities to realise value from the Company's assets, reducing capital and operational carbon, while providing the services customers expect.
  - Resilience - Effective preparation, response and recovery arrangements to mitigate, minimise and ensure the Company can cope with the impact of disruptive events.
- Certified Business Management Systems (BMS) have been established to reinforce the management of risks associated with many areas of the business and compliance with obligations. Areas covered by BMSs include water and water recycling operations, asset management and occupational health and safety management. Audits of compliance with the requirements of these systems are conducted internally and by third party certifiers.



- The Company uses the integrated human resources management software system, Workday, to ensure a common approach is taken across the business in areas such as performance management, and to ensure all relevant employees undertake training on essential legal obligations, such as the Bribery Act and GDPR, and key internal policies which protect the companies' assets, such as the acceptable use of IT and the risks of cyber attack. The Heads of each business unit are required to assess and confirm annually that all the employees within their units are up-to-date with their training requirements.
- Planning systems - The Company has an asset management approach based on continuous planning and management of assets and investments, supported by the Company's Copperleaf C55 system, that ensures that the Company delivers efficient outcomes for customers. This is used to test all investment proposals and ensures that funds are allocated in the most efficient way to deliver benefits of greatest value to customers at the lowest whole-life cost. The approach is described in detail in the Company's PR19 Business Plan (Our Plan 2020-25 pages 107-108).
- Assets maintenance / insurance factors - Anglian Water is one of the leaders in the industry when it comes to Asset Management and coverage of asset information and asset models. The Company completes deterioration modelling coupled with an assessment of criticality of the Company's asset base to identify maintenance needs and completes site by site reviews to create bespoke site and catchment asset plans.
- For AMP7 the Company has developed this approach further to complete system plans, which look further at the interactions between the Company's assets and the communities they serve. Working with Ofwat, in 2021 the Company completed a maturity assessment of its approach to asset health and asset resilience. In its assessment of Anglian's submission, Ofwat rated Anglian's approach most highly of all of the companies in the sector. The assessment also highlighted areas where the Company can improve further. The Company hopes to work with Ofwat on the emerging PR24 strategy to ensure asset maintenance is properly funded for long term resilience.
- The Company appoints a London Insurance Broker to facilitate the placement of its insurance programme. The broker, in conjunction with the business, will annually (or more frequently if required) undertake a review of business activity combined with an assessment of the corporate risk profile, to determine the key threats to the business and its ability to meet its overall corporate objectives. This process, combined with a review of historic business losses and overall loss trends in the wider insurance market, determines the value of these financial risk exposures that can be transferred to the insurance market. The Company will, via its appointed Brokers, ensure it has met its statutory obligations to procure certain insurance policies and then, combined with approval from the Board, seek to place all other policies to the required limits (where available in the insurance market) to ensure key financial risks and assets are protected against significant loss.

## Contracting

- Position/ status of key contracts in place - The Company's Delivery Investment Programme key alliance Tier 1 & 2 contracts have been sourced in compliance with EU procurement regulations and signed by all shareholders. The contracts are differentiated by the degree of integration and alignment and the opportunity for longer-term collaboration with financially sustainable contractors. They adopt an appropriate works allocation to assure no material infringements to the Company's covenants are incurred and these are assured monthly through Company procedures.
- As key contractors within the investment programme, the alliances follow the following principles:
  - Commercial arrangements align partners' return with the Final Determination
  - Targets and arrangements incentivise innovation and performance.
  - Stretching targets are set around affordability, outcome performance, a carbon challenge and time to deliver.

- A strong focus on culture and behaviour exists across all of the Alliances, leading to greater collaboration and a constant exchange of best practice.
- Engagement with the partners is at programme / portfolio level rather than project level, enabling far greater degrees of efficiencies through governance procedures.
- Common supply chain frameworks are developed, providing scale benefits and more effective supplier management.
- Adherence to these principles creates a greater level of cost efficiency, shared resourcing, and exchange of best practice and is assured through Self Assurance Contacts embedded into the alliances.
- The terms of contracts awarded by the Company to independent third parties for the provision of certain services and operations are issued in compliance with the Utilities Contract Regulations 2006 and or 2015 (as applicable at the time of tender), and other appropriate UK regulations and EC Directives for the procurement of such outsourced services. In addition, we are taking part in the Government consultation on the creation of new utilities and public procurement regulations post Brexit which will ultimately replace the EU Utilities Contract Regulations 2006 and 2015.
- The Company currently sources from external sources a proportion of services, such as water main repairs, sewer repairs and facilities management. The Company has no intention to materially extend its outsourcing beyond current levels in the twelve months following the date of this certificate.
- The Company also complies with the requirements of the licence conditions and guidance issued by Ofwat in respect of cross-subsidies between the Appointee and any Associated Company.
- No Guarantees or Cross-Default Obligations have been given without Ofwat's written consent.
- The terms of contracts with all Associated Companies include service levels and appropriate terms and conditions and have been reviewed by the Company's Auditors as part of their annual audit. Any conflicts of interest for individual Directors must be disclosed under the Company's Article of Association. No Director may vote on any contract or arrangement between the Company and any other Anglian Water Group Company if he/she is also a Director of that Anglian Water Group Company.

### **Material Issues or Circumstances**

- Coronavirus/Covid-19 - The Company has maintained the provision of its services to customers during the entirety of the Covid-19 pandemic which started in March 2020. By adopting flexible working practices across all areas of its operations, supporting its employees, working collaboratively with the wider industry (e.g. in the procurement of PPE) and accessing financial reserves, the Company has shown strong resilience in the face of the Covid challenge. The Company looks forward to the conclusion of the pandemic and the opportunity to leverage permanent benefits from the lessons of the experience.
- Cost of living challenge – In common with the rest of the economy, the Company has seen its costs rising across the board during the last twelve months as supply chains struggled to recover from the constraints of the Covid-19 pandemic and, latterly, the global economy was rocked by Russia's invasion of Ukraine. The Company's resilience to this cost of living challenge is boosted by the indexation of its revenues to CPIH but also its own efforts – for example, the hedging of its energy costs to the end of 2022/23.
- The Company recognises the risk of bad debt from customers struggling to pay their bills and is taking steps to mitigate that risk. For example, we have changed the eligibility for concessionary tariffs to make them easier to access and are using the Anglian Water assistance fund and 'Back on Track' programme to help customers manage their accounts. Our extra care team makes sure that customers struggling to pay are on the right tariff (LITE or Extra LITE) and can advise on payment plans to help budget. Customers can apply to join the Priority Services Register that points them to other help and benefits.

- River water quality – the publication of data from recently installed event duration monitors (EDMs) has revealed the extent to which untreated waste water is periodically discharged to watercourses across England and Wales. In response, the Company published a five point plan in March 2022 ('Get river positive') to set out how it intended to address the issue. Pledges included commitments to significantly reduce the frequency of spills, support the creation of more bathing waters in our region and work with others to achieve river water quality improvements. Separately, Ofwat launched a sector-wide enquiry into companies' compliance with the flow to full treatment (FFT) conditions of their discharge permits. The Company has responded fully to Ofwat's information requests and confirmed high levels of FFT-compliance.
- Russian sanctions – the UK government has passed sanctions legislation in response to Russia's invasion of Ukraine. We assessed that the primary risk to related to our supply chain and sought information from our major suppliers. A small number gave us concerns which required investigation. We cancelled contracts with two suppliers, one for the sale of renewable obligation certificates and another for the purchase of polyethylene pipe. To the best of our knowledge we are not trading with any supplier who may be subject to sanctions.



## Table 1A - Income statement

For the year ended 31 March 2022

	Line description	Units	Statutory	Adjustments			Total appointed activities
				Differences between statutory and RAG definitions	Non-appointed	Total adjustments	
1	Revenue	£m	1,399.812	(98.665)	25.183	(123.848)	1,275.964
2	Operating costs	£m	(971.331)	21.085	(15.526)	36.611	(934.720)
3	Other operating income	£m	12.323	(7.418)	-	(7.418)	4.905
4	Operating profit	£m	440.804	(84.998)	9.657	(94.655)	346.149
5	Other income	£m	-	102.212	-	102.212	102.212
6	Interest income	£m	1.397	-	-	-	1.397
7	Interest expense	£m	(460.006)	(16.911)	-	(16.911)	(476.917)
8	Other interest expense	£m	-	0.202	-	0.202	0.202
9	Profit before tax and fair value movements	£m	(17.805)	0.505	9.657	(9.152)	(26.957)
10	Fair value gains/(losses) on financial instruments	£m	(115.124)	-	-	-	(115.124)
11	Profit before tax	£m	(132.929)	0.505	9.657	(9.152)	(142.081)
12	UK Corporation tax	£m	18.700	(0.859)	(1.835)	0.976	19.676
13	Deferred tax	£m	(328.900)	22.202	-	22.202	(306.698)
14	Profit for the year	£m	(443.129)	21.848	7.822	14.026	(429.103)
15	Dividends	£m	(96.300)	-	(13.281)	13.281	(83.019)
<b>Tax analysis</b>							
16	Current year	£m	(13.600)	0.859	1.835	(0.976)	(14.576)
17	Adjustments in respect of prior years	£m	(5.100)	-	-	-	(5.100)
18	UK Corporation tax	£m	(18.700)	0.859	1.835	(0.976)	(19.676)
<b>Analysis of non-appointed revenue</b>							
19	Imported sludge	£m	-	-	-	-	-
20	Tankered waste	£m	-	-	4.750	-	-
21	Other non-appointed revenue	£m	-	-	20.433	-	-
22	Revenue	£m	-	-	25.183	-	-

**1** The figures in the statutory columns in tables 1A to 1D are based on the company only accounts of Anglian Water. The principal differences between the statutory accounts and the APR are in respect of capitalised interest and the classification of grants and contributions income. For regulatory reporting capitalised interest is not permitted and therefore the adjustments are to reverse out the impact on depreciation, interest and deferred tax. Grants and contributions income in the statutory accounts is classified as revenue (in accordance

with IFRS 15 'Revenue from Contracts with Customers'), whereas in the regulatory accounts it is classified as 'other income'. The other adjustments are reclassifications of the following items:

- Profit on disposals of fixed assets is treated as operating costs in the statutory accounts and other operating income in the APR.
- Rents received are classified as other operating income in the statutory accounts, and other income in the regulatory accounts.
- Contributions received for rechargeable works and fluoridation are other operating income in the statutory accounts, but classified as revenue in the regulatory accounts.
- Certain income treated as negative expenditure in the regulatory accounts (table 2B) is classified as other operating income in the statutory accounts in accordance with IFRS 15.
- Interest charges in respect of defined benefit pension schemes are classified as interest expense in statutory accounts and other interest expense in the APR.
- An accrual has been recorded within the statutory accounts in relation to the innovation fund. As agreed by Ofwat the cost has been reversed for the purposes of the regulatory accounts but no corresponding adjustment made within revenue. The only costs recorded in the APR for innovation fund are the actual costs on projects that have been funded by the innovation fund. These are offset by the release of the accrual in the statutory accounts.

**2** These adjustments explaining the difference between statutory and RAG definitions are summarised in the following table.

### Difference between statutory and RAG definitions

Line description	Adjustments						Total adjustments
	Reclassification of profit on disposal of assets £m	Capitalisation of interest and related depreciation £m	Reclassification of other operating income £m	Grants and contributions income £m	Reclassification of pension scheme interest £m	Reversal of innovation fund provision £m	
Revenue	-	-	1.462	(100.127)	-	-	(98.665)
Operating costs	(4.900)	12.693	8.771	-	-	4.521	21.085
Other operating income	4.900	-	(12.318)	-	-	-	(7.418)
Other income	-	-	2.085	100.127	-	-	102.212
Interest expense	-	(16.709)	-	-	(0.202)	-	(16.911)
Other interest expense	-	-	-	-	0.202	-	0.202
UK corporation tax	-	-	-	-	-	(0.859)	(0.859)
Deferred tax	-	22.202	-	-	-	-	22.202
Total	-	18.186	-	-	-	3.662	21.848

**3** The following commentary is in relation to the appointed business only.

**4** In April 2021, the IFRS Interpretations Committee ('IFRIC') agenda decision on the treatment of configuration and customisation costs in a cloud computing arrangement was ratified by the International Accounting Standards Board. The guidance clarified that in order for an intangible asset to be capitalised in relation to customisation and configuration costs in a software-as-a-service (SaaS) arrangement, it is necessary for there to be a separate intangible asset which meets the definition in IAS 38 Intangible Assets. The company's previous policy was to capitalise such customisation and configuration costs. The company has therefore changed its accounting policy to align to the agenda decision.

### Revenue (1A.1)

**5** Total revenue for the year was £1,276.0 million, an increase of £18.7 million (1.5 per cent) on last year.

- The price increase for customers following the regulatory pricing formula, £36.4 million increase.
- The impact of Covid-19 restrictions lifting, net £36.4 million decrease. Household consumption down £49.3 million and non-household consumption up £12.9 million as we trend back to pre-Covid-19 levels of consumption.
- £19.0 million which has been ring-fenced to fund our LITE tariff, which has supported customers through Covid-19 and is being retained to provide additional support through the cost of living crisis.
- Other offsetting amounts in revenue of £0.3 million including increases in customer numbers.

### Operating costs (including depreciation) (1A.2)

**6** Operating costs of £934.7 million comprise opex of £ 601.0 million and depreciation of £333.7 million. Overall operating costs (including depreciation) for the year decreased by £1.3 million (0.1 per cent) from £936.0 million in 2021. The key movements in operating costs are highlighted in the following table.

Summary of changes in operating expenditure	
Category	£m
Prior year operating cost	595.9
Prior year Software as a Service restatement	15.6
Prior year restated	611.5
Prior year depreciation and amortisation	337.5
Prior year Software as a Service restatement	-13
Prior year restated	324.5
Prior year Operating costs (including depreciation) restated	936
Funded by FD	
Inflation	24.4
Reduction in Software as a Service in the year	-6
Capitalisation of replacement infrastructure assets	-16.8
Weather related incidents	

Additional tankering of sludge	2
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<b>Bad debt provision</b>	
Improved collection	-11.9
Release of excess Covid-19 provision	-8.1

<b>Other significant items</b>	
Leakage performance strategy	8.5
Ongoing efficiency challenge	-3.9

Increase in depreciation (including Software as a Service restatement)	10.5
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Net decrease in operating costs (including depreciation)	-1.3
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### Prior year Software as a Service (SaaS) restatement

**7** As discussed earlier, our intangible asset accounting policy has been amended to reflect the clarification by the International Financial Reporting Interpretations Committee (IFRIC) on the treatment of Software as a Service costs, meaning certain costs that were previously capitalised have been expensed. This has resulted in a prior year increase to operating costs of £15.6 million. These costs naturally fluctuate as systems implementations change year on year, incurring a cost in the current year of £9.6 million, a £6.0 million reduction on the previous year. This resulted in a reduction of £13.0 million in the prior year relating to amortisation of these previously capitalised assets.

### Inflation

**8** The inflationary increases in our cost base which formed part of the Final Determination and are therefore funded through the inflationary increases in revenues.

### Capitalisation of replacement infrastructure assets

**9** In order to improve efficiency, there was a change in the way we deliver boundary box and external meter chamber replacement. As a result of the change in delivery, which has moved from individual jobs to a scheme of work, the cost of the scheme is above our de-minimis threshold for capitalisation, resulting in the costs being treated as capital expenditure rather than operational.

### Additional tankering

**10** The impacts of climate change are fundamental to our business and our climate-related financial disclosures can be found on pages 79-89 of our AIR. The past two years have seen a number of exceptional weather events. The extremely wet weather at the start of 2021 resulted in increased costs of tankering in the current year as we had to move extra sludge volumes around the region.

### Bad debt provision

**11** The decrease in bad debt is a result of strong cash collection in the year and the reassessment of provision in our debt over 48 months old (£6.0 million), as a result of continued positive collection in combination with a change to our write-off policy in April 2020. In addition we estimate the impact of future macro-economic factors on our collection performance as required by IFRS 9. The improving unemployment forecasts, offset in part

by the projected cost of living crisis, has resulted in the release of £6.6 million of bad debt provision. Set against last year's increase of £1.5 million, this amounts to a net £8.1 million reduction.

### **Leakage performance strategy**

**12** In addition to the above, we spent an additional £8.5 million in relation to the Leakage Recovery Project, which was part of the increased investment towards meeting leakage targets for the year and contributed to a 6.1 per cent reduction.

### **Ongoing efficiency challenge**

**13** Representing management's ongoing drive to ensure strong cost control and spend being delivered efficiently.

### **Energy**

**14** The market cost of power has fluctuated significantly in the year. The business hedges its costs by locking in wholesale electricity rates in advance, which has mitigated increasing electricity rates in the year, however we did see a modest increase in gas costs which were not economic to hedge but these were offset by a decrease in consumption and lower non-commodity prices. In the final few months of the year management spent considerable time reviewing the hedging strategy and will continue to do so over the coming year.

### **Depreciation**

**15** Depreciation and amortisation is up 3.0 per cent to £333.7 million compared with last year, primarily as a result of higher fixed asset balances as we construct and commission assets in line with our capital investment programme.

### **Other operating income (1A.3)**

**16** This line comprises primarily profits on fixed asset disposals. More disposals were made in 2021/22, most notably the sale of land at our Great Billing site, hence the increase compared with the prior year.

### **Operating profit (1A.4)**

Operating profit for the year was £346.1 million, an increase of 7.3 per cent compared with the previous year. This reflects the increase in revenue and profits on fixed asset disposals more than offsetting the decrease in operating costs including depreciation, as discussed above.

### **Other income (1A.5)**

**17** Other income has increased by £25.8 million from the previous year. This line primarily represents the cash and asset contributions made principally by property developers and local authorities for connecting new property developments to the water and sewerage network, and for diverting existing infrastructure. The movement in the year reflects additional income from High Speed 2 (HS2, the planned high-speed rail connection between London and cities in the north of England) and a strong rebound in the housing market.

### **Interest income (1A.6)**

**18** Interest income for the year was £1.4 million, compared with £2.0 million for the prior year - the decrease is primarily due to a decrease in the average deposits held in the year.

### **Interest expense (1A.7)**

**19** Interest expense has increased from £270.8 million in 2021 to £476.9 million in 2022. This was primarily the result of the non-cash impact of higher inflation on index-linked debt which increased by £206.4 million to £255.0 million. This increase was due to an increase

in year-on-year average Retail Price Index (RPI) from 1.2 per cent to 5.8 per cent and year-on-year average Consumer Price Index (CPI) from 0.6 per cent to 4.0 per cent. We have both RPI-linked debt and CPI-linked debt to hedge the Regulated Capital Value (RCV).

### Other interest expense (1A.8)

**20** Other interest expense is made up of the actuarial pension charge or credit on the defined benefit pension scheme, which is partly driven by the level of the pension scheme accounting deficit or surplus at the start of the year. There was a credit for the year of £0.2 million, compared with a credit of £3.4 million in the previous year. This is consistent with there having been a significant accounting surplus on the funded defined benefit scheme.

**21** The below table shows the components which make up the interest figures in interest expense (1A.7) and other interest expense (1A.8):

Component	Amount (£m)	Table reference
Interest expense on bank loans and overdrafts	2.673	1A.7
Interest expense on other loans including financing expenses	213.795	1A.7
Indexation of loan stock	255.013	1A.7
Amortisation of debt issue costs	4.083	1A.7
Interest on leases	1.166	1A.7
Unwinding of discount on provision	0.047	1A.7
Debt management fee to AWSF	0.328	1A.7
Total interest expense	477.105	1A.7
Defined benefit pension scheme interest	(0.202)	1A.8
Total interest and other interest expense	476.715	1A.7 & 1A.8

### Profit before tax and fair value movements (1A.9)

**22** The profit before tax and fair value movements has decreased from £133.8 million profit in the previous year to £27.0 million loss in 2021/22. This decrease is largely as a result of the increase in indexation discussed above.

### Fair value gains and (losses) on financial instruments (1A.10)

**23** There was a fair value loss of £115.1 million on derivative financial instruments in 2022, compared with a loss of £23.2 million in 2021. The fair value losses in the current year are all non-cash in nature and have no material effect on the underlying commercial operations of the business. The driving factors for the loss in 2022 were primarily due to increases in forward inflation expectations, partially offset by a rise in forward interest rates (decreasing the discounted present value of derivatives). During the year, forward inflation increased by circa 138 basis points and forward interest rates increased by 54 basis points across the curves.

### Profit before tax (1A.11)

**24** The loss before tax for the year was £142.1 million, compared with a profit of £110.6 million in the previous year. This reflects the decrease in profit before tax and increase fair value movements referred to above.

### Current tax and deferred tax (1A.12 / 1A.13)

**25** The current tax credit for the year was £19.7 million (2021: credit of £5.9 million).

**26** The current tax credit for both years reflects receipts from other Group companies for losses surrendered to those Group companies. The tax losses arise mainly because capital allowances exceed the depreciation charged in the accounts, as well as some income not being taxable and the availability of tax relief on pension contributions paid in the year. In this year there is also a one-off current tax credit due a transitional adjustment on the treatment of SaaS.

**27** The deferred tax charge has increased by £282.3 million from a charge of £24.4 million in 2021 to a charge of £306.7 million this year.

**28** The primary reason for the increase in the deferred tax liability is the increase in corporation tax rate from 19 per cent to 25 per cent which is due to take effect from April 2023. As our deferred liability will not arise until after the new corporation tax rate is in force in April 2023, we have to restate the liability using the increased rate of 25 per cent. This results in an increase of £353.6 million.

**29** Tax forms part of the revenue building block and therefore any future tax charges will be funded through revenues. Further, Ofwat introduced a tax true-up reconciliation in the current AMP to account for changes in tax rates.

### **Profit / (loss) for the year (1A.14)**

**30** The loss for the year was £429.1 million, compared with a profit of £92.1 million for the previous year. The loss in the current year is consistent with the decreased profit before combined with the tax charge described above.

### **Dividends (1A.15)**

**31** Dividend payments in the year of £83.0 million (2021: £nil).

**32** In June 2022 a final dividend of £169.0 million was approved and paid. A deduction of £9.0 million has been made to reflect the ODI penalty in the period. This decision is in combination with an equity injection of £1,165.0 million in the period and results in a net equity injection for the AMP of £899.7 million. Through these capital injections the company continues to benefit from the strong support of shareholders. It is proposed that our ultimate shareholders will, for the first time since 2017, receive a dividend: £91.8 million.



**Table 1B - Statement of Comprehensive Income**

Line description	Units	Statutory	Adjustments			Total appointed activities
			Differences between statutory and RAG definitions	Non-appointed	Total adjustments	
1 Profit for the year	£m	(443.129)	21.848	7.822	14.026	(429.103)
2 Actuarial gains/(losses) on post-employment plans	£m	110.000	-	-	-	110.000
3 Other comprehensive income	£m	55.700	-	-	-	55.700
4 Total Comprehensive income for the year	£m	(277.429)	21.848	7.822	14.026	(263.403)

**1** The principal difference between the statutory accounts and the APR for this table is in respect of capitalised interest. For regulatory reporting, capitalised interest is not permitted and therefore the adjustments are to reverse out the impact on profit for the year.

**2** Appointed comprehensive expense for the year of £263.4 million, comprising loss for the year of £429.1 million, offset by actuarial gains on post employment benefits of £110.0 million and other comprehensive income which are gains on cash flow hedges of £55.7 million.

**3** Other than the changes to the profit for the year as detailed in the commentary for table 1A, there are no differences between the statutory and regulatory accounts on the statement of other comprehensive income.

#### **Actuarial gains/(losses) on post employment plans (1B.2)**

**4** Actuarial gains on retirement benefit obligations for the year were £110.0 million (2021: losses of £131.8 million), comprising actuarial losses of £135.7 million partially offset by deferred tax on these gains of £25.7 million. This resulted in Anglian Water reporting a net retirement benefit asset of £163.4 million as at 31 March 2022 (2021: £10.0 million).

#### **Other comprehensive income (1B.3)**

**5** Other comprehensive income for the year comprises gains on cash flow hedges of £70.7 million (2021: £20.0 million), partially offset by deferred tax on these gains of £15.0 million (2021: £3.8 million).

**Table 1C - Statement of Financial Position**

Line description	Units	Statutory	Adjustments			Total appointed activities
			Differences between statutory and RAG definitions	Non-appointed	Total adjustments	

<b>Non-current assets</b>
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1	Fixed assets	£m	10,304.075	(346.503)	12.237	(358.740)	9,945.335
2	Intangible assets	£m	217.998	(10.864)	1.478	(12.342)	205.656
3	Investments - loans to group companies	£m	-	-	-	-	-
4	Investments - other	£m	-	-	-	-	-
5	Financial instruments	£m	57.756	-	-	-	57.756
6	Retirement benefit assets	£m	205.213	-	-	-	205.213
7	Total non-current assets	£m	10,785.042	(357.367)	13.715	(371.082)	10,413.960

<b>Current assets</b>
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8	Inventories	£m	16.857	-	-	-	16.857
9	Trade & other receivables	£m	516.586	-	-	-	516.586
10	Financial instruments	£m	56.529	-	-	-	56.529
11	Cash & cash equivalents	£m	867.837	-	-	-	867.837
12	Total current assets	£m	1,457.810	-	-	-	1,457.810

<b>Current liabilities</b>
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13	Trade & other payables	£m	(498.211)	(65.639)	(11.880)	(53.759)	(551.970)
14	Capex creditor	£m	(130.933)	-	-	-	(130.933)
15	Borrowings	£m	(476.322)	74.608	-	74.608	(401.714)
16	Financial instruments	£m	(10.126)	-	-	-	(10.126)
17	Current tax liabilities	£m	(148.601)	(1.704)	(1.835)	0.131	(148.470)
18	Provisions	£m	(4.700)	-	-	-	(4.700)
19	Total current liabilities	£m	(1,268.893)	7.265	(13.715)	20.980	(1,247.913)

20	Net Current assets/(liabilities)	£m	188.917	7.265	(13.715)	20.980	209.897
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Line description	Units	Statutory	Adjustments			Total appointed activities
			Differences between statutory and RAG definitions	Non-appointed	Total adjustments	

	<b>Non-current liabilities</b>						
21	Trade & other payables	£m	-	-	-	-	-
22	Borrowings	£m	(6,015.711)	-	-	-	(6,015.711)
23	Financial instruments	£m	(1,192.789)	-	-	-	(1,192.789)
24	Retirement benefit obligations	£m	(41.797)	-	-	-	(41.797)
25	Provisions	£m	(6.966)	-	-	-	(6.966)
26	Deferred income - G&C's	£m	-	-	-	-	-
27	Deferred income - adopted assets	£m	-	-	-	-	-
28	Preference share capital	£m	-	-	-	-	-
29	Deferred tax	£m	(1,451.858)	89.342	-	89.342	(1,362.516)
30	Total non-current liabilities	£m	(8,709.121)	89.342	-	89.342	(8,619.779)
31	Net assets	£m	2,264.838	(260.760)	0.000	(260.760)	2,004.078
	<b>Equity</b>						
32	Called up share capital	£m	32.000	-	-	-	32.000
33	Retained earnings & other reserves	£m	2,232.838	(260.760)	-	(260.760)	1,972.078
34	Total Equity	£m	2,264.838	(260.760)	-	(260.760)	2,004.078

**1** The statement of financial position is based on the statutory Company only balance sheet with adjustments for interest capitalised and associated deferred tax, innovation fund and reclassifications of trade and other payables as detailed below.

**2** The principal difference between the statutory accounts and APR is in respect of capitalised interest. For regulatory reporting, capitalised interest is not permitted and therefore the adjustments are to reverse out the impact on accumulated depreciation, deferred tax and reserves. With the introduction of the innovation fund this AMP, as discussed in the commentary to 1A, the only costs related to the innovation fund expected to be included are actual costs on projects that have been funded by the innovation fund (as reported in line 9A.22 of the APR). Companies are also expected to unwind any accrual that was reported in 2020/21. The only other adjustments are the reclassification of current grants and contributions and accrued interest to trade and other payables and of capital creditors.

**3** These adjustments are summarised in the table below.

Line description	Adjustments				Total adjustments
	Reversal of capitalised interest cost	Reclassification of interest accrual on debt	Deferred tax impact of reversal of capitalised interest cost	Reversal of provision for innovation fund	
	£m	£m	£m	£m	£m
Fixed assets	(346,503)	-	-	-	(346.503)
Intangible assets	(10.864)	-	-	-	(10.864)
Trade & other payables	-	(74.608)	-	8.970	(65.638)
Current tax liabilities	-	-	-	(1.704)	(1.704)
Borrowings	-	74.608	-	-	74.608
Deferred tax	-	-	89.342	-	89.342
Retained earnings and other reserves	357.367	-	(89.342)	(7.266)	260.760

**4** The following commentary is in relation to the appointed business only.

#### **Fixed assets (1C.1)**

**5** The net book value (NBV) for tangible fixed assets has increased by £257.5 million due to capital expenditure in the year, partially offset by the depreciation charge.

#### **Intangible assets (1C.2)**

**6** The NBV of intangible assets increased by £21.3 million over the year, reflecting expenditure on IT systems, partially offset by the amortisation charge for the year. The impact of the SaaS restatement was to reduce the intangible balance in the prior year by £59.6 million.

#### **Retirement benefit surpluses/obligations (1C.6 and 1C.24)**

**7** Net retirement benefit assets were £163.4 million comprising a surplus of £205.2 million on the combined Anglian Water Services and Hartlepool schemes, and a £41.8 million obligation on an unfunded scheme.

#### **Current assets (1C.8-1C.12)**

**8** Total current assets have increased by £597.6 million (69.5 per cent) in the year. This is primarily due to an increase in cash and cash equivalents of £607.2 million and an increase in trade and other receivables of £15.6 million, largely as a result of increase consumption and prices, offset by a £28.3 million decrease in financial instruments as discussed in the commentary to table 4I.

**9** The statutory cash figure includes £392.0 million of other short term deposits with a tenor of more than three months which are classified as investments - cash deposits within the statutory accounts.

**10** Included within cash is £8.5 million of money collected from customers which has been ring fenced to be used to fund projects awarded by Ofwat in relation to their innovation fund.

#### **Trade and other payables (1C.13)**

**11** Compared with the prior year, trade payables have increased by £65.2 million (13.4 per cent) to £552.0 million. This is consistent with the increase in operating costs and also due to the increase in bills causing an increase in payments on account.

**Capex creditor (1C.14)**

**12** Capital creditors have increased by 24.8 per cent to £130.9 million at 31 March 2022. This movement reflects increased spend in the current year as reflected in the increases seen on the fixed and intangible asset lines above. The impact of the SaaS restatement was to reduce the capital creditor balance in the prior year by £11.0 million.

**Borrowings (1C.15 and 1C.22)**

**13** Total borrowings have decreased by £436.5 million in the year. This primarily reflects new term loans of £100.5 million less loan repayments of £656.4 million. The remainder of the movement is largely caused by indexation of £170.2 million increasing the balance offset by fair value gains and losses and foreign exchange of £20.5 million. A full reconciliation can be found in the analysis of net debt in our statutory accounts.

**Current tax liabilities (1C.17)**

**14** Current tax liabilities have reduced by £18.4 million in the year. The liability solely reflects amounts owed to other group companies where the regulated company, Anglian Water Services Limited, has increased its taxable profits by disclaiming capital allowances only for the benefit of these other companies. There is agreement that the regulated company will pay the tax liabilities arising from the increased taxable profits when it receives the benefit of the disclaimed capital allowances. No amounts are owed to the tax authorities.

**Deferred tax (1C.29)**

**15** The deferred tax credit is £89.3 million lower than the statutory accounts due to the reversal of capitalised interest on fixed and intangible assets, lines 1 and 2. Compared with last year the balance is £347.8 million higher which is primarily due to the increase in corporation tax rate from 19 per cent to 25 per cent which is due to take effect from April 2023. As our deferred liability will not arise until after the new corporation tax rate is in force in April 2023, we have to restate the liability using the increased rate of 25 per cent. This results in an increase of £332.4 million. The remaining movements are due to charge in relation to capital allowances claimed in excess of the depreciation charge in the accounts being more than offset by the overall deferred tax credit on actuarial losses of retirement benefit deficit and hedging reserve movements.

**Retained earnings (1C.33)**

**16** The difference of £260.8 million between the statutory and regulatory accounts is the reversal of capitalised interest less the related movement in deferred tax as a result of this and the reversal of the innovation fund accrual. The impact of the SaaS restatement on retained earnings was to reduce the balance in the prior year by £38.7 million.

**Table 1D - Statement of Cash Flows**

	Line description	Units	Statutory	Adjustments			Total appointed activities
				Differences between statutory and RAG definitions	Non-appointed	Total adjustments	
	Operating activities						
1	Operating profit	£m	440.804	(84.998)	9.657	(94.655)	346.149
2	Other income	£m	(39.161)	102.212	-	102.212	63.051
3	Depreciation	£m	347.748	(12.693)	1.347	(14.040)	333.708
4	Amortisation - G&C's	£m	-	-	-	-	-
5	Changes in working capital	£m	50.723	(4.521)	-	(4.521)	46.202
6	Pension contributions	£m	(18.055)	-	-	-	(18.055)
7	Movement in provisions	£m	(4.346)	-	-	-	(4.346)
8	Profit on sale of fixed assets	£m	(4.900)	-	-	-	(4.900)
9	Cash generated from operations	£m	772.813	(0.000)	11.004	(11.004)	761.809
10	Net interest paid	£m	(224.081)	1.496	-	1.496	(222.585)
11	Tax paid	£m	-	-	(1.281)	1.281	1.281
12	Net cash generated from operating activities	£m	548.732	1.496	9.723	(8.227)	540.505
	Investing activities						
13	Capital expenditure	£m	(524.149)	-	(3.513)	3.513	(520.636)
14	Grants & Contributions	£m	-	-	-	-	-
15	Disposal of fixed assets	£m	5.843	-	-	-	5.843
16	Other	£m	(312.000)	-	7.071	(7.071)	(319.071)
17	Net cash used in investing activities	£m	(830.306)	-	3.558	(3.558)	(833.864)
18	Net cash generated before financing activities	£m	(281.574)	1.496	13.281	(11.785)	(293.359)

Line description	Units	Statutory	Adjustments			Total appointed activities
			Differences between statutory and RAG definitions	Non-appointed	Total adjustments	

Cashflows from financing activities							
19	Equity dividends paid	£m	(96.300)	-	(13.281)	13.281	(83.019)
20	Net loans received	£m	(492.072)	(1.496)	-	(1.496)	(493.568)
21	Cash inflow from equity financing	£m	1,165.000	-	-	-	1,165.000
22	Net cash generated from financing activities	£m	576.628	(1.496)	(13.281)	11.785	588.413
23	Increase (decrease) in net cash	£m	295.054	(0.000)	(0.000)	(0.000)	295.054

**1** The principal differences between the statutory accounts and the APR are in respect of capitalised interest, and the classification of grants and contribution income. For regulatory reporting, capitalised interest is not permitted and therefore the depreciation of capitalised interest has been removed here. Grants and contributions (G&C) income is included in revenue within the statutory accounts, but classified as other income in the regulatory accounts. As discussed in the commentary for 1A and 1C, the accrual for the innovation fund has been reversed for regulatory purposes, with the only costs recorded being those incurred on projects funded by the innovation fund. The other adjustments are a reclassification of debt issue costs from interest paid to net loans received and a reclassification of pensions operating expenditure from contributions to movements in provisions.

**2** These adjustments, explaining the difference between statutory and RAG definitions, are summarised in the table below.

Line description	Adjustments				Total adjustments
	Reclassification of issues costs	Capitalisation of interest and related depreciation	Reclassification of G&C and rental income	Reversal of provision for innovation fund	
	£m	£m	£m	£m	£m
Operating profit	-	12.693	(102.212)	4.521	(84.998)
Other income	-	-	102.212	-	102.212
Depreciation	-	(12.693)	-	-	(12.693)
Changes in working capital	-	-	-	(4.521)	(4.521)
Net interest paid	1.496	-	-	-	1.496
Net loans received	(1.496)	-	-	-	(1.496)

**3** The following commentary is in relation to the appointed business only.

### Operating profit (1D.1)

**4** The increase in operating profit is explained in the commentary to table 1A. Largely as a result of the increase in revenue more than offsetting the increase in costs.



### **Other income (1D.2)**

**5** Other income has increased £15.9 million to £63.1 million as a result of the strong rebound seen in the housing market in the current year and additional income from new schemes, such as HS2.

**6** The £39.2 million included within the statutory column relates to assets adopted for nil consideration. This is shown within a separate line within the statutory accounts as an adjustment within operating activities, therefore this has been included within Other income within the regulatory accounts.

### **Changes in working capital (1D.5)**

**7** Changes in working capital increased £67.4 million on the prior year to £46.2 million. This is largely as a result of the increase seen in trade and other payables of £65.2 million and the increase in trade and other receivables of £15.7 million as discussed in the commentary to table 1C. The remainder of the movement is due to the timing of certain payments around the year end.

### **Pension contributions (1D.6)**

**8** The pension contributions primarily comprises of the defined benefits scheme deficit reduction payments of £14.6 million.

### **Profit on sale of fixed assets (1D.8)**

**9** The increase in profit on sale of fixed assets reflects the higher number of disposals in the year.

### **Net interest paid (1D.10)**

**10** Net interest paid increased by £4.5 million to £222.6 million in the current year - even though borrowings decreased and therefore attracted reduced interest costs in comparison there was a make-whole payment in respect of early repayment of debt in the current year.

### **Net cash generated from operating activities (1D.12)**

**11** Net cash inflow from operating activities increased by £154.0 million from £386.5 million in 2021 to £540.5 million in 2022 reflecting the movements discussed above.

### **Equity dividends paid (1D.19)**

**12** Appointed dividend payments in the year of £83.0 million (2021: £nil), which excludes an assumed non-appointed dividend of £13.3 million (2021: £nil).

**13** In June 2022 a final dividend of £169.0 million was approved and paid. A deduction of £9.0 million has been made to reflect the ODI penalty in the period. This decision is in combination with an equity injection of £1,165.0 million in the period and results in a net equity injection for the AMP of £899.7 million. Through these capital injections the company continues to benefit from the strong support of shareholders. It is proposed that our ultimate shareholders will, for the first time since 2017, receive a dividend: £91.8 million.

**Table 1E - Net Debt Analysis**

Line description	Units	Fixed rate	Floating rate	Index linked		Total
				RPI	CPI/CPIH	

<b>Interest rate risk profile</b>
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1	Borrowings (excluding preference shares)	£m	1,728.909	367.812	3,493.759	1,004.572	6,595.051
2	Preference share capital	£m	-	-	-	-	-
3	Total borrowings	£m	-	-	-	-	6,595.051
4	Cash	£m	-	-	-	-	(138.837)
5	Short term deposits	£m	-	-	-	-	(729.000)
6	Net Debt	£m	-	-	-	-	5,727.214

<b>Gearing</b>
----------------

7	Gearing	%	-	-	-	-	65.4%
8	Adjusted Gearing	%	-	-	-	-	64.8%

<b>Interest</b>
-----------------

9	Full year equivalent nominal interest cost	£m	106.633	7.269	388.498	77.959	580.359
10	Full year equivalent cash interest payment	£m	106.633	7.269	67.945	7.139	188.986

<b>Indicative interest rates</b>
----------------------------------

11	Indicative weighted average nominal interest rate	%	6.168%	1.976%	11.120%	7.760%	8.800%
12	Indicative weighted average cash interest rate	%	6.168%	1.976%	1.945%	0.711%	2.866%

<b>Time to maturity</b>
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13	Weighted average years to maturity	nr	5.453	15.182	16.803	16.096	11.430
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## Borrowings (excluding preference shares) (1E.1)

**1** As per the guidance, borrowings are shown at nominal values plus indexation to 31 March 2022. Accrued interest and fair value adjustments are excluded, and so the numbers shown are different to Anglian Water's statutory accounts which are prepared on an IFRS basis. A reconciliation of gross and net debt calculated on a regulatory and statutory accounts basis is shown below. The mix of debt has moved from prior year as discussed in the commentary to Table 4H.

	Total £m
<b>Borrowings (per regulatory definition)<sup>1</sup></b>	<b>6,595.1</b>
Fair value IFRS adjustments <sup>2</sup>	(16.4)
Deduct accreted indexation on swaps <sup>3</sup>	(141.6)
Adjust issue costs <sup>4</sup>	(19.7)
<b>Non-current and Current Debt as per Table 1C</b>	<b>6,417.4</b>
Debt interest accrual <sup>5</sup>	74.6
<b>IFRS debt (per statutory accounts)</b>	<b>6,492.0</b>

<sup>1</sup>Includes £30.6 million of leases, additional to the £5.2 million defined under the CTA.

<sup>2</sup>This represents the IFRS fair value accounting adjustment to applicable debt and derivatives due to spot foreign exchange and fair value hedge adjustments.

<sup>3</sup>Strip out accreted indexation of index linked derivatives included in the regulatory definition but classified as derivatives under IFRS

<sup>4</sup>Directly attributable debt issue costs added to the reflect IFRS treatment but excluded from the regulatory definition.

<sup>5</sup>Under the RAGs, debt is shown excluding accrued interest. Under IFRS, debt is shown including accrued interest.

**2** Debt balances have decreased significantly in the year as a consequence of an equity injection of £1,165 million in order to reduce gearing in AWS. Fixed rate debt decreased year on year mainly due to the repayment of \$617 million (£391 million equivalent) Class B debt and the repayment of £25 million previously drawn on the RCF facility (which was categorised as fixed rate in the prior year).

**3** Floating rate debt decreased marginally year on year due to the scheduled repayment of the US\$160 million 4.52 per cent private placement debt, that had been principally converted to floating rate debt, offset by the issue of £100.5 million of new debt.

**4** RPI Index linked debt increased as a result of £206.2 million of indexation in the year, partially offset by amortisation paydowns on EIB debt of £68.5 million. There has been no new inflation linked debt in the year.

**5** CPI Index linked debt increased due to £48.8 million of indexation in the year. Reclassifications between the debt categories during the year impacted the individual closing positions by category. The net impact of the reclassifications was not material across the portfolio.

### Cash and short term deposits (1E.4 - 1E.5)

**6** Cash and short-term deposits are split as per RAG 4.10. This differs from the statutory accounting treatment in that all money market deposits are shown as short-term deposits here, whereas in the statutory accounts these are split based on their original term to maturity with those with an initial term of 3 months or less classified as cash and cash equivalents.

### Adjusted gearing (1E.8)

**7** The Adjusted Gearing calculation, which is used for covenant compliance purposes, is slightly lower than the Gearing calculation for two reasons. Firstly, because the lease debt number is based on a different calculation methodology. Secondly, the RCV used for the Adjusted Gearing calculation is Anglian Water's calculation, since Anglian Water believes that the Ofwat calculation methodology does not fully reflect RPI indexation of the RPI linked part of RCV at 31 March 2022 and that therefore the Ofwat RCV number is understated.

### Interest (1E.9 - 1E.12)

**8** In the prior year, RAG 4.09 required that derivatives and related debt be combined into a single line, and where necessary, that nominal rates in the derivative instruments be converted to real rates for the purpose of combining them with the related debt.

**9** This approach is not required this year, rather RAG 4.10 requires full disclosure in respect of Anglian Water's derivative portfolio, with both legs shown in Table 4B.

**10** In order to provide full derivative disclosure, and as agreed with Ofwat, Anglian Water have included only index linked debt or the payment leg of index linked derivatives in the Index Linked Debt sections, with the floating receipt leg shown within the relevant other debt category. The same approach has been used for floating rate and fixed rate debt.

**11** This change of approach between years means that there will be some differences in the results within debt categories across the years, but total results should not be materially impacted by this.

**12** Full year cash equivalent interest is lower in 2022. This is the result of the equity injection to Anglian Water during the year, which enabled debt to be repaid as described above. In addition, facility fees, included in interest last year, are included as memorandum items only this year.

**13** Full year equivalent nominal interest cost for CPI and RPI debt are significantly increased this year as a result of much higher inflation rates.

### Weighted average years to maturity (1E.13)

**14** In the prior year Anglian Water reported post swap debt figures in accordance with RAG 4.09 and the weighted average maturity calculation was based on that derivative adjusted classification. This year, in line with RAG 4.10, the maturity date used is based on the debt instrument classification. This means that there will be differences in the year on year weighted averages within debt categories, but overall weighted averages should not be materially impacted by this. The minor difference between overall weighted average maturity between Table 4B and Table 1E is due to the inclusion of derivative accretion in Table 4B which is not included in Table 1E as per the RAG.

**Table 1F - Financial Flows**

		12 months ended 31 March 2022					
Line description		Notional returns and notional regulatory equity	Actual returns and notional regulatory equity	Actual returns and actual regulatory equity	Notional returns and notional regulatory equity	Actual returns and notional regulatory equity	Actual returns and actual regulatory equity
		Units	%		£m		
Regulatory equity							
1	Regulatory equity	3,090	3,090	2,045	-	-	
Return on regulatory equity							
2	Return on regulatory equity	4.37%	2.89%	4.37%	135.038	89.352	89.352
Financing							
3	Impact of movement from notional gearing	-	1.478%	0.720%	-	45.686	14.716
4	Gearing benefits sharing	-	0.000%	0.000%	-	0.000	0.000
5	Variance in corporation tax	-	0.652%	0.985%	-	20.146	20.146
6	Group relief	-	0.000%	0.000%	-	0.000	0.000
7	Cost of debt	-	-2.259%	-3.948%	-	-69.798	-80.714
8	Hedging instruments	-	0.000%	0.000%	-	0.000	0.000
9	Return on regulatory equity including Financing adjustments	4.37%	2.76%	2.13%	135.038	85.387	43.501
Operational Performance							
10	Totex out / (under) performance	-	0.75%	1.14%	-	23.244	23.244
11	ODI out / (under) performance	-	-0.39%	-0.59%	-	-12.164	-12.164
12	C-Mex out / (under) performance	-	0.04%	0.06%	-	1.127	1.127
13	D-Mex out / (under) performance	-	0.04%	0.06%	-	1.175	1.175
14	Retail out / (under) performance	-	0.49%	0.73%	-	15.000	15.000
15	Other exceptional items	-	0.00%	0.00%	-	0.000	0.000
16	Operational performance total	-	0.92%	1.39%	-	28.382	28.382
17	RoRE (return on regulatory equity)	4.37%	3.68%	3.52%	135.038	113.769	71.883
18	RCV growth	7.26%	7.26%	7.26%	224.343	224.343	148.443
19	Voluntary sharing arrangements	-	0.00%	0.00%	-	0.000	0.000
20	Total shareholder return	11.63%	10.94%	10.78%	359.381	338.112	220.326

Line description	12 months ended 31 March 2022					
	Notional returns and notional regulatory equity	Actual returns and notional regulatory equity	Actual returns and actual regulatory equity	Notional returns and notional regulatory equity	Actual returns and notional regulatory equity	Actual returns and actual regulatory equity

	Units	%			£m		
Dividends							
21	Gross Dividend	3.18%	2.48%	3.74%	98.266	76.498	76.498
22	Interest Receivable on Intercompany loans	-	0.00%	0.00%	-	0.000	0.000
23	Retained Value	8.45%	8.47%	7.03%	261.115	261.614	143.828

<b>Cash impact of 2015-20 performance adjustments</b>						
24	Totex out / under performance	-	-0.61%	-0.92%	-	-18.812
25	ODI out / under performance	-	1.09%	1.65%	-	33.810
26	Total out / under performance	-	0.49%	0.73%	-	14.998

Line description	Average 2020-25					
	Notional returns and notional regulatory equity	Actual returns and notional regulatory equity	Actual returns and actual regulatory equity	Notional returns and notional regulatory equity	Actual returns and notional regulatory equity	Actual returns and actual regulatory equity

		Units	%			£m	
Regulatory equity							
1	Regulatory equity	3,056	3,056	1,684	-	-	-

<b>Return on regulatory equity</b>						
2 Return on regulatory equity	4.35%	2.40%	4.35%	132.953	73.264	73.264

<b>Financing</b>						
3 Impact of movement from notional gearing	-	1.95%	1.13%	-	14.298	14.298
4 Gearing benefits sharing	-	0.00%	0.00%	-	-2.341	-2.341
5 Variance in corporation tax	-	0.49%	0.74%	-	0.564	0.564
6 Group relief	-	0.00%	0.00%	-	0.588	0.588
7 Cost of debt	-	-1.66%	-3.08%	-	3.650	3.650
8 Hedging instruments	-	-0.01%	-0.01%	-	0.252	0.252

9 Return on regulatory equity including Financing adjustments	4.35%	3.18%	3.13%	132.953	96.665	48.325
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<b>Operational Performance</b>						
10 Totex out / (under) performance	-	0.46%	0.70%	-	14.298	14.298
11 ODI out / (under) performance	-	-0.08%	-0.11%	-	-2.341	-2.341
12 C-Mex out / (under) performance	-	0.02%	0.03%	-	0.564	0.564
13 D-Mex out / (under) performance	-	0.02%	0.03%	-	0.588	0.588
14 Retail out / (under) performance	-	0.12%	0.18%	-	3.650	3.650
15 Other exceptional items	-	0.01%	0.01%	-	0.252	0.252
16 Operational performance total	-	0.55%	0.83%	-	17.010	17.010

17 RoRE (return on regulatory equity)	4.35%	3.73%	3.96%	132.953	113.675	65.335
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18 RCV growth	-	4.16%	4.16%	127.146	127.146	70.064
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19 Voluntary sharing arrangements	-	0.00%	0.00%	-	0.000	0.000
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20 Total shareholder return	8.51%	7.89%	8.12%	260.100	240.821	135.399
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Line description	Average 2020-25					
	Notional returns and notional regulatory equity	Actual returns and notional regulatory equity	Actual returns and actual regulatory equity	Notional returns and notional regulatory equity	Actual returns and notional regulatory equity	Actual returns and actual regulatory equity

	Units	%			£m	
<b>Dividends</b>						
21 Gross Dividend		3.18%	1.25%	2.27%	97.193	38.249
22 Interest Receivable on Intercompany loans		-	0.00%	0.00%	-	0.000
23 Retained Value		5.33%	6.63%	5.85%	162.906	202.572

<b>Cash impact of 2015-20 performance adjustments</b>						
24 Totex out / under performance		-	-0.42%	-0.75%	-	-12.693
25 ODI out / under performance		-	0.75%	1.35%	-	22.813
26 Total out / under performance		-	0.33%	0.60%	-	10.120

## Footnotes

1. Numbers included in the above table are in 2017/18 prices in line with Ofwat Regulatory Accounting Guidelines (RAGs).
2. The numbers in the percentage column above are subject to rounding difference as a result of the way that the percentages are calculated in the Ofwat table templates. These differences do not have a material impact on the numbers presented.

## Attracting investment and sharing the rewards

**1** Our position as a monopoly provider of essential public services makes it essential that we maintain the trust and confidence of our customers while providing fair returns to our shareholders. Table '1F Financial Flows' compares the base return set in the Final Determination with actual performance in the period providing greater transparency to our stakeholders on how the company earns its returns and what is ultimately earned by investors.

**2** Profits are essential to attract private investment, as customers' bills alone could only fund a fraction of what we invest each year. Private investment also effectively spreads the cost of extending and improving our assets over their operational life. In this way, tomorrow's customers pay for tomorrow's use of the asset.

**3** We have to provide investors with a reasonable return on their investment. We also believe excellent performance should be reflected in higher profits. However, profits can rise or fall due to factors not directly related to excellent performance — for instance, the level of interest rates, the rate of inflation or unexpected new legal obligations.

**4** The money we can raise from bills, along with how much we are allowed to invest in our service, is decided every five years through Ofwat's price-setting process and set out in our Final Determination. Any regulated wholesale revenue raised over and above the agreed amount is returned to customers through something called the revenue correction mechanism. Any profits, and returns to investors, that we make in excess of those derived from allowed pricing come from:

- increasing efficiency — running the business more cost-effectively than was funded at the time of the Final Determination
- any rewards for meeting our performance commitment targets.
- Efficiencies are either reinvested to improve service for customers or shared with customers, helping to keep bills down.

**5** The table is split into two sections, current year and AMP average. Each has three columns, the first shows the notional return as a percentage of notional equity (40 per cent of RCV). The next two columns show actual returns against both notional and actual regulated equity. Where actual regulated equity is different from Ofwat's notional regulated equity the two columns will show different percentage returns for the same performance. In our case, as a consequence of having higher gearing and less regulated equity than the notional company, any underperformance will adversely impact returns disproportionately for shareholders. Conversely, any outperformance will deliver proportionately greater returns.

### Key messages

- Company financial restructure completed which saw an equity injection of more than £1 billion into Anglian Water, reducing gearing to 65 per cent (31 March 2021: 82 per cent)
- High inflation has impacted both operating and interest costs as well as growth in RCV
- Challenging year for performance against regulatory commitments resulting in net ODI penalty

### Return on regulatory equity

**6** This reflects the return set by the CMA in their redetermination.

### Financing

**7** This section combines the impacts of our financing arrangements with tax performance. The table calculates a gearing out performance reflecting the difference between our actual structure and the notional structure in which funding is set. As mentioned above, £1,165 million was injected into the company in July 2021, reducing gearing to 65 percent at 31 March 2022. Given the timing of the restructure a weighted average net debt has been used in the calculations for the current year as management believe this represents a more appropriate method of calculating the average.

**8** Our cost of debt out performance in the period reflects the impact of high inflation which, whilst increasing our nominal cost of debt, is used as the deflator when comparing to the real rate set in the Final Determination.

**9** Ofwat sets allowed returns at a fixed real rate plus inflation. This means that when inflation out-turns at a significantly lower rate than assumed at a price determination, this can reduce returns to investors. Conversely, when inflation out-turns at a higher rate, as is the case this year, it can benefit our investors.

**10** However, the driving factors behind that high inflation mean the true picture is far more complicated. The current high inflation (CPIH, or Consumer Price Index including Housing) is driven in part by high energy prices. CPIH is calculated by using the change in costs of a range of items (basket of goods), plus the cost of owning and maintaining a home. As a high consumer of energy, our business is more exposed to energy prices than is reflected in the CPIH basket, and we have to manage this through our hedging strategy.

**11** The current tax credit reflects losses to be surrendered to other group companies. The tax losses arise mainly because capital allowances exceed the depreciation charged in the accounts, as well as some income not being taxable and the availability of tax relief on pension contributions paid in the year. The Final Determination provided a tax allowance in relation to retail profits with wholesale tax losses being carried forward to future years.

## Operational Totex

**12** Totex is a sector wide term used to combine operating costs (Opex) and capital expenditure (Capex). 2021/22 is the second year in the five-year AMP7 investment programme. Over the five years to 2025, we will invest a record £3 billion through our capital investment programme (Capex). This spend will help us achieve our Business Plan commitments and includes significant investments to ensure our region is resilient to the impacts of drought, climate change and population growth, alongside our largest ever programme of schemes delivering environmental protection.

**13** Delivery against this investment programme remains strong despite global challenges with gross annual Capex across the appointed business increasing from £447.0 million to £577.7 million (£269.3 million on capital maintenance, £308.4 million on capital enhancement).

**14** The outperformance included in table 1F is calculated from table 4C after accounting for timing of delivery and shows we are delivering broadly in line with our Totex allowance for the AMP to date. As a business, like others we have been affected by global challenges which has impacted the timing of our delivery, in particular:

- Brexit – primarily affecting the labour market and availability of key resources such as HGV drivers
- Economic recovery post pandemic – primarily affecting availability of key components such as semi-conductors
- Conflict in Ukraine – primarily affecting the investment programme because of lack of availability of raw materials such as steel

**15** As set out in table 4C for our Wastewater Network + business stream our AMP to date position is estimated to be £100 million behind the FD allowance. This is primarily due to deferment within the AMP of growth expenditure at water recycling treatment plants, as we expect this to be recovered during the rest of the AMP, it has been included as timing differences.

**16** Management have put in place mitigating actions in relation to these challenges in order to ensure we deliver in line with what was set out in the Final Determination by the end of the AMP.

## ODI

**17** We measure our performance against a set of commitments that help us, our regulators and our customers understand the progress we're making and what we've delivered.

**18** This year (2021/22) is the second of our current five-year regulatory cycle (also known as AMP7, as it is the seventh asset management period since privatisation in 1989). Our performance is measured against a suite of stretching targets known as Performance Commitments (PCs) and is agreed with Ofwat.

**19** Following a strong year in 2020/21, in which we were named as a sector-leading company by Ofwat in its Service Delivery Report, this year has been more challenging. While we've achieved strong performance in many areas (notably ahead of target delivery of environmental programmes, world-class leakage reduction, and £32 million of support for almost 325,000 customers facing affordability challenges), we have not reached our targets for some key commitments.

**20** We were undoubtedly impacted by the exceptional flooding and wet weather late in the winter of 2020/21. It was localised, very intense and prolonged. We made decisions that prioritised customers – including pumping out sewers so that customers could shower and flush their toilets, at a point in time when lockdown prevented them going anywhere else.

**21** The consequences of these difficult decisions have resulted in a knock-on impact which has lasted well into the 2021/22 financial year and resulted in a net ODI penalty.

## Retail

**22** The retail outperformance is a result of a reduction in our bad debt charge. This is due to the utilisation of part of the Covid-19 provision recorded in the prior year and strong cash collection. We have however increased our base provision in anticipation of higher bad debts in the coming years due to the cost of living crisis.

## Total Returns and dividends

**23** We have to provide investors with a reasonable return on their investment ensuring a fair balance between risk and reward. During the price review this notional return is set and forms part of the Final Determination. As mentioned, companies have opportunities to earn additional returns through both operational and financial performance, the converse is also true. This return can then be paid to shareholders through dividends or reinvested within the business.

**24** A £96.3 million (2022 prices) prior year final dividend, which includes £13.3 million from the non-appointed business unit, was paid in the period (2021: £nil), reflecting the company's dividend policy having regard to Anglian Water's purpose and duties under the company's Articles of Association. In line with the dividend policy on page 296, a final dividend of £169.0 million (2022 prices) in relation to 2021/22 was paid in June 2022. A deduction of £9.0 million has been made to reflect the outcome delivery incentives (ODI) penalty in the period. This decision is in combination with an equity injection of £1,165.0 million in the period and results in a net equity injection for the AMP of £899.7 million. Through these capital injections the company continues to benefit from the strong support of shareholders. It is proposed that our ultimate shareholders will, for the first time since 2017, receive a dividend: £91.8 million.

## Table 2A - Segmental Income Statement

[illegible]

## **Revenue (2A.1 and 2A.2)**

**1** Total revenue for the year was £1,276.0 million, up £18.7 million (1.5 per cent) on last year, which is explained in table 1A commentary. Non-price control revenue is in line with revenue for 2020/21.

## **Operating expenditure, depreciation and amortisation (2A.3 / 2A.6 / 2A.7)**

**2** Operating costs of £942.0 million comprise operating expenditure of £608.3 million and depreciation (including amortisation) of £333.7 million (including the impact of the PU recharge). The increase in opex costs is explained in the commentary to table 1A.

**3** The difference in the opex figure reported in table 2A and the opex figure and that reported in 1A is as a result of retail pension deficit repair costs, £1.7 million (2C.20) and developer services non price control totex, £5.5 million (4P.4) which have been included as opex for the purposes of section 2 tables and subsequent section 4 tables as per Ofwat guidance.

## **PU opex recharge (2A.4)**

**4** This is the recharge of depreciation on assets used by multiple price controls, primarily shared information technology and vehicle assets. As the business unit of principal use, Wastewater Network+ incurs the gross depreciation charge for these shared assets in the first instance. The calculation of the recharges between price controls uses the same allocation used for information services operating expenses under the assumption that this closely equates to the number of personnel in each area and therefore asset users. There has been a £1.9 million decrease in total recharges mainly due to the absence of a charge in 2021/22 for shared software assets previously allocated to Wastewater Network+ which were reclassified under the 2021 IFRS Interpretations Committee (IFRIC) agenda decision which clarified the accounting treatment of configuration costs for software provided as a service (SaaS).

## **Other operating income (2A.8)**

**5** Represents the profit on disposal of fixed assets which was £3.4 million higher than the previous year due to an increase in number of land and vehicle disposals completed in the current year.

## **Surface water drainage rebates (2A.10)**

**6** The value of surface water drainage rebates has risen slightly this year. It remains in line with historic rates.

**Table 2B - Totex Analysis - Wholesale**

Line description	Units	Water resources	Water Network+	Wastewater Network+	Bioresources	Additional Control	Total
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Base operating expenditure							
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1	Power	£m	8.608	26.527	41.268	0.584	-	76.987
2	Income treated as negative expenditure	£m	(0.087)	(0.393)	(2.002)	(8.382)	-	(10.865)
3	Abstraction charges/ discharge consents	£m	10.109	0.489	8.332	0.146	-	19.075
4	Bulk Supply/Bulk discharge	£m	-	2.418	-	-	-	2.418
5	Renewals expensed in year (Infrastructure)	£m	-	33.471	19.449	-	-	52.919
6	Renewals expensed in year (Non-Infrastructure)	£m	-	-	-	-	-	-
7	Other operating expenditure	£m	16.035	102.215	116.920	74.398	-	309.567
8	Local authority and Cumulo rates	£m	2.887	37.852	19.967	3.123	-	63.829
9	Total base operating expenditure	£m	37.551	202.579	203.932	69.870	-	513.932

Other operating expenditure							
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10	Enhancement operating expenditure	£m	2.063	7.879	4.799	-	-	14.741
11	Developer services operating expenditure	£m	-	2.729	4.082	-	-	6.811
12	Total operating expenditure excluding third party services	£m	39.614	213.187	212.813	69.870	-	535.484
13	Third party services	£m	2.355	8.382	0.821	0.337	-	11.894
14	Total operating expenditure	£m	41.969	221.568	213.634	70.207	-	547.378

Grants and contributions							
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15	Grants and contributions - operating expenditure	£m	-	-	-	-	-	-
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Capital expenditure							
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16	Base capital expenditure	£m	3.939	85.358	143.328	18.240	-	250.865
17	Enhancement capital expenditure	£m	5.986	122.190	119.098	0.067	-	247.341
18	Developer services capital expenditure	£m	-	54.438	11.789	-	-	66.227
19	Total gross capital expenditure (excluding third party)	£m	9.925	261.986	274.215	18.307	-	564.433
20	Third party services	£m	0.326	0.649	0.178	0.017	-	1.170
21	Total gross capital expenditure	£m	10.251	262.635	274.393	18.324	-	565.603



<b>Grants and contributions</b>							
22	Grants and contributions - capital expenditure	£m	-	35.015	25.951	-	60.966
23	Net totex	£m	52.220	449.188	462.076	88.531	1,052.015
<b>Cash expenditure</b>							
24	Pension deficit recovery payments	£m	0.596	4.997	5.107	2.171	12.871
25	Other cash items	£m	-	-	-	-	-
26	Totex including cash items	£m	52.816	454.185	467.183	90.702	1,064.886

**1** Total operating costs were £547.4 million, an increase of £6.1million in real terms on the previous report year.

**2** Wholesale regulated capital expenditure for 2021/22 was £565.6 million, split between water £271.2 million and wastewater £294.4 million.

### Change in operating expenditure compared to 2020/21

**3** Water services operating expenditure increased by £8.8 million (3.4 per cent) in real terms against an underlying baseline. Wastewater costs decreased by £2.8 million post principle use asset charge (PUAC) which is 1 per cent reduction however, pre PUAC costs increased by £14.6m (5 per cent) in real terms.

### Movement in costs 2020/21 to 2021/22

	<b>Water</b> £m	<b>Wastewater</b> £m	<b>Total</b> £m
<b>2020/21 reported total operating expenditure</b>	<b>245.6</b>	<b>276.5</b>	<b>522.1</b>
Atypical restructuring costs	0	0	0
Underlying operating costs 2020/21	245.6	276.5	522.1
Inflation @ 3.674%	9.1	10.2	19.2
<b>2020/21 underlying costs indexed to 2021/22 prices</b>	<b>254.7</b>	<b>286.6</b>	<b>541.3</b>
<b>2021/22 total operating expenditure</b>	<b>263.5</b>	<b>283.8</b>	<b>547.4</b>
<b>(Increase)/decrease in underlying expenditure from 2020/21</b>	<b>(8.8)</b>	<b>2.8</b>	<b>6.1</b>

### Operating expenditure

### Key variances in underlying costs (real terms)

#### Water

**4** Total operating expenditure was £8.8 million higher than the prior year with a £4.7 million increase in Water Resources and £7.8m increase in Water Treatment compared to 2020/21. This is a consequence of additional expenditure relating to Software as a Service and PUAC, both of which are new in 2021/22 following revisions to accounting policies. These increases have been partially offset by lower operational costs following a reduction in distribution input.

**5** Operating expenditure in Treated Water Distribution reduced by £2.5 million compared to the prior year. As per the above, increased costs were evident as a result of Software as a Service and Principal Use of Asset charges alongside increased spend to improve leakage performance. These increases were more than offset by the impact of capitalising expenditure relating to the replacement of stop taps in 2021/22 which, in contrast, was recognised as operating expenditure in 2020/21.

#### Wastewater

**6** Total operating costs were £2.8 million lower than the prior year in real terms, however this included a reduction of £17.4m in relation to adjustments required as a result of PUAC not reflected in previous year. On a like for like basis, real term costs increased by £14.6m with collection costs decreasing by £4 million in real terms pre PUAC (£13.2m post PUAC), as a result of local cost efficiency programmes, and a reduction in the high operating costs during the prolonged heavy rainfall from the previous year. Total sewage treatment costs increased by £5.7 million in real terms pre PUAC (£8.7m reduction post PUAC), due to challenges around maintaining compliance.

**7** Bioresources costs increased by £12.9 million in real terms pre PUAC (£18.8m post PUAC), a proportionately larger increase than the rest of wastewater services, some of this due to returning to normal costs level after one off benefits in 2019/20; however temporary closure of Great Billing STC for refurbishment and Farming Rules for Water had a large cost impact in the year.

#### **8** Capital expenditure

**9** The figures presented relate to all our regulated capital investment in wholesale services. Total gross capital expenditure for the year was £565.6 million.

**10** Where possible, capital expenditure is allocated directly to the applicable price control. Where this is not possible because use of the asset is shared between two or more price controls (for example with capital expenditure on shared information systems, central offices and vehicles used by support services), expenditure is allocated to the price control of principal use and a subsequent recharge of the relevant depreciation charge is made between price controls.

**11** Total capital expenditure includes £1.2 million of spend on assets used to fulfil third-party agreements.

#### Cash expenditure

**12** The only cash expenditure incurred that is not included in our operating cost totals relates to pension deficit payments. The total paid in the year was £14.6 million, of which £12.9 million was in relation to wholesale.

**Table 2C - Operating Cost Analysis - Retail**

	Line description	Units	Residential	Business	Total
	<b>Operating expenditure</b>				
1	Customer services	£m	14.497	-	14.497
2	Debt management	£m	8.863	-	8.863
3	Doubtful debts	£m	11.114	-	11.114
4	Meter reading	£m	3.521	-	3.521
5	Services to developers	£m	-	-	-
6	Other operating expenditure	£m	16.330	-	16.330
7	Local authority and Cumulo rates	£m	0.166	-	0.166
8	Total operating expenditure excluding third party services	£m	54.491	-	54.491
	<b>Depreciation</b>				
9	Depreciation on tangible fixed assets existing at 31 March 2015	£m	0.020	-	0.020
10	Depreciation on tangible fixed assets acquired after 1 April 2015	£m	0.132	-	0.132
11	Amortisation on intangible fixed assets existing at 31 March 2015	£m	-	-	-
12	Amortisation on intangible fixed assets acquired after 1 April 2015	£m	1.808	-	1.808
	<b>Recharges</b>				
13	Recharge from wholesale for legacy assets principally used by wholesale (assets existing at 31 March 2015)	£m	0.643	-	0.643
14	Income from wholesale for legacy assets principally used by retail (assets existing at 31 March 2015)	£m	0.007	-	0.007
15	Recharge from wholesale assets acquired after 1 April 2015 principally used by wholesale	£m	4.052	-	4.052
16	Income from wholesale assets acquired after 1 April 2015 principally used by retail	£m	-	-	-
17	Net recharges costs	£m	4.688	-	4.688
18	Total retail costs excluding third party and pension deficit repair costs	£m	61.139	-	61.139
19	Third party services operating expenditure	£m	-	-	-
20	Pension deficit repair costs	£m	1.731	-	1.731
21	Total retail costs including third party and pension deficit repair costs	£m	62.870	-	62.870

	Line description	Units	Residential	Business	Total
<b>Debt written off</b>					
22	Debt written off	£m	8.314	-	8.314
<b>Capital expenditure</b>					
23	Capital expenditure	£m	6.500	-	6.500
<b>Other operating expenditure includes the net retail expenditure for the following household retail activities which are part funded by wholesale</b>					
24	Demand-side water efficiency - gross expenditure	£m	1.275		
25	Demand-side water efficiency - expenditure funded by wholesale	£m	-		
26	Demand-side water efficiency - net retail expenditure	£m	1.275		
27	Customer-side leak repairs - gross expenditure	£m	1.211		
28	Customer-side leak repairs - expenditure funded by wholesale	£m	-		
29	Customer-side leak repairs - net retail expenditure	£m	1.211		
<b>Comparison of actual and allowed expenditure</b>					
30	Cumulative actual retail expenditure to reporting year end	£m	142.715		
31	Cumulative allowed expenditure to reporting year end	£m	155.481		
32	Total allowed expenditure 2020-25	£m	396.831		

**1** Total operating expenditure was £54.5 million, a headline decrease of £19.3 million (26 per cent) on the previous report year but a real terms decrease of £6.8 million (9 per cent) after adjusting for atypical transactions.

**2** The reported total retail costs excluding third party and pensions of £61.1 million is £17.0 million favourable to the amount allowed for retail costs at PR19 of £78.1 million (at 2017/18 prices). This is due to the reduced cost of customer debt.

**3** Recharges of costs from other business units of £4.7 million reflects the recharge of IT systems for the business unit of principle use of wastewater.

**4** Pension deficit repair costs of £1.7 million reflects the share of our total deficit repair payment attributable to the retail price control.

**5** Household retail capex was £6.5 million, primarily in support of our smart metering programme and also enhanced customer data and exploitation.

**6** Demand side water efficiency costs were in line with the prior year and customer side leak repairs were slightly lower at £1.2m compared to £1.4m in the prior year.

**7** Allowed expenditure (2C.31 and 2C.32). The outperformance of £12.7 million is largely due to customer debt costs being lower than allowed, but this is atypical due to the write back of provisions taken at the end of the previous AMP. The charge for depreciation is also less than allowed.

**8** The reforecast of customer numbers for the remaining years of the AMP is based on an interpolation of the ONS and Local Authority Plan data. This bridges from the actual customer numbers reported for 2021/22 to the forecast being prepared for WRMP24.

**9** Total household customers increased by c.38,000 in the year (1.3 per cent).

#### **Movement in retail operating costs costs 2020/21 to 2021/22**

	<b>Total £m</b>
2020/21 total reported operating expenditure	73.8
<b>2021/22 reported operating expenditure</b>	54.5
Atypical doubtful debt provision releases and provision rate changes	12.6
Underlying operating expenditure	67.1
<b>Decrease in underlying retail operating expenditure</b>	6.8

#### **Key variances (real terms)**

**10** The underlying reduction in total operating expenditure of £19.3 million from the prior year is due to the reduction in doubtful debt costs of £20.0 million offset by net increases in other areas of £0.6 million (total of these two items different due to rounding). The reduction in customer debt charge is largely driven by two atypical provision releases totalling £12.6 million with the balance of £7.4 million due to strong underlying cash collection performance across all ages of customer debt. The atypical releases consist of £6.6 million in provision taken against the expected impact from Covid-19 on customers' ability to pay and this provision is no longer required. We also reviewed our provision rates applicable to debt over four years old. This debt had previously been provided for at 100 per cent, but our experience is that we continue to collect cash even on this older debt. The outcome of the review means we now provide 100 per cent on debt only when it has reached six years old, and as a result, we were able to release £6.0 million in provision relating to debt between four and six years.

#### **Debt written off**

**11** Total household debt written off was £8.3 million, a decrease of £1.1 million over the prior year write offs of £9.4 million. Our write off policy has not changed in the year and the decrease seen in total write offs is due to fewer customer accounts meeting our ageing threshold and other criteria for assessing that collection is deemed highly unlikely or is uneconomic to pursue (e.g. old, small account balances or insolvencies).

**Table 2D - Historic Cost Analysis of Tangible Fixed Assets - Wholesale and Retail**

	Line description	Units	Residential Retail	Business Retail	Water resources	Water Network+	Wastewater Network+	Bioresources	Additional Control	Total
<b>Cost</b>										
1	At 1 April 2021	£m	10.575	-	331.556	5,835.966	7,501.633	749.375	-	14,429.105
2	Disposals	£m	(0.116)	-	(0.234)	(18.481)	(9.204)	(3.539)	-	(31.574)
3	Additions	£m	(0.254)	-	7.200	260.017	237.944	12.023	-	516.930
4	Adjustments	£m	-	-	-	-	-	-	-	-
5	Assets adopted at nil cost	£m	-	-	-	-	39.161	-	-	39.161
6	At 31 March 2022	£m	10.205	-	338.522	6,077.502	7,769.534	757.859	-	14,953.622
<b>Depreciation</b>										
7	At 1 April 2021	£m	(9.062)	-	(101.800)	(1,612.023)	(2,586.602)	(431.749)	-	(4,741.236)
8	Disposals	£m	0.116	-	0.170	18.375	9.145	3.385	-	31.191
9	Adjustments	£m	-	-	-	-	-	-	-	-
10	Charge for year	£m	(0.152)	-	(8.910)	(117.907)	(148.187)	(23.086)	-	(298.242)
11	At 31 March 2022	£m	(9.098)	-	(110.540)	(1,711.555)	(2,725.644)	(451.450)	-	(5,008.287)
12	Net book amount at 31 March 2022	£m	1.107	-	227.982	4,365.947	5,043.890	306.409	-	9,945.335
13	Net book amount at 1 April 2021	£m	1.513	-	229.756	4,223.943	4,915.031	317.626	-	9,687.869
<b>Depreciation charge for year</b>										
14	Principal services	£m	(0.152)	-	(8.910)	(117.877)	(148.187)	(23.086)	-	(298.212)
15	Third party services	£m	-	-	-	(0.030)	-	-	-	(0.030)
16	Total	£m	(0.152)	-	(8.910)	(117.907)	(148.187)	(23.086)	-	(298.242)

**1** The net book amount includes £612.4 million in respect of assets in the course of construction, £212.9 million of adopted assets and £2,910.9 million of revaluation of assets undertaken 1 April 2013. Adopted asset additions increased from £29.3 million in 2020/21 to £39.2 million in 2021/22 in line with an increase in number and size of development mains vestings during the year. The adopted values at each site vary depending on the pipe diameter, material, depth and length and are vested by Anglian Water according to when developers complete the mains.

**2** Table 2D excludes intangible assets with a net book amount at 31 March 2022 of £205.7 million (31 March 2021: £243.9 million) as shown in table 2O. Additions have increased during 2021/22 in line with expectations of the rise in capital expenditure according to the business plan.

**3** Following the adoption of the lease treatment standard IFRS 16 with effect from 1 April 2019, new leases form a net increase to cost of £8.4 million during the year, of which £4.5 million relates to a new warehouse facility. The net book amount of tangible assets includes £34.8 million (31 March 2021: £31.2 million) of lease assets which would not have been included in tangible assets but for the adoption of IFRS 16.

**4** The depreciation charge for third party services relates to fluoridation and some reverse osmosis assets. None of our other third party expenditure is incurred on assets used solely for the fulfilment of third party agreements. As such all other third party expenditure is included within the principal services asset values.

### **Assumptions used**

**5** In accordance with RAG 2.09, section 2.6, where assets are used by more than one business unit, these have been reported in full in the business unit of principal use. A recharge based on depreciation is made between business units to account for the use of these assets by the non-principal user(s).

**6** Due to the above, the majority of management and general assets have been assigned to wastewater network+ as the largest business stream except where the asset has been identified as relating principally to another business stream or retail operations. It is also common for general use assets, such as vans, to be allocated to a specific business unit one year but then moved to another in a subsequent year. In these cases the relevant cost and depreciation movements are reflected within the current year additions and depreciation charge. A consequence of this approach is the negative additions amount in Residential Retail during 2021/22 where more was moved to another business unit than was newly purchased in the year.

**7** An offline assessment is made to determine whether assets are solely wholesale, solely retail or shared between the two.



**Table 2E - Analysis of grants and contributions**

	Line description	Units	Fully recognised in income statement	Capitalised and amortised (in income statement)	Fully netted off capex	Total
<b>Grants and contributions - water resources</b>						
1	Diversions - s185	£m	-	-	-	-
2	Other contributions (price control)	£m	-	-	-	-
3	Price control grants and contributions	£m	-	-	-	-
4	Diversions - NRSWA	£m	-	-	-	-
5	Diversions - other non-price control	£m	-	-	-	-
6	Other contributions (non-price control)	£m	-	-	-	-
7	Total grants and contributions	£m	-	-	-	-
8	Value of adopted assets	£m	-	-	-	-
<b>Grants and contributions - water network+</b>						
9	Connection charges	£m	15.351	-	-	15.351
10	Infrastructure charge receipts	£m	10.636	-	-	10.636
11	Requisitioned mains	£m	3.716	-	-	3.716
12	Diversions - s185	£m	2.695	-	-	2.695
13	Other contributions (price control)	£m	-	-	-	-
14	Price control grants and contributions before deduction of income offset	£m	32.398	-	-	32.398
15	Income offset	£m	3.483	-	-	3.483
16	Price control grants and contributions after deduction of income offset	£m	28.915	-	-	28.915
17	Diversions - NRSWA	£m	1.768	-	-	1.768
18	Diversions - other non-price control	£m	0.023	-	-	0.023
19	Other contributions (non-price control)	£m	4.309	-	-	4.309
20	Total grants and contributions	£m	35.015	-	-	35.015
21	Value of adopted assets	£m	-	-	-	-

Line description	Units	Fully recognised in income statement	Capitalised and amortised (in income statement)	Fully netted off capex	Total
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**Grants and contributions - wastewater network+**

22	Receipts for on-site work	£m	4.595	-	-	4.595
23	Infrastructure charge receipts	£m	12.929	-	-	12.929
24	Diversions - s185	£m	0.330	-	-	0.330
25	Other contributions (price control)	£m	4.175	-	-	4.175
26	Price control grants and contributions before deduction of income offset	£m	22.029	-	-	22.029
27	Income offset	£m	-	-	-	-
28	Price control grants and contributions after deduction of income offset	£m	22.029	-	-	22.029
29	Diversions - NRSWA	£m	3.814	-	-	3.814
30	Diversions - other non-price control	£m	0.017	-	-	0.017
31	Other Contributions (non-price control)	£m	0.091	-	-	0.091
32	Total grants and contributions	£m	25.951	-	-	25.951

33	Value of adopted assets	£m	39.161	-	-	39.161
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Line description	Units	Water resources	Water network+	Wastewater network+	Total
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**Movements in capitalised grants and contributions**

34	b/f	£m	-	-	-	-
35	Capitalised in year	£m	-	-	-	-
36	Amortisation (in income statement)	£m	-	-	-	-
37	c/f	£m	-	-	-	-

**Grants and contributions - Water resources**
**1 No water resources income in 2021/22**

## **Grants and contributions - Water Network+**

### **Connection charges (2E.9) - Connection charges**

**2** Connection charges increased in 2021/22 driven by an increase in the number of connections delivered in comparison to 2020/21. Contributions for on-site work have also increased significantly due to a post Covid catch-up related to pent up demand.

### **Diversions - NRSWA (2E.17)**

**3** This income represents contributions from all water diversion schemes applied for under NRSWA, it includes roads such as the A14, NW relief road, A47, A12 and Saden Road.

### **Other contributions (non-price control) (2E.19)**

**4** Other contributions (non-price control) includes £3.4 million for reinforcement works to supply water to HS2 contractors and £0.6 million contributions for a fluoridation project from one developer customer.

## **Grants and contributions - Wastewater**

### **Receipts for on-site work (2E.22)**

**5** Contributions for on-site work have increased significantly due to a post Covid catch-up related to pent up demand in addition to more sewers commissioned during 2021/22.

### **Diversions - NRSWA (2E.29)**

**6** This income represents contributions from all water diversion schemes applied for under NRSWA, it includes roads such as the A14, NW relief road, A47 and A12.

### **Value of adopted assets (2E.33)**

**7** Income from adopted assets increased from £29.3 million in 2020/21 to £39.2 million in 2021/22 in line with an increase in number and size of development mains vestings during the year. The adopted values at each site vary depending on the pipe diameter, material, depth and length and are vested by Anglian Water according to when developers complete the mains.

**Table 2F - Household - Revenues by Customer Type**

	Line description	Revenue	Number of customers	Average residential revenues
	Units	£m	000s	£
<b>Residential revenue</b>				
1	Wholesale charges	922.881	-	-
2	Retail revenue	105.495	-	-
3	Total residential revenue	1,028.376	-	-
<b>Retail revenue</b>				
4	Revenue Recovered ("RR" )	105.495	-	-
5	Revenue sacrifice	-	-	-
6	Actual revenue (net)	105.495	-	-
<b>Customer information</b>				
7	Actual customers ("AC" )	-	2,923.509	-
8	Reforecast customers	-	2,909.614	-
<b>Adjustment</b>				
9	Allowed revenue ("R" )	88.277	-	-
10	Net adjustment	(17.218)	-	-
<b>Other residential information</b>				
11	Average residential retail revenue per customer	-	-	36.085

**Retail revenue (2F.2)**

**1** The household retail revenue control is a total revenue control, which can be recovered across the household customer base. The allowed revenue is calculated by multiplying the cost to serve by the number of unique customers.

**Net adjustment (2F.10)**

**2** The £17.2 million over recovery of revenue against the control (19.5 per cent of retail revenue) is primarily due to lower take-up on our social tariff LITE for the year as a whole, compared to the forecast when setting charges. This forecast assumed that take-up would increase as a consequence of the economic impact of the pandemic. We understand this impact was moderated as a consequence of the continuation of furlough arrangements into the 2021/22 charging year. Take-up increased in the last quarter and we have seen this trend continue into the 2022/23 charging year. As a result, we expect to balance retail revenue recovery back to a neutral position over the remainder of AMP7.

Table 2G - Non-household Water - Revenues by Customer Type

Line description	Wholesale charges revenue	Retail revenue	Total revenue	Number of connections	Average non-household retail revenue per connection	Allowed average non-household retail cost	Outcome delivery incentive (ODI) payment	Allowed average non-household retail cost after ODI payment	Allowed margin	Allowed average non-household retail revenue per connection
Units	£m	£m	£m	000s	£	£	£	£	%	£
<b>Default tariffs - customer group 1</b>										
1 Tariff type 1	0	0	0	0	0	0	0	0	0	0
2 Tariff type 2	0	0	0	0	0	0	0	0	0	0
3 Total default tariffs customer group 1	0	0	0	0	0	0	0	0	0	0
<b>Default tariffs - customer group 2</b>										
4 Tariff type 1	0	0	0	0	0	-	-	-	-	-
5 Total default tariffs	0.000	0.000	0.000	0.000	0.000	-	-	-	-	-
<b>Non-Default tariffs</b>										
6 Total non-default tariffs	0	0	0	0	0					
7 Total	0.000	0.000	0.000	0.000	0.000					

Line description	Number of customers	Average non-household retail revenue per customer
Units	000s	£
DPS	3	3

Revenue per customer		
Total	0	0.000

8

1 Table has been left blank as the company is not required to report against this table.

Table 2H - Non-household Wastewater - Revenues by Customer Type

Line description	Wholesale charges revenue	Retail revenue	Total revenue	Number of connections	Average non-household retail revenue per connection	Allowed average non-household retail cost	Outcome delivery incentive (ODI) payment	Allowed average non-household retail cost after ODI payment	Allowed margin	Allowed average non-household retail revenue per connection
Units	£m	£m	£m	000s	£	£	£	£	%	£
Default tariffs - customer group 1										
1 Tariff type 1	0	0	0	0	0	0	0	0	0.00%	0
2 Tariff type 2	0	0	0	0	0	0	0	0	0.00%	0
3 Tariff type 3	0	0	0	0	0	0	0	0	0.00%	0
4 Total default tariffs	0	0	0	0	0	0	0	0	0.00%	0
Non-Default tariffs										
5 Total non-default tariffs	0	0	0	0	0					
6 Total	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00%	0.000
Average non-household retail revenue per customer										
Line description	Number of customers	Average non-household retail revenue per customer								
Units	000s	£								
DPs	3	3								
Revenue per customer										
7 Total	0	0								

1 Table has been left blank as the company is not required to report against this table.

## Table 2I - Revenue Analysis and Wholesale Control Reconciliation

Line description	Units	Household	Non-household	Total	Water resources	Water network+	Total
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### Wholesale charge - water

1	Unmeasured	£m	74.163	0.295	74.458	9.141	65.317	74.458
2	Measured	£m	286.605	109.131	395.736	43.071	352.665	395.736
3	Third party revenue	£m	-	13.173	13.173	2.596	10.577	13.173
4	Total wholesale water revenue	£m	360.768	122.599	483.367	54.808	428.559	483.367

Line description	Units	Household	Non-household	Total	Wastewater network+	Bioresources	Total
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### Wholesale charge - wastewater

5	Unmeasured - foul charges	£m	99.533	0.634	100.167	80.000	20.167	100.167
6	Unmeasured - surface water charges	£m	15.272	0.082	15.354	15.256	0.098	15.354
7	Unmeasured - highway drainage charges	£m	9.058	0.043	9.101	9.014	0.087	9.101
8	Measured - foul charges	£m	323.642	99.870	423.512	346.441	77.071	423.512
9	Measured - surface water charges	£m	70.458	3.744	74.202	73.727	0.475	74.202
10	Measured - highway drainage charges	£m	44.150	1.916	46.066	45.627	0.439	46.066
11	Third party revenue	£m	-	-	-	-	-	-
12	Total wholesale wastewater revenue	£m	562.113	106.289	668.402	570.065	98.337	668.402

### Wholesale charge - Additional Control

13	Unmeasured	£m	-	-	-
14	Measured	£m	-	-	-
15	Total wholesale additional control revenue	£m	-	-	-

16	Wholesale Total	£m	922.881	228.888	1,151.769
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### Retail revenue

17	Unmeasured	£m	20.587	-	20.587
18	Measured	£m	84.908	-	84.908
19	Other third party revenue	£m	-	-	-
20	Retail Total	£m	105.495	-	105.495



	Line description	Units	Household	Non-household	Total
<b>Third party revenue - non-price control</b>					
21	Bulk supplies - water	£m	-	-	10.101
22	Bulk supplies - wastewater	£m	-	-	4.018
23	Other third party revenue	£m	-	-	3.022
<b>Principal services - non-price control</b>					
24	Other appointed revenue	£m	-	-	1.559
25	Total appointed revenue	£m	-	-	1,275.964

**1** This table shows an analysis of revenue across our price control units split by revenue streams. The table reflects the disaggregated charges set to separately recover foul, surface and highway revenue. Calculation of water resources, water network plus, wastewater network plus and bioresources actual revenue is in line with the proportion of each fixed and volumetric charge as set when calculating charges in order to recover the allowed revenue requirement.

**2** Measured and unmeasured wholesale charges reflect the revenue recovered for the provision of principal services. Third party revenue within the price control reflects the supply of non-potable water.

**3** Bulk supplies relate to provision of treated water supplies and wastewater services to neighbouring water companies. Other third party revenue – non-price control includes “Excluded Charges” and all other sources of revenue received from third parties for which costs are not covered by the wholesale price control e.g. rechargeable works where the appointee is a monopoly supplier.

**Table 2J - Infrastructure Network Reinforcement**

	Line description	Units	Network reinforcement capex	On site / site specific capex (memo only)
<b>Wholesale water network+ (treated water distribution)</b>				
1	Distribution and trunk mains	£m	5.728	0.007
2	Pumping and storage facilities	£m	3.078	0.001
3	Other	£m	-	-
4	Total	£m	8.806	0.008
<b>Wholesale wastewater network+ (sewage collection)</b>				
5	Foul and combined systems	£m	4.656	-
6	Surface water only systems	£m	-	-
7	Pumping and storage facilities	£m	1.174	-
8	Other	£m	-	-
9	Total	£m	5.830	-

**General assumptions (2J.1-2J.9)**

**1** Table 2J shows the total capital expenditure on network reinforcement split between below ground infrastructure assets and pumping and storage facilities, classified in accordance with the definition set out in Ofwat's "Charging rules for new connections services" document.

**2** The onsite/site specific capex shows the network enhancement expenditure incurred in relation site specific new developments.

**3** The source of the data is the project systems module of our SAP business management system. Each project holds as part of its master data Business Investment Category (BIC) codes which map the expenditure to infrastructure and non-infrastructure, and between Water and Wastewater Network+.

**4** All network reinforcement spend is in relation to below ground infrastructure, pumping stations and storage facilities. No expenditure is therefore shown within "other".

**Wastewater below ground infrastructure (2J.5-2J.6)**

**5** For Wastewater Network+ infrastructure spend, an assessment of all projects has been performed to determine whether the costs are in relation to foul and combined or surface water only systems. No surface water only schemes were included in the current year.

**Table 2K - Infrastructure Charges Reconciliation**

	Line description	Units	Water	Wastewater	Total
<b>Impact of infrastructure charge discounts</b>					
1	Infrastructure charges	£m	10.636	12.929	23.565
2	Discounts applied to infrastructure charges	£m	-	-	-
3	Gross Infrastructure charges	£m	10.636	12.929	23.565
<b>Comparison of revenue and costs</b>					
4	Variance brought forward	£m	(23.457)	(4.050)	(27.507)
5	Revenue	£m	10.636	12.929	23.565
6	Costs	£m	(8.806)	(5.830)	(14.636)
7	Variance carried forward	£m	(21.627)	3.049	(18.578)

**1** Over a rolling five-year period we expect to fully recover the costs of network infrastructure reinforcement from developers. However, owing to the long-term nature of these infrastructure schemes, the uneven profile of network reinforcement spend over an AMP period and the fact that we aim to recover these infrastructure costs over a five year period, we would not expect the costs and revenues to match in any given financial year.

**2** Our region is in an area of significant growth and we continue to see a shift towards large urban expansions compared to smaller infill sites. The first Covid lockdown saw a drop in the number of planned New Connections, which directly impacted our recovery of Infrastructure Charges. During this period, we continued to invest in network reinforcement. Our charges scheme has been designed to maintain the pre-existing balance between developers and customers and the timing of expenditure is such that it is often out of sync with the collection of revenues. We believe the differences in expenditure and revenue seen in 2021/22 is temporary in nature and would expect this gap to narrow over time, particularly as the new development activity reaches maturity and all network reinforcement expenditure incurred to enable this growth is recovered from developers. This can be seen in the reduction in the brought forward variance from 2020/21 (£27.5 million) compared to the 2021/22 carried forward variance (£18.6 million).

**3** No discounts have been applied to infrastructure charges in 2021/22.

**Table 2L - Analysis of land sales for the 12 months ended 31 March 2022**

	Line description	Units	Water resources	Water Network+	Wastewater Network+	Additional control	Total
1	Land sales - Proceeds from disposals of protected land	£m	0.157	0.325	3.990	-	4.472

**1** Proceeds are net of costs. Most proceeds are from the sale of minor pieces of land. There was one item requiring prior approval from Ofwat, which was Great Billing Mineral Site (£3.4 million).

**Table 2M - Revenue reconciliation for the 12 months ended 31 March 2022 - Wholesale**

	Line description	Units	Water resources	Water network+	Wastewater network+	Bioresources	Additional Control	Total
<b>Revenue recognised</b>								
1	Wholesale revenue governed by price control	£m	54.808	428.559	570.065	98.337	-	1,151.769
2	Grants & contributions (price control)	£m	-	28.915	22.029	-	-	50.944
3	Total revenue governed by wholesale price control	£m	54.808	457.474	592.094	98.337	-	1,202.713
<b>Calculation of the revenue cap</b>								
4	Allowed wholesale revenue before adjustments (or modified by CMA)	£m	54.813	424.279	571.736	98.504	-	1,149.332
5	Allowed grants & contributions before adjustments (or modified by CMA)	£m	-	24.376	23.227	-	-	47.603
6	Revenue adjustment	£m	-	-	-	-	-	-
7	Other adjustments	£m	-	-	-	-	-	-
8	Revenue cap	£m	54.813	448.655	594.963	98.504	-	1,196.935
<b>Calculation of the revenue imbalance</b>								
9	Revenue cap	£m	54.813	448.655	594.963	98.504	-	1,196.935
10	Revenue Recovered	£m	54.808	457.474	592.094	98.337	-	1,202.713
11	Revenue imbalance	£m	0.005	(8.819)	2.869	0.167	-	(5.778)

### Grants & contributions (2M.2)

**1** We do not receive any grants. All current year contributions revenue governed by the wholesale price control were received in relation to new development activities.

### Amount assumed in wholesale determination (2M.4)

**2** Wholesale revenue controls are set for water resources, water network plus, wastewater network plus and bioresources separately. The values set out in the Final Determination in 2017/18 prices are repriced based on CPIH to give the allowed revenue for 2021/22. The resulting calculation of revenue was then used for setting charges for the 2021/22 Charges Scheme.

**3** Allowed wholesale water resources revenue and network plus revenue were calculated as £54.8 million and £448.7 million respectively.

**4** Allowed wholesale wastewater network plus revenue and bioresources revenue were calculated as £595.0 million and £98.5 million respectively.

### Difference (2M.11)

**5** The level of wholesale water resources revenue recovered from customers is £0.0 million below allowed revenues and water network plus is £8.8 million above allowed revenue. The over-recovery represents 0.0 per cent and 2.0 per cent of allowed revenues respectively. This reflects an over-recovery of grants & contributions (£4.5 million) along with an over-recovery of main charges revenue (£4.3 million). The over-recovery on main charges

is primarily due to higher peak demand for non-household customers than forecast and the recognition of an under accrual following completed retail market settlement for non-household customers.

**6** The level of wholesale wastewater network plus and bioresources revenue is £2.9 million and £0.2 million respectively below allowed revenue. The under-recoveries represent 0.5 per cent and 0.2 per cent of allowed revenues respectively. For wastewater network plus this reflects an under-recovery of grants & contributions (£1.2 million) along with an under-recovery of main charges (£1.7 million). The under recovery on main charges is primarily due to lower non-household demand and trade effluent strengths than forecast.

**Table 2N - Residential retail - social tariffs**

	Line description	Revenue	Number of customers	Average amount per customer
	Units	£m	000s	£
<b>Number of residential customers on social tariffs</b>				
1	Residential water only social tariffs	-	1.165	-
2	Residential wastewater only social tariffs	-	5.260	-
3	Residential dual service social tariffs	-	27.430	-
<b>Number of residential customers not on social tariffs</b>				
4	Residential water only no social tariffs	-	240.493	-
5	Residential wastewater only no social tariffs	-	840.875	-
6	Residential dual service no social tariffs	-	1,808.286	-
<b>Social tariff discount</b>				
7	Average discount per water only social tariffs customer	-	-	114.163
8	Average discount per wastewater only social tariffs customer	-	-	137.643
9	Average discount per dual service social tariffs customer	-	-	252.789
<b>Social tariff cross-subsidy - residential customers</b>				
10	Total customer funded cross-subsidies for water only social tariffs customers	0.133	-	-
11	Total customer funded cross-subsidies for wastewater only social tariffs customers	0.724	-	-
12	Total customer funded cross-subsidies for dual service social tariffs customers	6.934	-	-
13	Average customer funded cross-subsidy per water only social tariffs customer	-	-	0.550
14	Average customer funded cross-subsidy per wastewater only social tariffs customer	-	-	0.856
15	Average customer funded cross-subsidy per dual service social tariffs customer	-	-	3.777
<b>Social tariff cross-subsidy - company</b>				
16	Total revenue forgone by company to fund cross-subsidies for water only social tariffs customers	-	-	-
17	Total revenue forgone by company to fund cross-subsidies for wastewater only social tariffs customers	-	-	-
18	Total revenue forgone by company to fund cross-subsidies for dual service social tariffs customers	-	-	-
19	Average revenue forgone by company to fund cross-subsidy per water only social tariffs customer	-	-	-
20	Average revenue forgone by company to fund cross-subsidy per wastewater only social tariffs customer	-	-	-
21	Average revenue forgone by company to fund cross-subsidy per dual service social tariffs customer	-	-	-
<b>Social tariff support - willingness to pay</b>				
22	Level of support for social tariff customers reflected in business plan	-	-	4.000
23	Maximum contribution to social tariffs supported by customer engagement	-	-	12.000

**1** Numbers reported relate to the LITE tariffs. The average number of customers on the tariffs in the year was 34,000 which is below the forecast take up when charges were set. This forecast assumed that take up would increase as a consequence of the economic impact of the pandemic. We understand this impact was moderated as a consequence of the continuation of furlough arrangements into the 2021/22 charging year. Take-up increased in the last quarter and we have seen this trend continue into the 2022/23 charging year. The discount per customer reflects the weighted average of the discount bands available. There has been limited take up for single service customers with majority of customers being dual service. When setting charges we calculated a cross subsidy of £12 for a dual service and £6 for a single service customer. The discount is fully funded by the cross subsidy set following consultation in 2020.

**2** To promote accessibility for vulnerable customers we offer additional practical support to a wide range of customers as part of our Priority Service register. The Priority Service register can provide support to our customers should their water stop, and we need to carry out a repair, including proactive contact and bottled water delivered to their door. We also provide additional services to help with managing their account, such as bills in alternative formats, translations services, help reading the meter, password schemes and our knock and wait service which can provide extra time for our customers to answer the door. During 2021/22 we increased the number of customers we support through our Priority Service register by over 100,000. The increase was as a result of our customer facing teams proactively responding to disclosures of vulnerability, promotional campaigns to increase awareness including newspaper, radio and pharmacy bags advertisements. We also disseminated information through our network of more than 150 partners who support those in vulnerable circumstances.

**3** In 2021/22 we rolled out bespoke vulnerability training in partnership with the Money Advice Trust to our frontline teams, building their confidence and ability to encourage and handle sensitive disclosures. We made significant investments to our system to enhance the way in which we can capture and record vulnerability, supporting our tell us once approach. The changes made it quick and easy to register our customers for support and increased overall visibility of any support needs so that we can tailor our interactions and the help we provide. We also launched a number of key partnerships this year, such as our partnership with Cambridgeshire Fire & Rescue service, the initiative enabled our customers registered for Priority Services to benefit from free Safe & Well visits. We also worked closely with local government to help identify and distribute additional funding to support those most in need, as part of the Household Support Fund. Through the work we have done with councils we will be distributing over £0.5 million in supporting our customers with water poverty.



**Table 20 - Historic cost analysis of intangible fixed assets**

Line description		Units	Residential Retail	Business Retail	Water Resources	Water Network+	Wastewater Network+	Bioresources	Additional Control	Total
<b>Cost</b>										
1	At 1 April 2021	£m	80.810	-	17.499	48.901	459.279	15.643	-	622.132
2	Disposals	£m	-	-	-	-	(2.221)	-	-	(2.221)
3	Additions	£m	3.011	-	6.354	1.534	44.531	2.762	-	58.192
4	Adjustments	£m	(1.722)	-	-	(0.352)	(90.914)	(1.352)	-	(94.340)
5	Assets adopted at nil cost	£m	-	-	-	-	-	-	-	-
6	At 31 March 2022	£m	82.099	-	23.853	50.083	410.675	17.053	-	583.763
<b>Amortisation</b>										
7	At 1 April 2021	£m	(66.968)	-	(10.469)	(25.575)	(272.081)	(3.099)	-	(378.192)
8	Disposals	£m	-	-	-	-	1.741	-	-	1.741
9	Adjustments	£m	0.134	-	-	-	33.173	0.536	-	33.843
10	Charge for year	£m	(1.808)	-	(2.602)	(2.806)	(25.341)	(2.942)	-	(35.499)
11	At 31 March 2022	£m	(68.642)	-	(13.071)	(28.381)	(262.508)	(5.505)	-	(378.107)
12	Net book amount at 31 March 2022	£m	13.457	-	10.782	21.702	148.167	11.548	-	205.656
13	Net book amount at 1 April 2021	£m	13.842	-	7.030	23.326	187.198	12.544	-	243.940
<b>Amortisation for year</b>										
14	Principal services	£m	(1.808)	-	(2.602)	(2.806)	(25.341)	(2.942)	-	(35.499)
15	Third party services	£m	-	-	-	-	-	-	-	-
16	Total	£m	(1.808)	-	(2.602)	(2.806)	(25.341)	(2.942)	-	(35.499)

**1** Intangible assets included in the above comprise capitalised software assets and models, studies and plans used to inform future investments.

**2** The net book amount includes £97.6 million in respect of assets in the course of construction.

**3** Table 20 excludes tangible assets with a net book amount at 31 March 2022 of £9,945.3 million (31 March 2021 of £9,687.9 million) as shown in table 2D.

**4** The above numbers have also been adjusted to reflect the 2021 IFRS Interpretations Committee (IFRIC) agenda decision which clarified the accounting treatment of configuration costs for software provided as a service (SaaS). These costs have historically been included as the capital cost of software and accounted for as intangible assets. The resulting adjustment removes all previously capitalised SaaS costs from fixed assets, with a corresponding effect on retained earnings. This adjustment is shown in the above table in the Cost Adjustments line 20.4 (£94.3 million brought forward cost removed) and in the Amortisation Adjustments line 20.9 (£35.5 million brought forward amortisation removed).

All SaaS costs were expensed during 2021/22 and will continue to be treated as such going forwards, resulting in lower intangible asset additions and amortisation charge than would previously have been recognised. The vast majority of affected assets had been categorised in the Wastewater Network+ business unit under the principle use treatment.

### Table 3A - Outcome performance - Water performance commitments

Line description	Unique reference	Unit	Performance level - actual	PCL met?	Outperformance or underperformance payment	Forecast of total 2020-25 out/underperformance payment
					£m	£m

#### Common PCs - Water (Financial)

1	Water quality compliance (CRI)	PR19ANH_3	number	4.04	No	-1.608	-1.608
2	Water supply interruptions	PR19ANH_4	hh:mm:ss	00:09:48	No	-4.193	-10.000
3	Leakage	PR19ANH_5	%	6.1	Yes	0.197	0.263
4	Per capita consumption	PR19ANH_6	%	-3.4	No	-	-
5	Mains repairs	PR19ANH_11	number	122.2	Yes	-	-
6	Unplanned outage	PR19ANH_12	%	1.72	Yes	-	-

#### Bespoke PCs - Water and Retail (Financial)

7	Percentage of population supplied by a single supply system	PR19ANH_15	%	22.7	No	-	0.612
8	Properties at risk of persistent low pressure	PR19ANH_16	nr	58	Yes	0.583	1.000
9	Abstraction Incentive Mechanism	PR19ANH_20	nr	-376	Yes	0.014	-
10	Managing void properties	PR19ANH_23	%	0.12	Yes	1.320	6.000
11	Water quality contacts	PR19ANH_34	nr	1.03	No	-0.054	-2.000
12	Smart metering delivery	PR19ANH_38	nr	310,321	No	-	-
13	Internal interconnection delivery	PR19ANH_39	nr	1.5	-	-	-
14	Cyber Security	PR19ANH_41	%	-	-	-	-
15	Underperformance incentive for Elsham treatment works and transfer scheme	PR19ANH_47	text	n/a	-	-	-
16	Outperformance payment for Elsham treatment works and transfer scheme	PR19ANH_48	text	n/a	-	-	-

27	Financial water performance commitments achieved	%	50
28	Overall performance commitments achieved (excluding C-MEX and D-MEX)	%	63

**1** The information we have published in table 3A is consistent with the updates we have reported to our Independent Challenge Group (previously our Customer Engagement Forum) during the course of the year.

**2** We have set ourselves a target to achieve a net reward under the performance framework (across all price controls, including C-Mex and D-Mex) in the 2020-25 price control period. The rewards and penalties we have quoted in the 'forecast' column are consistent with that target.

### **Water Quality Compliance (CRI) (3A.1)**

**3** The DWI developed the Compliance Risk Index (CRI), alongside the Event Risk Index (ERI), for measuring compliance based risk.

**4** The CRI for an individual exceedance is calculated based on the parameter severity and impacted population. The score includes the cause of the failure, the way the company investigates the failure and any risk mitigation put in place by the company and is the Inspectorate's assessment of that which produces the assessment score. This is then converted into a company CRI score by dividing the sum of the scores for the year by the company population.

**5** In 2021 the provisional CRI score for Anglian Water is 4.04. This is higher than our 2020 score of 1.98. CRI was impacted in 2021 by an increased number of water quality exceedances from our water treatment works in comparison to 2020. We have instigated a programme that is aimed to reduce the number of water quality exceedances from our assets. The final CRI score will be confirmed when the DWI publishes the Chief Inspector's Report for 2021.

### **Water Supply Interruptions (3A.2)**

**6** The total time lost due to interruptions exceeding 3 hours per property is 9 minutes 48 seconds (compared to 5 minutes 2 seconds in 2020/21). The breakdown of the score is 9 minutes 45 seconds (4 minutes 58 second in 2020/21) for unplanned incidents and 3 seconds (4 seconds in 2020/21) for planned.

**7** Whilst 2022 has seen a gradual return to pre Covid-19 working practices, the majority of Year 2 has remained impacted by Covid-19 restrictions. Issues faced could be seen as a continuation of those faced in Year 1. Logistical challenges to both Operations and office-based personnel to keep Covid-19 safe and compliant were balanced alongside the 'unknown' customer demands on a network during lockdown measures. Changes to working practices in Year 1 and Global economic and political changes during Year 2 have also seen issues arise across areas, ranging from increased proactive work taking place in Year 2 (backlog and programme delivery 'catch up' from Year 1, including reservoir cleaning), through to some difficulties in obtaining products due to global shortages and restrictions.

### **Common methodology compliance**

**8** For this PC there is an immaterial risk of worse performance being reported due to non-compliance with the common methodology. This effects sections 2c (start time - block of flats) and 3c (stop time - block of flats).

**9** We do not treat blocks on a floor by floor basis in every circumstance as the modelling of tower blocks by floor is not cost beneficial where the information is not readily available.

**10** We verify every event on a case by case basis, not however on a floor by floor basis. Variations in building height, internal plumbing, storage tanks, boosters and header tanks present too great a challenge (currently) to be able to accurately report, though we would assess on a case by case basis were data on these factors available. Instead, a consistent approach is made to all event verification where all supply points are considered at ground level.

**11** We treat any outage where sufficient information is not available as the whole building being off water. This results in a slightly higher reported number if relevant.

### **Leakage (3A.3)**

**12** The three year rolling average leakage is assessed at 182.3 MI/d against a performance commitment level of 183.2 MI/d. This is a 6.1 per cent reduction against the 2019/20 baseline compared with a target reduction of 5.6 per cent . This generates £0.197m of reward for the year.

### **Leakage strategy**

**13** Our AMP7 leakage strategy continues some themes that we started in AMP6 such as network optimisation and intensive leakage investigation. It is supplemented with new SMART strategies such as permanent noise logging, smart metering and widespread pressure transient monitoring. Outputs from our strategies are as follows:

- Detection resources – Our base level of detection technicians for AMP7 is 156.8 technicians. In 2021/22 we recruited an additional 57 fixed term leakage detection field roles to focus detection activities. We had a peak of 213.8 people but this had reduced to 169.8 by the end of the report year as the fixed term contracts neared their end. The average number of full-time equivalent employees (FTEs) for Year 2 was 178.8 FTE (an increase of 22 FTE against base)
- Leakage Sensors – We now have 8,369 remote hydrophones installed across 285 DMAs in full monitoring mode (up from 5,143 and 227 DMAs in 2020/21). To date the SENSOR programme has delivered 15,040 (up from 8,807 in 2020/21) leaks proactively and technician productivity has increased on average from 0.5 leaks per day to 1.0 leaks per day across all work streams when compared to 2020/21.
- SMART metering - our smart metering programme has installed 310,321 meters by the end of 2021/22, up 164,400 from 2020/21. The installation programme has been slowed by issues with microprocessor availability, which has delayed deliveries of smart meters. In 2021/22 we identified 62,062 properties with continuous flow greater than 1 l/hr. We saw 20,779 of these leaks fixed with no contact from us to the customers. Of the 40,133 leaks where we informed and worked with our customers to ensure that the issue was resolved by them we saw 25,205. This has resulted in 7.21 MI/d of leakage or plumbing loss being resolved. In addition, during 2021/22, we also recorded 2,688 (intervention-driven) fixes on leaks identified in 2020/21 totalling 1.82 MI/d
- Customer supply pipe leakage/internal property leakage – We continue our process of working with customers to ensure that they repair leaks on their supply pipe or internally to the property in a timely manner. 2021/22 is our busiest year to date, with 10,699 cases managed against 8,832 in 2020/21
- Network/pump optimisation schemes – There have been 207 optimisation schemes implemented this year, delivering 5.18 MI/d leakage reduction. This was split between:
  - 138 schemes to optimise existing pressure management assets, delivering 2.13 MI/d leakage reduction.
  - 65 schemes introducing first time pressure management, delivering 2.68 MI/d leakage reduction.
  - 4 other schemes delivering 0.37 MI/d leakage reduction
- Intensive Leakage Programme - This process has led to a leakage reduction of 3.40 MI/d in 2021/22. The teams have continued their approach to auditing historically high leakage zones but also focused on gaining a better understanding of inoperable zones working closer with teams around the business.

## Per capita consumption, PCC (3A.4)

**14** PCC has reduced in 2021/22 to 138.7 l/person/day (as an average over the last three years) compared to a target of 131.4 l/person/day. The measure remains above target due to the impact of Covid-19 on domestic demand in both 2020/21 and 2021/22. By the later months of 2021/22 our smart meter data suggest that in the areas monitored demand has dropped back to near pre-Covid levels, although there remains some uncertainty in the exact position. The reduction seen in 2021/22 is partly due to the impact of fewer people being in their homes during the day as the impacts of Covid-19 lockdowns unwind and partly due to water efficiency and demand management savings as detailed below:

## Water efficiency

**15** The biggest benefits for delivering water efficiency are the changes we have made to MyAccount, our online tool for customers to engage with their smart metering data and help understand how much water they are using. From April 2021 we contacted 44,000 customers to go online to view their smart water consumption data. By March 2022 we had 115,000 registered active smart meter households who are engaged with their usage. We send customers monthly reminders to view their usage to compare with the previous month and use 'social norms' to show whether their usage is either 'efficient', 'average' or 'above average' to similar homes based on occupancy provided. By customers having frequent engagement with their usage, it helps them to take control of what they are using to change behaviours. Customer-side leakage accounts for the majority in reduction of overall PCC/household consumption but would be included separately in the smart metering benefits share.

**16** As part of our metering visits, whether that's fitting an internal meter or attending to a high consumption query, we offer our water saving home visits to customers. We completed 6,545 water saving home visits in 2021/22. Our target was originally to complete 12,500 water saving home visits in year 2 however, due to Covid-19 we could not conduct visits in customers' homes until July 2021. We are looking to make up this shortfall within year 3.

**17** We have fitted 13,330 water saving devices ranging from low flow shower heads to trigger hose guns for the garden. The total assumed savings using the Ofwat assumptions based on the devices fitted is approximately 20 litres/prop/day.

## Device breakdown

Device	Amount
Bath Buoy	366
Dye tablets	298
Eco Beta	22
Garden Kit	1006
Gardening crystals	696
Hippo	50
Hose connector	212
Plumber correcttoilet to be dual flush	10
Save-a-flush bag	998
Shower head	1308
Shower timer	2057
Sink Strainer	49

Stop Tap Tag	143
Tap Insert	76
Trigger hose gun	893
Washing up bowl	438
Water Saving Kit	4708
<b>Grand Total</b>	<b>13330</b>

**18** As part of an online engagement to save water and support new and young families with children under the age of 12 months we worked in partnership with National Childcare Trust (NCT) to give away free bath barriers called Babydam. We had a better than expected uptake and overall sent out 22,604 Babydams, with minimum savings assumed to be 28 litres per device. In addition, more than 6,000 new families signed up to the Priority Services Register.

**19** We continued with our online engagement to prepare customers for Spring and Summer weather and worked with social media influencers to share advice on tips during the summer months as part of the 'always on' messaging and driving awareness about the value of water. From Spring 2021 we:

- sent 11,589 water saving garden kits to customers via online request
- ran a summer campaign overall was 278,667 working with influencers in our region
- saw an increase in visits to our website, Across the three weeks from week commencing 5th July we had a unique page visit increase of 76.59 per cent compared to the three previous weeks
- furthermore, using our own paid channels we saw an engagement of 1,130,954 customers for the staycation targeted in our holiday destinations where we see an increase in demand.

### Summary of channel performance for Summer 2021

	Channel	Content	Reach
<b>Paid</b>	Radio	30" script	2,099,865
	Social	Image FB activity (staycation)	130,694
		Video and Image FB Activity (Summer Demand)	363,952
<b>Owned</b>	Email	Through the Plughole newsletter (June)	885,000
	Website	Homepage	404,225
		Onsite content (save water pages)	120,264
<b>Earned</b>	Influencer	12x Instagram influencers Post 1	172,726
		12x Instagram influencers Post 2	105,941

### Trialling behaviour change and smart devices

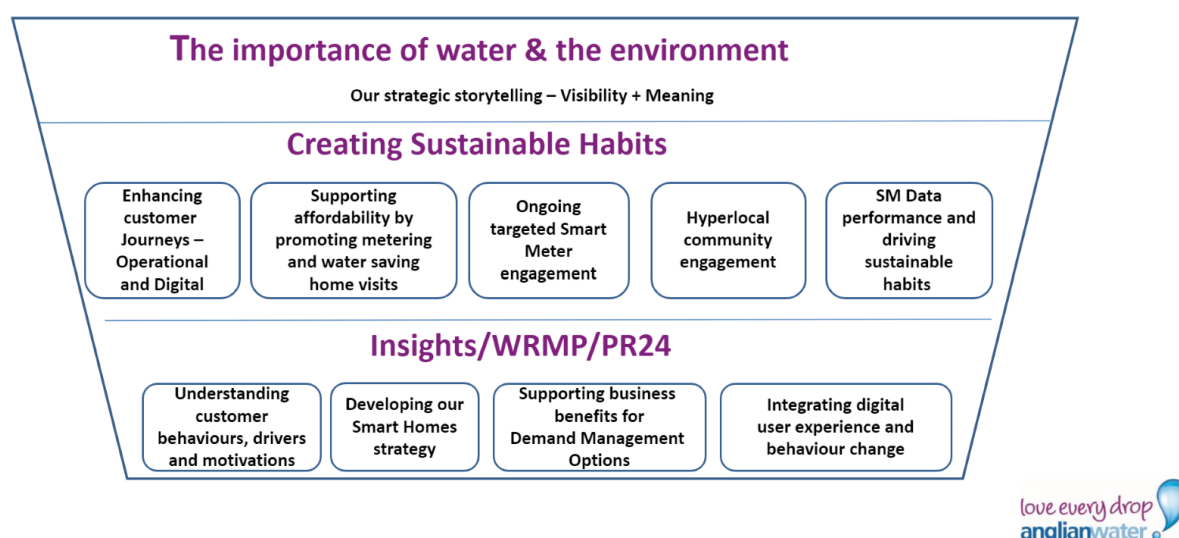
**20** As part of our ongoing strategy for behaviour change, we are focusing on shower behaviours using real-time NB IoT (Narrow band internet of things) technology to track behaviours and water savings. In May 2021 we started a collaborative project with Aguardio and Northampton Partnership Homes to deliver a trial to install smart shower devices in tenants' properties. Later into the trial we also had Surrey University to support on the project.

**21** To date a total of 850 smart shower timers have been fitted, including 100 blinded devices as the control group. So far assumed savings are a 23 per cent reduction in shower time and the aim to is continue monitoring to understand the longer-term impacts and how to sustain engagement.

**22** From February 2022, we have also been working in partnership with Cardiff University as part of CAST funding (Climate and Social Transformation) programme to test the theory of 'Moment of change' (attempts to change behaviours when customers move home will be more effective when presented at the right moment). We have around 450 households with a smart shower timer where they have moved home compared to the control group who have not moved home. They have taken part in the ongoing trial that will continue into year 3 and provide monthly smart metering data to demonstrate benefits.

### Year 3-5 programme of activities

**23** Our PCC improvement framework is summarised below:



**24** We will continue with 'business as usual' water operational and digital customer journeys through metering and completing water saving home visits. In addition, we will gather evidence to support our WRMP24 and PR24 options that are robust and will deliver savings for AMP8.

### Common methodology compliance

**25** We summarise our compliance with the common methodology in the commentary for 6B.9.

### Water mains repairs per 1,000 kilometres of pipe (3A.5)

**26** For 2021/22 we are reporting 122.2 repairs per 1,000km of pipe. This is an improvement on 2020/21 (130.6 repairs per 1,000km of pipe) and is consistent with the longer term performance level for the measure.

**27** We comply fully with the consistent reporting requirements defined by Ofwat during AMP7.

### Proportion of unplanned outage of the total company production capacity (3A.6)

**28** The 2021/22 unplanned outage figure of 1.72 per cent is an increase on the 2020/21 figure.



**29** Overall Company Peak Week Production Capacity (PWPC) saw a 30MI/d increase from 2020/21 to 2021/22. Of our 144 sites, 20 increased, 109 remained the same and 15 sites decreased. The most noticeable increase was at Wing WTW.

**30** We comply fully with the consistent reporting requirements defined by Ofwat during AMP7.

### **Percentage of population supplied by a single supply system (3A.7)**

**31** The performance commitment for supply demand resilience is 'Percentage of Population supplied by a single supply system'. This is a bespoke reward-only Performance Commitment. This programme is a continuation of our AMP6 programme.

**32** The approach taken to develop the baseline was to identify the resulting deficit if each water treatment works was taken out of service for a prolonged period. The deficit was converted to an equivalent number of household customers and the percentage of population at risk calculated. The risk to the whole region was summed to form the baseline figure. This was calculated in 2014/15 to provide an AMP6 baseline of 46.9 per cent. At the end of AMP6 we reported an outturn position of 24.1 per cent which thus forms the baseline for AMP7.

**33** The programme for reducing the percentage of population at risk during AMP7 is closely aligned to our Water Resources Management Plan (WRMP) Strategic Interconnector Programme, with the majority of schemes planned to be delivered towards the end of the AMP as the interconnectors are commissioned.

**34** In 2021/2022, as expected, we have not completed any further schemes. The remaining AMP7 schemes are progressing through the design process as part of our strategic interconnectors programme, with the next scheme planned to be commissioned in 2022/23, and the remainder in 2024/2025. The outturn for 2021/2022 therefore remains at 22.7 per cent, which is 0.9 per cent above the performance commitment level of 21.8 per cent. This is due to the alignment with the strategic interconnectors programme and the reprofiling of that programme for efficient delivery. As this is a reward-only Performance Commitment there is no penalty associated with this outturn.

Year	Schemes Delivered	% population reduction from delivered schemes	% population supplied by a single supply system
AMP7 Baseline			24.1
2020-21	Pitsford WTW	1.34	22.7
	Ludham WTW	0.09	
2021-22	No schemes delivered		22.7

### **Properties at risk of persistent low pressure (3A.8)**

**35** The number of reportable properties on the register at year end is 58 for 2021/22, compared with 147 at the end of 2020/21. This is below the 2021/22 Performance Commitment Level of 150 properties.

**36** The improvement in performance in 2021/22 is due to

- the beneficial completion of capital and operational work commenced previously
- the very low number of register additions seen in 2021/22 compared to previous years (for example in 2020/21 there were 43 additions to the register compared to one in 2021/22), and
- the use of innovative Solar Powered Small Area Boosters, which allow resolution of pressure issues for properties which were previously disproportionately expensive to resolve.

**37** At the end of 2021/22, of the 58 properties below the reference level, 13 are included under Section 65 of the 1991 Water Industry Act where a property receives pressure below the reference level due to its height in relation to the storage point.

**38** During 2021/22, one property was added and 90 properties were removed following a capital or operational intervention.

### **Capital schemes**

**39** 12 capital schemes to improve pressures have realised benefits in 2021/22:

- Sible Hedingham – 34 properties were removed from the register following previous schemes to improve pump control and to maintain pressure in the zone.
- Wisbech Willow Tree – nine properties were removed from the register following the completion of a water mains reinforcement scheme.
- Wisbech St Mary – five properties were removed from the register following the completion of a water mains reinforcement scheme
- Turvey – five properties were removed following a previous year's scheme to accommodate growth. The benefit to these properties was an additional benefit of the scheme which was confirmed with both network and main stop tap (MST) logging in 2021-22.
- Scunthorpe – four properties were removed from the register following the upgrade of a water booster.
- Hannington – three properties were removed by extending boosted systems.
- Hannington – a further three properties were removed following a previous year's scheme to accommodate growth. The benefit to these properties was an additional benefit of the scheme which was confirmed in 2021-22.
- Scoulton – two properties were removed following the installation of a new boundary valve to allow rezone on to a higher pressure zone.
- Walgrave – one property was removed from the register following the installation of a scheme to install a Solar Powered Small Area Booster. The Solar Powered Booster boosts pressure directly to the customer's MST, with only small lengths of dedicated pipework, allowing previously difficult to resolve properties improved pressures. The boosters are powered by solar panels and batteries.
- High Risby – one further property was removed from the register following installation of a Solar Powered Booster.
- West Bradenham – one property was removed from the register following refurbishment of a water booster.
- Tattershall – One property was removed from the register following a previous year's water mains reinforcement scheme to accommodate growth.

### **Operational investigations**

**40** Eight operational investigations provided updated information to confirm the removal of 21 properties in 2021/22.

- Stowmarket – five properties were removed from the register following confirmation that they had been successfully rezoned onto a high pressure system.
- Snettisham – four buildings on a large estate were removed as they were not individual properties, following investigation and confirmation with billing records on the actual properties supplied.
- Whaddon Chase – three properties were removed from the register following confirmation of previous operational changes in the network via hydrant and MST logging.
- Great Staughton – two properties were removed from the register following confirmation that a pressure reducing valve modification had been successful.
- Alconbury Hill – two properties were removed due to better information provided on the elevation of the MSTs, confirming the properties were not below the low pressure level of service pressures which was also confirmed through pressure logging the property MSTs.

- Brandon – two properties were removed as it was found the properties had previously been disconnected from the network and did not require a supply.
- Spilsby - two buildings on a large non-household site were removed as they were not individual properties, following investigation and confirmation with billing records on the actual properties supplied.
- Barton Le Clay – one property was removed following investigation to confirm that it was supplied from a higher pressure system.

**41** There have been no changes to the confidence grades and no restatement of previous years' data.

### **Abstraction Incentive Mechanism (3A.9)**

**42** The Anglian Water supply area is geographically large, with a significant rural population, and experiences some of the lowest rainfall in the country. The Environment Agency has assessed the region as being in 'serious water stress' and, in addition, it is recognised as being particularly vulnerable to the impacts of climate change. The region is characterised by a high number of water-dependent designated conservation sites and we work closely with the Environment Agency to manage the associated environmental pressures. Our region's slow moving rivers are often ecologically diverse and, whilst they can support abstraction, this may cause environmental stress during periods of low rainfall.

**43** Since privatisation, and as a result of the outcome of extensive environmental assessments, we have made significant investment to help understand and minimise the impacts of our abstractions. As a result, we have reduced output from, relocated or closed a number of our abstraction sources. In AMP6 this included a number of river restoration schemes and the relocation of our abstraction from the sensitive chalk stream environment in the upper River Wensum.

**44** There are a number of source closures and licence reductions planned for AMP7, along with river habitat improvements, as part of the Water Industry National Environment Programme (WINEP) of works to reduce our impact on the environment. This included the closure of our treatment works at Ludham in March 2021 in order to protect sensitive fenland habitats in the Norfolk Broads.

**45** The Abstraction Incentive Mechanism (AIM) was introduced by Ofwat as a reputational measure in AMP6 and this moved to a financial measure in AMP7. AIM is designed to encourage water companies to reduce their environmental impact by abstracting less water from environmentally sensitive sites at times of low river flow. This can be difficult to achieve, even where there are alternative sources, as low river flows often coincide with periods of peak customer demand. AIM allows us to target reductions in environmentally sensitive abstraction ahead of WINEP solutions programmed for later in the AMP.

**46** During AMP6 we reported AIM performance for Marham (River Nar), and this continues into AMP7 alongside three groundwater sources also identified as potentially impacting on nearby rivers. These include Marham (Groundwater), Wilsthorpe and Wixoe sources.

**47** For 2021/22 we have engaged in active AIM management, largely focussed on our Wilsthorpe source where we are most likely to see low flows. Performance was tracked through a dedicated WhatsApp group, giving the Water Resources Team, Supply colleagues and senior managers a daily/weekly view of actual abstraction and river flows. This has resulted in a significant reduction in abstraction against our 2007-2013 baseline.

### **Marham (River Nar)**

**48** Abstraction from the Marham surface water source decreased during AMP6 and was on average below the baseline during 2021/22. However, there were no days where flows in the Nar were below the AIM threshold so no reduction in the volume reported under AIM could be claimed this year.

**49** The hands-off flow requirement in the Marham abstraction licence for the River Nar is due to significantly increase from April 2025, resulting in a large sustainability change for the Marham source. We have assessed the impacts in our Water Resources Management Plan 2019 and have included a new transfer option for delivery by 2025. Until the transfer can be implemented alternative sources are limited primarily to the Wellington Wellfield groundwater source. This source is both a drought contingency and blend source and requires careful management.

### **Marham (Groundwater)**

**50** As with the Marham surface water source, flows in the River Nar have remained above the low flow threshold from the baseline period, so no reduction in the volume reported under AIM could be made this year.

**51** The Marham groundwater licence is due to decrease significantly from April 2025. The resulting deficit will be made up by the same transfer as for the surface water source. In the mean time we are endeavouring to reduce use of the groundwater during low flow periods, but we are constrained by the same limitations on the neighbouring licences.

### **Wilsthorpe**

**52** The East Glen river regularly sees low flows. In 2021/22 there were 110 days with flow below the AIM threshold and we were on average significantly below baseline for the whole period.

**53** The reduction was achieved by utilising network changes during the key summer period in order to support the Wilsthorpe supply area from the neighbouring sources at Bourne and Etton. This required some local investment to enable some of the zone changes and careful coordination over the timing of maintenance for key assets. Managers were kept up to date on river flows and performance and were able to feed back on challenges they were encountering to administer the strategy. This approach proved very successful.

**54** The Wilsthorpe source has been identified in WINEP for a sustainability cap, plus the requirement to provide river support by April 2025. AIM is encouraging us to reduce the use of this source during low flow periods until this work can be completed.

### **Wixoe**

**55** The Wixoe source is located near the Bumpstead Brook. The source has been identified in WINEP for relocation or closure during AMP7. The impact of the loss of this source has been assessed in our Water Resources Management Plan 2019 and this includes a new transfer option for delivery by 2025. Until this work is completed we are endeavouring to reduce the use of this source during low flow periods. During 2021/22 there were no flows below the AIM threshold.

<b>AIM Site</b>	<b>AIM volume 2021/22 (MI)</b>	<b>Reward/Penalty (£)</b>
Marham (River Nar)	0	£0
Marham (Groundwater)	0	£0
Wilsthorpe	-376	£14,453.62 (Reward)
Wixoe	0	£0
Total	-376	£14,453.62 (Reward)

### **Managing void properties (3A.10)**

**56** The outcome figure is a calculation of the percentage of false voids against the total number of domestic properties. The figures are extrapolated using the outcome of an audit of a random sample of properties using both field visits and third party data.

**57** We committed to audit 1,000 records. To ensure our sample number contained at least 1,000 records we extracted 1,247 records. After removing genuine exclusions this returned 1,126 audit results.

**58** The performance commitment level was 0.40 per cent and we out-turned at 0.12 per cent. Accordingly, we have earned an outperformance payment of £1.3m. The performance shows the continuing impact of the considerable work we put in to identify false voids. Activities in the year have included reviewing all properties void for more than four months, reviewing water consumption data, sharing data with water only companies, using bureau and land registry data, making doorstep visits and sending letters and emails.

### **Water quality contacts (3A.11)**

**59** The number of water quality contacts received in 2021 was 1.03 per 1,000 population served.

**60** The approach to improving the customer contact rate continues through our 'keep water healthy' initiative that has been running for a number of years. The campaign aims to provide customers with information and advice to help prevent water quality problems arising from their own internal plumbing. We continue to keep focus on engagement with our customers through multi platforms, especially social media, which we have further extended to deliver key messaging on water quality through a number of targeted sprint activities. We have reviewed our water quality website pages, making it easier for customers to self-serve on water quality issues.

### **Smart metering delivery (3A.12)**

**61** The table below shows the progress of our AMP7 smart meter delivery programme. Installations were affected in 2021/22 by the worldwide shortage of microchips which temporarily reduced the availability of smart meters.

Year	No. smart meters fitted	PCL
2020/21	164,400	219,279
2021/22	145,921	219,280
Total	310,321	438,559

**62** The in-year PCLs are indicative only and delivery of the performance commitment is judged at the end of the price control period.

### **Internal interconnection delivery (3A.13)**

**63** There is no target for this performance commitment in this reporting year. The performance commitment is defined in terms of capacity benefits delivered by the end of the AMP.

**64** In 2020/21 we completed the first scheme in our Internal Interconnector Programme - HPB1, Norwich & the Broads WRZ to Happisburgh WRZ - and reported a benefit of 1.5 MI/d.

**65** In 2021/22 we have continued work on the remainder of the Interconnector Programme across our region, including the large diameter strategic grid schemes, and have commenced detailed design, enabling activities, ecology and archaeology surveys including procurement of long lead items. The majority of the programme is now in the detailed design phase.

**66** We started construction as expected in 2021/22 on two schemes: a large diameter steel interconnector between Lincoln and Grantham (WRMP Ref SLN6) and an intra-zonal scheme between Norwich and Wymondham (WRMP Ref NNR8). On the Lincoln to Grantham scheme we have to date installed 15.9km of 800mm diameter steel main between Harmston and Wilsford. We expect to commence commissioning this section and to have water into

supply during 2022/23 before moving on to construct the next sections of the large diameter pipeline. The Norwich to Wymondham scheme consists of 12.3 km of 256mm internal diameter PE pipeline and a 131 kW pumping station with a capacity of 5 Ml/d. This is in the final stages of construction and we expect to get beneficial use from it early in 2022/23.

Year	Schemes Delivered	Capacity MLD	Total Capacity Delivered MLD
2020/21	Norwich & the Broads WRZ to Happisburgh WRZ (HPB1)	1.5	1.5
2021/22	No schemes delivered		1.5

### Cyber security (3A.14)

**67** Our cyber security performance commitment will not be assessed until 2024/25.

**68** As required by the performance commitment, we have conducted an estate-wide risk assessment across 388 Water Supply sites to determine areas of higher risk. The risk assessment has identified one water system containing 19 operational sites with a higher risk profile and these sites are to be remediated via our AMP7 NIS Compliance Programme. The Programme's structure and governance have been implemented, with site surveys and design efforts focusing on the high-risk sites currently in progress. We will deliver remediation to all high-risk sites by the end of AMP7.

### Elsham DPC (3A.15-16)

**69** Our performance commitments for direct procurement for customers for the new Elsham water treatment works incentivise us to procure the scheme through a competitively appointed third party under a design, build, finance, maintain and operate model.

**70** To achieve an out-performance payment, we must appoint a competitively appointed provider (CAP) in circumstances where the direct procurement for customers (DPC) scheme meets certain qualifying criteria outlined by Ofwat.

**71** However, Ofwat confirmed to us on 13 May 2022 that it has accepted that Anglian Water will not now progress the initially proposed Elsham DPC scheme (aka Middlegate), and instead will take forward the alternative North Lincolnshire Alternative Solution. Ofwat will not at this stage de-designate Middlegate as a DPC scheme but expects Anglian to take the alternative solution forward at pace. We are working with Ofwat on the communication of this to the market to make clear that we are pursuing an alternative solution under which the initially proposed Middlegate scheme is not required.

**72** At this stage it is expected that these PCs will no longer be required, so we have reported these measures as N/A for 2021/22.

**Table 3B - Outcome performance - Wastewater performance commitments**

Line description	Unique reference	Unit	Performance level - actual	PCL met?	Outperformance or underperformance payment	Forecast of total 2020-25 outperformance or underperformance payment
					£m	£m

Common PCs - Wastewater (Financial)						
Internal sewer flooding	PR19ANH_7	Number of internal sewer flooding incidents per 10,000 sewer connection	1.73	No	-1.099	6.000
Pollution incidents	PR19ANH_8	Pollution incidents per 10,000 km of sewer length	33.75	No	-4.454	-11.500
Sewer collapses	PR19ANH_13	Number of sewer collapses per 1,000 km of all sewers	5.57	Yes	0.000	-1.126
Treatment works compliance	PR19ANH_14	%	98.22	No	-1.051	-1.051

Bespoke PCs - Wastewater (Financial)						
External Sewer Flooding	PR19ANH_17	nr	4181	No	-0.167	7.000
Bathing Waters Attaining Excellent Status	PR19ANH_19	nr	32	No	0.000	-
Water Industry National Environment Programme	PR19ANH_32	nr	1184	Yes	1.078	6.000
Partnership working on pluvial and fluvial flood risk	PR19ANH_42	number	35	-	0.000	-
Additional sludge treatment capacity at Whitlingham	PR19CMA_ANH-01	%	n/a	-	0.000	-

19	Financial wastewater performance commitments achieved	%	29
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**1** The information we have published in table 3B is consistent with the updates we have reported to our Independent Challenge Group (previously our Customer Engagement Forum) during the course of the year.

**2** We have set ourselves a target to achieve a net reward under the performance framework (across all price controls, including C-Mex and D-Mex) in the 2020-25 price control period. The rewards and penalties we have quoted in the 'forecast' column are consistent with that target.

**3** We are currently developing our Drainage and Wastewater Management Plan (DWMP) to improve the lives of people, and the environment, in the East of England over the long-term. We will use it to plan for investment in drainage, treatment and sewerage



systems. To be published in 2022, our DWMP will be our next phase in long-term planning, covering the period 2025-2050. Framed by our Strategic Direction Statement, our new co-created 25 year forward vision for the region which will follow on from the Water Recycling Long-Term Plan (WRLTP) published in 2018. This will drive improvement across all our wastewater performance commitments.

### **Internal Sewer Flooding (3B.1)**

**4** There were 497 internal flooding incidents in 2021/22. This includes 70 incidents caused by overloaded sewers and 427 incidents caused by other causes including blockages, collapses, equipment failure, pumping station failure and due to third party causes. This total includes severe weather events. We had a total of 26 internal flooding incidents due to severe weather events in 2021/22.

**5** Our flooding performance commitment is calculated by dividing the total number of internal incidents by every 10,000 sewer connections. The total number of sewer connections is reported in thousands in table 4R (2,872,648) and is replicated in table 3G. The calculated performance level is 1.73, which is populated in table 3B.

**6** In 2020/21 we reported 380 internal flooding incidents. In 2021/22 we have seen an increase in our internal flooding numbers, especially flooding caused by other causes. This includes an increase in flooding incidents caused by blockages. To address this decline in performance we plan to increase our Planned Preventative Maintenance programme in 2022/23.

### **Common Methodology Compliance**

**7** We are fully compliant with the Sewer Flooding common definition. We have not changed our methodology for calculating the number of incidents that were caused due to severe weather. We do not use the classification options for severe weather for "multiple rainfall events", surface water run-off not originated from public sewer" and "river levels > 1 in 100 year return period". Regardless of whether they are categorised as severe weather or not, these incidents must be reported as there is no exclusion for severe weather impact. As a result, there is no impact on our reported performance.

### **Pollution Incidents (3B.2)**

**8** The definition of this measure is taken from version nine of the Environmental Performance Assessment (EPA) methodology document: the total number of pollution incidents (categories one to three) from sewerage assets per 10,000km of sewer length for which the company is responsible in a calendar year. The number we have used to normalise the absolute total number of pollution incidents is also taken from this document (76,437km).

**9** There has been an increase in the number of total pollution incidents categories one to three in 2021 (258) compared to 2020 (210). This performance of 33.75 incidents per 10,000km sewer does not meet the performance commitment level of 181 (23.74 per 10,000 km), leading to a penalty of £4.454 million.

**10** The uplift in pollution incidents is mainly attributed to exceptional and prolonged wet weather, which began prior to Christmas Eve December 2020 and persisted for 11 weeks. December and January were recorded as the wettest months on record in the East of England since 1915. With high groundwater levels, saturated ground and burst rivers, our network was inundated with rain and surface water, and in some parts of our region, hydraulically unable to function. We saw an additional four million litres of water pass through our water recycling networks every day compared to the same period in the previous year. In comparison with our three-year historical average, 52 more incidents with a root cause of hydraulic overload were recorded in 2021. Overload was a more significant proportion of our total incidents in 2021 (34 per cent), overtaking blockages as the top root cause for the first time in three years.



**11** The backdrop of the pandemic also made managing this event more difficult. Like other sectors, we were grappling with supply chain issues, lack of HGV drivers to provide tankering services, changed working practices and varying staffing levels.

**12** We have also seen an increase in the number of serious pollution incidents in 2021 (14) compared to 2020 (10), with one incident, regrettably, categorised as Category 1. We have seen a rise in bursts on our pressurised rising mains this year (36 per cent of serious incidents), which is a result of excess pressure on these assets during the wet weather event and associated ground movement. Our Pollution Incident Reduction Plan specifically tackles this asset class through a plan of increased monitoring, early detection, mitigation and replacement. Other parts of our plan look to increase our response time to such events so that they can be contained more quickly, thus reducing their impact on the environment.

**13** We are absolutely dedicated to the reduction of pollution incidents. It forms part of our purpose to 'bring environmental and social prosperity to the region we serve'. Even in acknowledging the challenges of the wet weather and pandemic, we are not satisfied with our performance in 2021 and know we must improve. Every incident that occurs is one too many. Our Pollution Incident Reduction Plan for year three is our most ambitious and challenging yet. It covers both preventative measures, such as focused Planned Preventative Maintenance and our Flush to Treatment programme, and measures to help us detect issues sooner and respond more quickly. These include our clever 'missing sewage' analytics which detects when flow does not arrive where it should and reviewing alarm prioritisation.

**14** To help with our external environmental messaging, partnership working and environmental strategy, we have also appointed a Director of Quality and Environment who will specifically oversee our "Get River Positive" strategy, within which pollution performance will play a key role.

**15** Our Pollution Incident Reduction Plan and details of our 'Get River Positive' strategy are available on our website.

### **Sewer collapses per 1,000 kilometres of sewers (3B.3)**

**16** There were 287 reactive sewer collapses and 132 reactive burst rising mains, totalling 419 for 2021/22. The total number of sewer collapses and burst rising mains (419) is divided by the total length of sewer reported for 2021/22 (77.037), giving a rate of 5.44. We have seen a decrease this year compared to 2020/21. In part, this could be attributed to a focus of capital investment on repeat burst rising mains. In addition it has been a drier year, which has put less pressure on our network.

### **Common Methodology Compliance**

**17** We are fully compliant with the sewer collapses common definition. We have not changed our methodology for calculating the length of formerly private sewers since our 2021 APR submission. While this is compliant to the letter of the definition (to report the length of transferred sewers separately), we have previously reported this line to Ofwat as "amber" on compliance due to the low confidence in the data that we believe exists across the industry.

**18** Our estimate of our length of formerly private sewers is based on initial assessments made at the time of the transfer. We do not expect to improve significantly the accuracy of this figure in the near term as the proactive mapping of transferred sewers is generally agreed to be uneconomic. We are aware that our approach is consistent with most of the industry in that we continue to use the modelled lengths calculated at the time of the transfer.

### **Treatment Works Compliance (3B.4)**

**19** In accordance with the conclusions of Ofwat's consultation on the methodology to use for assessing this performance commitment for 2021 to 2025 (published May 2021), we have reported in line with the Environment Agency's Environmental Performance Assessment methodology version 9.

**20** This is a measure of the number of our water treatment works and water recycling centres which were compliant during 2021 as a percentage of our total number of discharges with numerical consents. The data are sourced from the Environment Agency End of Year (EoY) Performance report.

**21** Out of 843 discharges at sites with numeric consents, fifteen sites were non-compliant for 2021. At 98.22 per cent compliance for 2021, this is a deterioration compared to 2020 (six works out of 848, 99.29 per cent, on a like-for-like basis).

**22** The fifteen non-compliant Treatment Works were Aylsham WRC, Brackley WRC, Cliff Quay WRC, Clifton WRC, Clophill WRC, East Dereham WTW, Ely (New) WRC, Eye WRC, Isleham WRC, Ketton WRC, Newnham (Herts) WRC, Oving WRC, Pertenhall WRC, Potton WRC and Weedon WRC.

**23** The numbers in our EoY report include our discharges that are located in other EA regions, such as our Hartlepool treatment works and those in the EA's Thames region.

**24** In January and February 2021 there were significant flooding incidents in the Anglian Water region, which presented a challenge to the performance of the Water Recycling Centres. This also had an impact on sludge movements due to tanker availability to support the flooding, which impacted on the performance of the sites into the summer. A number of initiatives have been undertaken to improve performance on sites.

## **Water Recycling**

- Enhanced monitoring at high-risk sites
- Installation of additional tertiary treatment
- Targeted investment on sites with a compliance risk
- Review of iron risks on sites

## **Water**

- Reporting of internal monitoring data, giving better visibility of data and triggers, is now business as usual, with Supply and Asset Health teams fully involved
- Investigation trigger levels have been further reviewed, with some site-specific limits trialled and implemented. Two trigger levels are in place: the first initiates a desktop review, the second a site visit with action planning.

## **External Sewer Flooding Incidents (3B.5)**

**25** There were 4,181 external flooding incidents in 2021/22. This includes 263 incidents caused by overloaded sewers and 3,918 incidents caused by other causes including blockages, collapses, equipment failure, pumping station failure and due to third party causes. This total includes severe weather events; we had a total of 89 external flooding incidents caused by severe weather events in 2021/22.

**26** In 2020/21 we reported 3,628 external flooding incidents. In 2021/22 we have seen an increase in our external flooding numbers, especially flooding caused by other causes. We have also seen an increase in flooding incidents caused by blockages. To address this decline in performance we plan to increase our Planned Preventative Maintenance programme in 2022/23.

## **Bathing waters attaining excellent status (3B.6)**

**27** In 2020 the Environment Agency did not take the samples required to classify bathing waters due to its interpretation of the restrictions imposed by the Covid-19 pandemic. The assessment of bathing waters under the regulations depends on the sampling results from the latest four years, and the lack of sufficient data for 2020 meant that assessments for 2020 were not made. Following consultation, Defra confirmed that classification for 2021 would use the following 4 years' worth of data: 2017, 2018, 2019, 2021.

**28** The number of bathing waters designated as 'Excellent' in 2021 was 32. A further 13 bathing waters were designated as 'Good'.

### **Water Industry National Environment Programme (WINEP) (3B.7)**

**29** We have delivered a total of 664 obligations in Year 2 of the WINEP (2021/22) set by the Environment Agency in March 2019. This give us a total of 1,184 in AMP7 to date against a baseline of 1,006 . Highlights of our programme include

- 66 storm tanks installed to increase storage capacity and reduce risk of spills
- Event Duration Monitors on storm overflows at 181 Water Recycling Centres (under the UMON3 driver)
- 148 Event Duration Monitors on storm overflows on the sewerage network (under the UMON2 driver) and
- 122 water resources obligations.

### **Partnership working on pluvial and fluvial flood risk (3B.8)**

**30** This performance commitment is designed to incentivise the company to work in partnership with others to deliver investment to protect its wastewater treatment sites and water recycling network from pluvial, fluvial and coastal flooding.

#### **We have defined an output as follows:**

- A partnership scheme providing increased capacity to the sewer network shall count as one output
- Where partnership schemes provide greater resilience to one or more of our above ground assets, each individual asset shall count as one output (e.g. one pumping station and one WRC protected would count as two separate outputs).

**31** We delivered 14 outputs in 2020/21. A further 21 regulatory outputs were delivered between April 2021 and March 2022 across 12 schemes. A number of schemes delivered multiple regulatory outputs.

**32** A table of all schemes and the respective number of regulatory outputs are in the table below:

<b>Scheme Name</b>	<b>Regulatory Outputs</b>	<b>Partner(s)</b>
Altham Terrace, Lincoln	1	Lincolnshire County Council
Tallington	1	Lincolnshire County Council
Modelling - budget to allow modelling of future partnership schemes.	1	N/A
Wash East Recycling	2	Environment Agency
Lincoln Defences	4	Environment Agency
Maldon	1	Environment Agency
Northamptonshire LENS	4	West Northamptonshire Council
Dunstable Town Centre	2	Central Bedfordshire Council
Great Yarmouth Epoch 2	2	Environment Agency
Aspley Guise	1	Central Bedfordshire Council
Burston	1	Burston Parish Council
Scopwick	1	Lincolnshire County Council

**Table 3C - Customer measure of experience (C-MeX) table**

	Item	Unit	Value
1	Annual customer satisfaction score for the customer service survey	Number	79.14
2	Annual customer satisfaction score for the customer experience survey	Number	81.72
3	Annual C-MeX score	Number	80.43
4	Annual net promoter score	Number	29.00
5	Total household complaints	Number	15,974
6	Total connected household properties	Number	3,027,131
7	Total household complaints per 10,000 connections	Number	52.769
8	Confirmation of communication channels offered	TRUE or FALSE	TRUE

**1** C-MeX is the Customer Measure of Experience, it is comprised of two surveys, the Customer Satisfaction Survey (CSS) and the Customer Experience Survey (CES).

**2** CSS survey aims to measure the experience of customers following a recent interaction with their water company.

**3** CES surveys aims to measure the overall experience of their water company, by surveying a random sample of members of the public within our region.

#### **Annual customer satisfaction score for the customer service survey (3C.1)**

**4** For Customer Service (CSS) we achieved fourth position amongst Water and Sewerage Companies (WaSCs).

**5** Upon analysing our CSS performance, we have made continual improvements across all areas from the start of the reporting period to the end of the reporting period.

**6** Within the CSS our Billing score increased by 5.47 points, our Water score by 3.05 points and Waste by 3.97 points. Overall, the CSS score improved by a total of 4.49 from Quarter 1 to Quarter 4.

**7** Our billing performance which represents 92 per cent of the contacts we received during 2021/22 achieved a position of 4th place amongst WASCs.

**8** Comparisons between companies remains ambiguous, as sampling quotas are aligned to the proportion of digital and non-digital contacts received by each company. This varies significantly across the industry. C-MeX has demonstrated there is a clear variance between telephone and online survey respondent scores. The variance is attributed to the survey method as opposed to the channel of contact.

#### **Annual customer satisfaction score for the customer experience survey (3C.2)**

**9** For Customer Experience we achieved a score of 81.72 and a position of tenth place across all water companies and seventh place amongst WASCs.

#### **Annual C-MeX score (3C.3)**

**10** Our overall C-Mex position at the end of the reporting year was ninth across all companies and sixth position amongst Water & Sewerage Companies, with a score of 80.43.

#### **Annual net promoter score (3C.4)**

**11** Our combined Net Promoter Score achieved was 29.00.

### **Total household complaints (3C.5)**

**12** This year we have been able to achieve a significant reduction in complaints volumes. Overall, we have seen a reduction of 30 per cent across all areas and channels. The volume of billing complaints reduced by 35 per cent, Water 10 per cent and Waste 27 per cent.

**13** We have increased the level of insight and analytics performed into our complaints performance. Internally we have implemented a complaints reduction working group to drive change and service improvements.

**14** This has helped identify areas of focus, as a result we have issued bitesize refreshers and training material to our customer facing teams to help tackle and improve any knowledge gaps. We have also enhanced and improved the information available to our customers to help prevent some of our most common queries and causes of complaints.

### **Total connected household properties (3C.6)**

**15** The number of connected properties has seen a marginal increase from 2020/21 to this reporting year. This is the net result of growth, additional data cleansing activities performed throughout the year, reductions in the number of voids and the reclassification of NHH properties.

### **Total household complaints per 10,000 connections (3C.7)**

**16** Work continues across the industry to embed new reporting practices, as a result we are unable to provide a comparison to previous years due to the change in criteria and the expansion of channels in which a complaint can be reported.

### **Confirmation of communication channels offered (3C.8)**

**17** In total we operate 11 communications channels, providing a diverse range of methods in which our customers can contact us. We continually evaluate and analyse our customer communication preferences and demand to ensure we are providing a service that meets our customers' needs and lifestyles. Next year we will be looking to expand the communication channels available in line with customer preferences to make life easier for our customers every single day.

**Table 3D - Developer services measure of experience (D-MeX) table**

	Item	Unit	Value
1	Qualitative component annual results	Number	75.44
2	Quantitative component annual results	Number	99.64
3	D-MeX score	Number	87.54
4	Developer services revenue (water)	£m	32.540
5	Developer services revenue (wastewater)	£m	18.128

Calculating the D-MeX quantitative component				
	Water UK performance metric	Unit	Reporting period (1 April to 31 March)	Quantitative score (annual)
W1	SAM - 3/1	%	100.00%	
W2	SAM - 4/1	%	100.00%	
W3	SLPM – S1/2	%	100.00%	
W4	SLPM - S2/2a	%	100.00%	
W5	SLPM - S2/2b	%	95.45%	
W6	SLPM – S3	%	100.00%	
W7	SLPM – S4/1	%	100.00%	
W8	SLPM – S5/1a	%	100.00%	
W9	SLPM – S7/1	%	100.00%	
W10	S1.1	%	99.83%	
W11	S3.1	%	100.00%	
W12	S7.1	%	100.00%	
W13	W1.1	%	99.55%	
W14	W17.1	%	100.00%	
W15	W17.2	%	100.00%	
W16	W18.1	%	100.00%	
W17	W26.1	%	100.00%	
W18	W27.1	%	100.00%	
W19	W3.1	%	99.25%	
W20	W30.1	%	100.00%	
W21	W4.1	%	98.03%	
W22	W6.1	%	100.00%	
W23	W7.1	%	100.00%	
W24	W8.1	%	100.00%	
W25	SN2.2	%	100.00%	

W26	WN1.1	%	100.00%
W27	WN2.2	%	97.22%
W28	WN4.1	%	100.00%
W29	WN4.2	%	100.00%
W30	WN4.3	%	100.00%

7	D-MeX quantitative score (for the relevant reporting period)	%	99.64%
8	D-MeX quantitative score (annual)	Number	1.00

### Qualitative component annual results (3D.1)

**1** Our qualitative (customer survey) score (75.44) has remained stable throughout the year compared with 2020/21 (75.73).

### Quantitative component annual results (3D.2 and 3D.6-8)

**2** Our performance against the quantitative element of D-MeX (Water UK Level of Service) dipped slightly in 2021/22 but remained strong across the year and firmly positioned within upper quartile across all of our customer groups.

**3** We are pleased with how we have implemented the new Codes for Adoption (Water) and New Appointment and Variation (NAV) metrics which were introduced in January 2021 and performed well against the measures across the past year.

### D-MeX score (3D.3)

**4** Our D-MeX score for 2021/22 is 87.54, which places us seventh in the industry and sixth out of the Water and Sewerage Companies.

### Developer services revenue (water and wastewater) (3D.4 and 3D.5)

**5** The impact of the increased output during the year has resulted in the total contribution received from developers to increase compared to 2020/21.

**Table 3E - Outcome performance - Non financial performance commitments**

	Line description	Unique reference	Unit	Performance level - actual	PCL met?
	<b>Common</b>				
1	Risk of severe restrictions in a drought	PR19ANH_9	%	5.2	Yes
2	Priority services for customers in vulnerable circumstances - PSR reach	PR19ANH_22	%	9.4	Yes
3	Priority services for customers in vulnerable circumstances - Attempted contacts	PR19ANH_22	%	100.0	Yes
4	Priority services for customers in vulnerable circumstances - Actual contacts	PR19ANH_22	%	62.2	Yes
5	Risk of sewer flooding in a storm	PR19ANH_10	%	0.75	Yes
	<b>Bespoke PCs</b>				
6	Reactive Mains Bursts	PR19ANH_18	nr	3322	No
7	Customer awareness of the company's Priority Services Register	PR19ANH_21	%	52.5	Yes
8	Operational carbon	PR19ANH_24	%	9.4	Yes
9	Capital carbon	PR19ANH_25	%	63.1	Yes
10	Non-household Retailer Satisfaction	PR19ANH_30	score	90.6	Yes
11	Event Risk Index (ERI)	PR19ANH_35	score	0.972	Yes
12	British Standards Institution - Standard for Inclusive Service	PR19ANH_36	text	Maintained	Yes
13	Helping those struggling to pay	PR19ANH_37	nr	324,750.0	Yes
14	Value for Money	PR19ANH_40	%	77	No
15	WINEP Delivery	PR19ANH_NEP01	text	Met	Yes
16	Community investment	PR19ANH_43	%	137.5	Yes
17	Customer trust	PR19ANH_44	score	0.34	Yes
18	Natural capital impact	PR19ANH_45	text	Fail	No
19	Regional collaboration	PR19ANH_46	text	On track	Yes
Non-financial performance commitments achieved			%	84	



### Risk of severe restrictions in a drought (3E.1)

**1** The Ofwat guidance relates to the fixed period 2020-2045. The percentage of customers at risk has been provided for, based on the total population across seven Water Resource Zones that could (in planning terms) experience severe supply restrictions during a 1-in-200 year drought. The seven Water Resource Zones are Bury Haverhill, Central Lincolnshire, Cheveley, Newmarket, Ruthamford South, South Essex and South Fenland (as defined for WRMP19).

**2** Bury Haverhill, Central Lincolnshire, Cheveley, Newmarket and South Fenland have customers at risk from a severe restriction in a 1-in-200 year drought. Ruthamford South and South Essex are included due to having baseline deficits that effectively means a 1-in-200 year drought would have an impact (non-drought investment will eliminate this deficit).

**3** The 25 year average percentage of the population the company serves that would experience severe supply restrictions is 5.2 per cent, and is unchanged from the previous year. The 25 year average total population at risk is 277,063.

**4** There are no knock-on impacts to other Water Resource Zones and no Water Resource Zones that have 1-in-200 year drought impacts are in deficit as reported for the SDBI.

### Priority services for customers in vulnerable circumstances - PSR reach (3E.2)

**5** From 1 April 2021 to the 31 March 2022, we have been able to increase the level of support provided to customers on our Priority Service Register (PSR) by over 100,000, taking our overall reach from 6 per cent of households to 9.38 per cent.

**6** In total we added 122,382 customers to our Priority Service Register and through our data checking activities removed 20,309 customers who no longer require support. The total numbers of customers registered for support shows a continual build on the number of customers who were identified and added to the register the previous year.

**7** To calculate the PSR reach we have divided the total number of households on the PSR as of the 31 March 2022 by the total number of residential billed and unbilled properties, excluding voids.

**8** The total connected properties figure includes those supplied with both water and/or wastewater services and properties that are billed by other water companies on our behalf.

**9** The below table shows a breakdown of the types of supports individual households are receiving through the PSR.

PSR Membership	Forecast for reporting year	Year-end total (31 March)
Households on PSR receiving support with communication	21,666	51,768
Households on PSR receiving support with mobility and access restrictions	77,378	170,462
Households on PSR receiving support with supply interruption	101,107	269,366
Households on PSR receiving support with security	4,127	5,280
Households on PSR receiving support with 'other needs'	2,063	3,199

**10** The first column shows the type of support, the second column shows the forecast figures based on our Year 2 target and the third column shows the numbers of households receiving support as of 31 March for the report year.

**11** There is a sizeable difference between our forecast figures and our year-end total as we have exceeded our year one target by 92.6 per cent. It is also worth noting that the projections were calculated based on a substantially smaller dataset and various factors

may have influenced a change in demand for support services, such as enhanced service offerings, partnerships working with organisations and charities that target specific user groups and the pandemic.

**12** The increase is the direct result of our customer facing teams proactively responding to disclosures of vulnerability and signposting our Priority Service register. This year we also launched bespoke vulnerability training in partnership with Money Advice Trust to strengthen the skills of our customer facing teams to identify vulnerability and effectively encourage and respond to disclosures.

**13** Across the course of the year we have also undertaken a number of large promotional campaigns advertising the many ways in which we are able to support through both direct and indirect communications. This includes extensive engagement with a wide range of organisations who support those in most in need.

### **Priority services for customers in vulnerable circumstances - Attempted contacts (3E.3)**

**14** The percentage of customers contacted during 2021/22 reflects the numbers of customers who have been on our Priority Service register for more than two years and have received two or more attempts to confirm they are receiving the right support.

**15** The percentage of attempted contacts also includes customers whom we have successfully managed to re-engage with to confirm their support needs.

**16** We have utilised a number of different contact methods aligned to customer communication preferences using bespoke communication messages. Customers are also able to update their support needs at any time using our online account management portal and mobile app.

### **Priority services for customers in vulnerable circumstances - Actual contacts (3E.4)**

**17** Our actual contact figures represent the percentage of customers who have been on the register over two years and have confirmed their support needs, including those that no longer require support as part of our Priority Service register.

**18** The majority of those no longer requiring support are those who have vacated and no longer reside within our region or those that have subsequently passed away.

**19** As a result of our tailored communication strategy and bespoke messaging we have been able to achieve actual contact with 65 per cent of our customers. We have also created the ability for our customers to update their Priority Services registrations and support needs at a touch of a button, by having the capability to manage their services in real time using our online account management portal and mobile app.

**20** We have enhanced our communication strategy to capture customer communication preferences and updated our internal systems to provide greater visibility across our customer facing teams. The enhanced system changes provide prompts to our agents during key interactions and touch points, reminding them re-confirm the support needs as part of our day-to-day conversations. In doing so, we have removed the need for additional unnecessary contacts and reduced customer effort, with the aim of making every contact count.

### **Percentage of population at risk of sewer flooding in a 1-in-50 year storm (3E.5)**

**21** For 2021/22, we have continued to use vulnerability risk grades one and five. Risk grade one represents the population equivalent (PE) not at risk from flooding, as identified using the Option 1b methodology, for all catchments across our region. We continue to not exclude any catchments so to provide the true picture of risk, and to assist with future reporting and trend analysis.

**22** Risk grade five represents the PE identified as flooding in a 1:50 annual return period (ARP) event using the Option 1b methodology.

**23** The numbers that contribute to the summary reporting table are shown in the following table:

<b>Total number of catchments</b>	<b>1,127</b>
Total number of catchments PE. > 2,000	310
Total number of catchments PE < 2,000	817
Total PE served	6,440,916
Total PE in included catchments	6,440,916
Total PE in excluded catchments	0
Percentage of total PE in excluded catchments	0%
Total PE Option 1a	0
Percentage of total PE. Option 1a	0%
Total PE Option 1b	6,440,916
Percentage of total PE Option 1b	100%

**24** We now have 1,127 modelled catchments, serving a population of over 6.4 million people. This is 12 fewer catchments than in 2020/21 – details of 13 catchments removed, and the reasons why, can be found in the table below as well as a reference to the Ely catchment which has been replaced by another.

Short Code	Catchment Name	Modelled Population	Reason for missing data	Action
ELYSC	Ely	12148	Replaced by Ely New - ELYNSC	line no longer required
FISHSC	Fishtoft	7682	Hydraulically linked to BOSTSC - please see BOSTSC for model	line no longer required
GCASSC	Great Casterton	356	Drains to STAMSC	line no longer required
JAYNSC	Jaywick	28137	Now included in Clacton model	line no longer required
KENSSC	Kenninghall-School Close	151	Model part of EHARSC	line no longer required
LOWESC	Lowestoft	75380	2D mesh simulation issue	Use last year's data until update available
NPALSC	Newport Pagnell-London Rd	15501	Model part of Cotton Valley	line no longer required
POPPSC	Poppyhill	19823	Drains to CLIFSC	line no longer required
RAYWSC	Rayleigh-West	22318	Linked to RAYESC	line no longer required
REPMSC	Reepham (Lincs)	8072	Drains to CANWICK	line no longer required
NWTMSC	Tetney-Newton Marsh	58204	Model hydraulically linked to PYEWSC	line no longer required
TRUNSC	Trunch-N Walsham Rd	123	TRUNSC is hydraulically linked to MNDSSC	line no longer required
WASHSC	Washingborough	11197	Model hydraulically linked to CANWSC	line no longer required

**25** Due to our modelling capability, Option 1b remains the most appropriate option for undertaking this vulnerability assessment. This year, we have brought the modelling in-house, but retained the methodology developed by RPS. The only change is in the property threshold level, which this year has been lowered to 150mm, in line with the rest of the water industry.

**26** As the modelling has been brought in-house this year and due to the new threshold levels, all catchments have been modelled again. We were unable to model one catchment – Lowestoft (see table above for details) - and used 2020/21 data instead. These should be a close representation to the 2021/22 data and the impact on the final figures will be negligible.

**27** The results for 2021/22 are shown below:

High level vulnerability grade	5
Total number of catchments	1,127
Total number of nodes modelled	839,772
Total number of nodes predicted to flood	103,791
Percentage of nodes predicted to flood	12%
Total PE in modelled catchments at vulnerability risk grade	6,440,916
Total PE associated with flooding nodes	48,512
PE associated with flooding nodes as a percentage of total modelled PE	0.75%
Assessed overall model confidence grade	B4

**28** The following should be noted about the above information:

- We have continued to count only those properties (and the associated population equivalent) that have been flooded internally, in line with the rest of the industry.
- In our models, internal flooding now occurs when the depth of water touching the property boundary is greater than a 150mm threshold.
- Due to the change in threshold level, the reportable population equivalent at risk of internal flooding has risen from 0.37 per cent to 0.75 per cent.
- As we have brought the process in house this year and have changed the thresholds, we have undertaken some sensitivity analysis which shows that the total number of flooding incidents remains the same, but the number of internal flooding incidents increases significantly when the threshold is lowered to 150mm. As such, we want to compare this year with next year before making any further decisions about the methodology.
- Occupation figures are based on 2020/21 data.
- It remains the case that c. 50,000 p.e. will need to be made more resilient to show a 1 per cent improvement in the p.e. at risk. With this in mind, we continue to report the p.e. at risk to two decimal places.

**29** Based on the above, we consider our overall model confidence to remain at B4, for the same reasons as last year.

### **Reactive mains bursts (3E.6)**

**30** There were 3,322 reactive bursts in 2021/22, compared to 4,037 in 2020/21. We attribute this improvement to the milder winter months, along with a renewed focus on proactive leak detection.

**31** For AMP7 we have moved away from our method of reporting using the WISPA (Water Infrastructure Serviceability Performance Assessment) Model. This model is now used internally to better understand the impact of external factors such as soils, tree roots and weather on our assets in order to improve our prioritisation of mains rehabilitation schemes and leakage reduction programmes.

### **Customers aware of the priority services register (3E.7)**

**32** To measure the percentage of customers aware of Priority Services, we have conducted an independent survey of 2001 customers. Customers were selected at random and engaged through both digital and non-digital channels. Customers were asked if they are aware of additional free services provided by Anglian Water known as Priority Services, of which 52.5 per cent of respondents said yes.

**33** Throughout 2021/22 we have undertaken a wide range of promotional activities to increase awareness. We have issued more than 3.3 million emails to our customers throughout the year, promoting both the financial and non-financial assistance available. Through social media campaigns we have been able to reach in excess of 1.1 million of our customers.

**34** Further promotional campaigns to increase awareness include radio advertisements, promotion through local parish councils and advertisements on over a quarter of million pharmacy bags. We have also promoted the support we offer through our network of more than 150 partners who directly support those in vulnerable circumstances, such as Scope, Marie Curie and local foodbanks.

**35** We continue to look at new ways to increase awareness and have actively engaged our customers to understand how they would like to hear about the support available. We will use our customers' feedback to inform our future communication strategy to extend our reach.

### **Operational carbon (3E.8)**

**36** In June 2022 Ofwat published the conclusions of its consultation on which version of the Carbon Accounting Workbook (CAW) to use for carbon reporting, ('Carbon accounting workbook (CAW): consultation on proposed changes to the CAW version referred to in 2020-25 performance commitments (PCs)') and an associated amendment to how our performance commitment is to be calculated. We subsequently discussed and confirmed our calculation methodology with Ofwat in a meeting between David Riley, Head of Carbon Neutrality at Anglian Water, and Ofwat on 15 June 2022. For 2019/20 (our baseline year) we have used CAWv16 using the market based emissions factor from our electricity supplier (SSE) applicable in 2019/20. For 2021/22 we have used CAWv16 using the market based emissions factor from our electricity supplier (SSE) applicable in 2021/22. All subsequent years of the AMP will be reported using CAWv16

**37** Grid electricity consumption has reduced 0.68 percent over the base year owing to reductions in the volumes of water supplied and waste recycled. Our optimisation programme also delivered a positive contribution, with 7.9GWh (full year effect) of energy savings, mitigating 2,499 t/CO<sub>2</sub>e. We continue to see lower levels of business travel compared to the pre-pandemic base year. Some lingering Covid-19 restrictions, along with the adoption of new ways of working across the last two years, have resulted in a reduction in emissions from business travel, which have reduced by 636t/CO<sub>2</sub>e (67 percent) against base year. For both company vehicles and private vehicle for business travel we have seen an increase in the total mileage being undertaken by electric vehicles, with this percentage doubling.

**38** In 2022 we have achieved a 9.4 per cent reduction in gross operational carbon against our target of 4 per cent and have therefore achieved our performance commitment level.

### **Embodied carbon (3E.9)**

**39** We achieved a 63.1 per cent reduction in capital carbon against our 2010 baseline.

**40** Our PCL for 2021/22 is a reduction of 62 per cent on the 2010 baseline, which we have achieved.

### **Non-household retailer satisfaction (R-MeX) (3E.10)**

**41** In order to calculate this measure there are three detractors, which are Net Promoter Score (NPS), Operational Performance Standards (OPS) and Market Performance Standards (MPS).

**42** The OPS and MPS results are published via MOSL, the market operator, after they have been independently validated. MPS is calculated by the central market system (CMOS) and OPS is again validated by MOSL after we submit a MOSL data sheet containing OPS tasks completed and outstanding for the given period.

**43** Net Promoter Score is taken during each formal Account Management meeting with our Retailers. It is captured as part of the formal meeting minutes shared between the two parties.

**44** In line with Ofwat's published PR19 Outcomes & Performance commitments for Non-household retailer satisfaction (1.2.11 page 77), we use the three performance results to complete the calculation, giving us a score of 90.6 for 2021/22, exceeding our performance commitment. This is an improvement on year one, where we reported 74.6.

### **Event Risk Index (3E.11)**

**45** The DWI has developed the Event Risk Index (ERI), alongside CRI, for measuring event-based risk.

**46** The ERI is calculated based on the event severity, DWI assessment, impacted population and event duration. This is converted into a company ERI by dividing the sum of the scores for the year by the population served by the company.

**47** In 2021 the provisional ERI score calculated by the DWI for Anglian Water (including Hartlepool) was 0.972. This does not include the assessed scores for four events which are still under consideration by the DWI. The 2021 ERI score is a significant improvement over the 2020 figure of 6.16 and reflects the continued efforts by us to minimise adverse impacts to water quality on the rare occasions when failures do occur. Our final ERI score will be published by the DWI in the Chief Inspector's Report for 2021.

### **BSI standard for inclusive service (3E.12)**

**48** We completed our annual assessment for BSI 18477 Inclusive Service Provision in October 2021. A statement of approval was given for our compliance with the requirements.

**49** Continual improvement against the standard was demonstrated by:

- the creation and implementation of the Priority Services team
- the development of additional resource available to all staff on issues related to Sensory Disabilities
- updates to software enabling greater capture and visibility of PSR information by a wider number of staff, enabling field force to be better prepared when visiting PSR customers
- lessons learned by the Priority Services team from the incident room for future incidents.

**50** The auditor highlighted an increasing awareness and implementation of the standard across the business and that staff interviewed showed a good level of understanding of the need for and ways of delivering against customer vulnerability. The auditor also stated there was clear commitment demonstrated from the top down to a high degree, with a constant sense the company is seeking better ways to serve its customers.

**51** The audit identified no areas of non-conformity and one opportunity for improvement (OFI) was raised. The OFI raised was to look at the changes to the standard from the BS18477:2010 to ISO22458:2022, planned to be published in June 2022. We have proactively performed gap analysis against the new standard and have requested to be one of the pilot companies to adopt the new standard.

### Helping those struggling to pay (3E.13)

**52** We supported 324,750 customers throughout 2021/22. The breakdown by scheme is summarised in the below table:

Scheme	Customers supported
Forgiveness schemes	6,627
Payment holidays	9,320
Concessionary tariffs	203,573
Charges holiday	1,979
Temporary instalment plans	177,445
Total instances of support	398,944
Total unique customers supported	324,750

**53** The Covid-19 pandemic and cost of living crisis have had a serious impact on many of our customers' household finances. We have mounted proactive communications campaigns to encourage those in difficulty to contact us to discuss their circumstances. We also understand that affordability will vary across time for the same household and can be driven by different circumstances. We have tailored the service that we offer customers who are struggling to pay, applying experience from across our business in order to target support most effectively.

**54** Using data analytics, we route customer contacts with high affordability risk through to our ExtraCare team, where we check to see if they are claiming all benefits to which their household is entitled. This year we have signposted customers to more than £1.7 million worth of potential unclaimed benefits.

**55** We then look to see what help we can provide to customers in managing their payments to us. This includes the schemes which are eligible for this performance commitment as well as others.

**56** All this support is captured under our WaterCare banner, to help customers identify the help available and to promote our services directly to target groups.

### Value for money (3E.14)

**57** In the CCW 2021 survey ('Water Matters'), 76 per cent of our customers said that they were "satisfied" or "very satisfied" when asked "How satisfied are you with the value for money of water services in your area?". This is the same as in 2020 and an increase compared to 74 per cent in 2019.

**58** The percentage who said that they were "satisfied" or "very satisfied" when asked "How satisfied are you with the value for money of sewerage services in your area?" increased to 78 per cent compared to 76 per cent in 2020 and 75 per cent in 2019.



**59** Our weighted performance commitment score is therefore 77 per cent and does not meet our performance commitment level of 79 per cent.

### **WINEP delivery (3E.15)**

**60** We delivered 667 obligations in Year 2 of the WINEP (2021/22), meeting all Environment Agency obligations. This figure includes three obligations that were not part of the WINEP used to set the baseline for our financial performance commitment. The total figure marks significant out-performance compared to original year 2 baseline (see Table 3B.7).

### **Community investment (3E.16)**

**61** Our community investment performance commitment consists of a number of different programmes and initiatives, from long-term strategic programmes to responding to one-off requests for support. It spans the breadth of our region and supports the communities we serve and the local environment too.

**62** This performance commitment tracks the beneficiaries of our community investment programme. The methodology used is provided by the London Benchmarking Group (LBG) framework which measures community investment that is both charitable and voluntary and allows us to measure the contribution we and our Alliances make to communities and the number of people directly reached or supported. For further information on methodology, please refer to the LBG Guidance Manual 2018. Please note, after setting this performance commitment LBG rebranded as Business for Societal Impact (B4SI).

**63** Following this methodology, during 2021/22 our community investment directly supported an estimated 67,837 people. A combination of easing Covid-19 restrictions, which enabled our programmes to interact with more people in person, and innovative online delivery means we have reached a noticeably greater number of people this year compared to 2020/21.

**64** This figure has been audited by Jacobs as required by our final determination.

### **Summary table**

	<b>Number of people directly reached or supported</b>
Education	58,924
People in vulnerable circumstances	7,201
Environmental	1,712
Total	67,837

**65** This performance commitment captures investment in communities which is reportable using the B4SI methodology, but there are also significant wider contributions which sit outside this reporting. For example, in 2021/22 the impact of the second phase of our £1m Anglian Water Positive Difference Fund has been felt in communities as they have adapted and rebuilt following the pandemic. This has not been included in our numbers as it was funded by Anglian Water Group, not Anglian Water Services.

**66** Further information and examples can be found in our Annual Integrated Report and Accounts 2022.

### **Customer trust (3E.17)**

**67** This performance commitment captures the trust that customers place in the company. The company is incentivised to improve the service and performance it delivers to customers in such a way that they can place a greater level of trust in the company.



**68** The performance commitment is calculated each year from a survey by CCW (formerly the Consumer Council for Water), which asks customers for feedback on their water and sewerage company. Customers are asked to what extent they trust their water company, on a scale of 1–10, with 1 being 'do not trust them at all' and 10 being 'trust them completely'. The measure of the performance commitment is the improvement of the company relative to the industry average of the CCW Trust score.

**69** The calculation is:

**70** (Our score minus average score of all water companies) minus (our score in 2019/20 minus average score of all water companies in 2019/20)

**71** The result of this calculation is shown in the following table:

	2019/20	2020/21	2021/22
Anglian Score	7.69	7.89	7.67
Industry Average Score	7.69	7.87	7.33
Anglian Difference	0	0.02	0.34
Anglian Improvement	0	0.02	0.34
Performance Commitment Level	0	0	0.01
PCL met?	Met	Met	Met

**72** Our absolute score for the survey question has fallen this year. However it has fallen by less than the industry average score. This means that our score as measured by the performance commitment has increased.

### Natural capital (3E.18)

**73** The Natural Capital Impact performance commitment captures the improvement the company makes through four sub-measures: water quantity, ground water quality, surface water quality and biodiversity. All sub-measures must be on track for the PC to be considered on track. In 2021/22 only three of the four measures are on track and so the overall PC must be considered to fail this year.

**74** The Water Quantity sub-measure must be classed as a fail for 2021/22. The target three year rolling average for distribution input/population was 232.9 litres/head/day but the actual was 239.7 l/h/d. This result is an impact of the dramatic change in water usage due to the Covid-19 pandemic across the UK and is not unique to our region.

**75** The Ground Water Quality sub-measure is on track. The nitrate engagement programme at Risby, Irby, Gayton and Wighton has been delivered and reported to the Environment Agency as required.

**76** The Surface Water Quality sub-measure is on track, with nine relevant WINEP schemes for 2021/22 delivered on target.

**77** The Biodiversity sub-measure is on track. The biodiversity net gain cumulative total percentage for AMP7 to the end of the financial year 2021/22 across our land management and construction activities for habitats measured by area is 302 per cent. This is through the delivery of 116.2396 Habitat Biodiversity Units against losses of 28.9392 Habitat Biodiversity Units. In line with the performance measure, this is reporting the percentage increase against measured losses only (not the percentage gain against the baseline position). These additional biodiversity units will be banked and made available to help other construction schemes during the course of AMP7 to meet their compensation requirements, where ecologically appropriate.

**Regional collaboration (3E.19)**

**78** This metric measures the collaborative approach to measuring and managing natural capital beyond the company's operational boundaries. It aims to drive the development of a regional approach to assessing and considering natural capital in strategic planning and decision making. In 2021/22 the Natural Capital East Group (NCE) met five times (May 21, July 21, November 21, January 22 and March 22) with representation from 15 organisations.

**79** The key activity in 2021/22 has been supporting the development of the Systematic Conservation Plan (now known as the Natural Capital Plan) that has been led by Water Resources East (WRE, a member of NCE). This was completed and published on the WRE website in January 2022 <https://wre.org.uk/projects/systematic-conservation-planning/>. In line with the NCE routemap the group is now considering if this can be used as a regional baseline or whether additional input is required. The metric is therefore considered to be on track.

**Table 3F - Underlying calculations for common performance commitments - water and retail**

Line description	Unit	Standardising data indicator	Standardising data numerical value	Performance level - Actual (current reporting year)	Performance level - Calculated (i.e. standardised)
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Performance commitments set in standardised units - Water					
Mains repairs - Reactive	Mains repairs per 1000 km	Mains length in km	38,789.43	3,322	85.64
Mains repairs - Proactive	Mains repairs per 1000 km	Mains length in km	38,789.43	1,418	36.56
Mains repairs	Mains repairs per 1000 km	Mains length in km	38,789.43	4,740	122.20
Per capita consumption (PCC)	lpd	Total household population (000s) and household consumption (Ml/d)	4,838.00	658.00	136.01

	6	7	8	9	10	11		11a	11b
Line description	Unit	Performance level - actual (2017-18)	Performance level - actual (2018-19)	Performance level - actual (2019-20)	Baseline (average from 2017-18 to 2019-20)	Performance level - actual (2020-21)	Performance level - actual (2021-22)	Performance level 3 year average (current and previous 2 years)	Calculated performance level to compare against PCLs

Performance commitments measured against a calculated baseline									
Leakage	Ml/d	191.3	199.9	191.0	194.1	182.4	173.4	182.3	6.1
Per capita consumption (PCC)	lpd	134.8	134.1	133.3	134.1	146.9	136.0	138.7	-3.4

Line description	Unit	Standardising data indicator	Standardising data numerical value	Total minutes lost	Number of properties supply interrupted	Calculated performance level
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**Water supply interruptions**

7	Water supply interruptions	Average number of minutes lost per property per year	Number of properties	2,273.64	22263840	62,395	00:09:48
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Line description	Current company level peak week production capacity (PWPC) MI/d	Reduction in company level PWPC MI/d	Outage proportion of PWPC %
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**Unplanned or planned outage**

8	Unplanned outage	1,777.82	30.596	1.72%
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Line description	Total residential properties (000s)	Total number of households on the PSR (as at 31 March)	PSR reach	Total number of households on the PSR over a 2 year period	Number of attempted contacts over a 2 year period	Attempted contacts %	Number of actual contacts over a 2 year period	Actual contacts %
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**Priority services for customers in vulnerable circumstances**

9	Priority services for customers in vulnerable circumstances	2,950.14	277,418	9.4%	81,502	81,502	100.0%	50,654	62.2%
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### Mains repairs - Reactive (3F.1)

**1** There were 3,322 reactive bursts in 2021/22, compared to 4,037 in 2020/21. This was a significant reduction, caused in part by a more benign winter across the region, along with an increased focus on proactive leak detection as part of our commitment to drive down leakage.

### Mains repairs - Proactive (3F.2)

**2** In 2021/22 we identified and repaired 1,418 bursts using proactive leak detection. This is a marked increase on last year and equates to about 30 per cent of all our bursts being proactively detected. The increase is attributable to a focused leak detection programme aimed at driving down our leakage level.

### **Mains repairs (3F.3)**

**3** This is a calculated field and is the sum of 3F.1 and 3F.2. The length of potable mains is 38,789.43km. This number is consistent with the number reported in table 6C.1.

### **Per capita consumption (PCC) (3F.4 and 3F.6)**

**4** Please see commentary for 3A.4.

### **Leakage (3F.5)**

**5** Please see commentary for 3A.3.

### **Water supply interruptions (3F.7)**

**6** This field takes the number of connected properties in the region and divides this into the total minutes that have been lost within the year to calculate the average number of minutes lost per property per year. The figure for 2021/22 is 00:09:48. The number of properties with their supply interrupted was 62,395.

**7** The total connected property figure is taken from 4R.27 (total column), which is 2,273,641. The total number of properties affected by unplanned interruptions of greater than 24 hours was 262 (146 properties in 2020/21). The total number of properties affected by unplanned interruptions of greater than 12 hours was 2,420 (1,242 properties in 2020/21).

**8** Across the last year years, the average number of properties impacted by unplanned interruptions is 1,860. In 2021/22 this figure has increased significantly to 2,420 when compared to 2020/21, which was one of our best performances on interruptions to supplies. Although this year is higher than average, the figure is more in keeping with previous years (AMP6 year 4 and year 2 which were 2,264 and 2,459 respectively).

### **Unplanned outage (3F.8)**

**9** The 2021/22 unplanned outage figure of 1.721 per cent is an increase on the 2020/21 figure.

**10** Overall company peak week production capacity (PWPC) saw a 30MI/d increase from 2020/21 to 2021/22. Of our 144 sites, 20 increased, 109 remained the same and 15 sites decreased. The most notable increase was at Wing WTW.

### **Priority services for customers in vulnerable circumstances (3F.9)**

**11** For details please see commentary for 3E.2 - 3E.4.

**Table 3G - Underlying calculations for common performance commitments - wastewater**

	Line description	Unique reference	Unit	Standardising data indicator	Standardising data numerical value	Performance level - actual current reporting year	Calculated performance level
<b>Performance commitments set in standardised units</b>							
1	Internal sewer flooding - customer proactively reported	PR19ANH_7	Number of internal sewer flooding incidents per 10,000 sewer connection	Number of sewer connections	2,872.65	462	1.61
2	Internal sewer flooding - company reactively identified (ie neighbouring properties)	PR19ANH_7	Number of internal sewer flooding incidents per 10,000 sewer connection	Number of sewer connections	2,872.65	35	0.12
3	Internal sewer flooding	PR19ANH_7	Number of internal sewer flooding incidents per 10,000 sewer connection	Number of sewer connections	2,872.65	497	1.73
4	Pollution incidents	PR19ANH_8	Pollution incidents per 10,000 km of sewer length	Sewer length in km	76,437.00	258	33.75
5	Sewer collapses	PR19ANH_13	Number of sewer collapses per 1,000 km of all sewers	Sewer length in km	77,037.00	429	5.57

### **Internal sewer flooding - customer proactively reported (3G.1)**

**1** There were 462 internal incidents which customers proactively reported to the business in 2021/22. These include customers proactively informing us when an incident has occurred either by contacting us directly or informing us if a neighbour has been affected. This is an increase from 2020/21 when we reported 355 internal incidents proactively reported to the business.

### **Internal sewer flooding - company reactively identified (i.e. neighbouring properties) (3G.2)**

**2** There were 35 internal incidents which have been reactively identified by the business in 2021/22. These include reactively adding additional properties to an incident once we have confirmed from proactively visiting neighbouring properties. This is a slight increase from 2020/2021 when we reported 25 internal incidents reactively identified by the business. As part of their training, our network technicians are instructed to check two properties to each side of any property reporting flooding, to ensure that no additional flooding has occurred at those properties.

**3** Ofwat has requested that, from 2021/22, if a company reports zero or near zero for this line it should explain why this is the case. At 7 per cent of the total internal sewer flooding incidents, the figure reported cannot be considered as near zero.

### **Internal sewer flooding (3G.3)**

**4** There were 497 internal flooding incidents in 2021/22. This includes 70 incidents caused by overloaded sewers and 427 incidents caused by other causes including blockages, collapses, equipment failure, pumping station failure, pumping station due to a third party, collapse due to a third party, blockage due to a third party and equipment failure due to a third party. This total includes severe weather events; we had a total of 26 internal severe weather events for 2021/22.

**5** In 2020/21 we reported 380 internal flooding incidents. In 2021/22 we have seen an increase in our internal flooding numbers, especially flooding caused by other causes. We have also seen an increase in flooding incidents caused by blockages in 2021/22. To address this decline in performance we plan to increase our Planned Preventative Maintenance programme in 2022/23.

**6** We have reported sewer connections in thousands (000s) to align with the reporting requirements for table 4R.16 from which this line should be copied.

#### **Pollution incidents (3G.4)**

**7** The definition of this measure is taken from version nine of the Environmental Performance Assessment (EPA) methodology document: the total number of pollution incidents (categories one to three) from sewerage assets per 10,000km of sewer length for which the company is responsible in a calendar year. The number we have used to normalise the absolute total number of pollution incidents is also taken from this document (76,437km).

**8** The measure includes pollution incidents from a discharge or escape of a contaminant from a company sewerage asset affecting the water environment only (impacts to land and air are excluded). Sewerage assets include:

- Waste water treatment works
- Foul sewers, including private sewers transferred to the water companies in Oct 2011 (used in the EPA from 1 Jan 2016)
- Combined sewer overflows, excluding satisfactory CSOs
- Rising mains, including private rising mains transferred to the water companies in October 2016 (used in the EPA from 1 Jan 2021)
- Pumping stations, including private pumping stations transferred to the water companies in October 2016 (used in the EPA from 1 Jan 2021)
- Storm tanks
- Surface water outfalls
- Other

**9** Pollution incidents emanating from clean water distribution and water treatment works are excluded.

**10** There has been an increase in the number of total pollution incidents categories one to three in 2021 (258) compared to 2020 (210). The commentary associated with 3B line 2 discusses this performance in more detail.

#### **Sewer collapses (3G.5)**

**11** There were 287 reactive sewer collapses and 132 reactive burst rising mains, totalling 419 for 2021/22. This is year two of reporting for AMP7 definitions. We have seen a decrease in 2021/22 compared to the prior year. In part, this could be attributed to a focus of capital investment on repeat burst rising mains. In addition, it has been a drier year, which has put less pressure on our network.

**12** The sewer length quoted in line 5 is our figure for 2021/22, taken from table 7C, whereas the sewer length figure in the previous line is the one for 2012/13, as specified by v9 of the EA's EPA methodology.

**Table 3H - Summary information on outcome delivery incentive payments**

Line description	Initial calculation of performance payments (excluding CMEX and DMEX)
	£m (2017-18 prices)

Initial calculation of in period revenue adjustment by price control	
Water resources	0.18
Water network plus	-5.48
Wastewater network plus	-5.45
Bioresources (sludge)	0.00
Residential retail	1.32
Business retail	0.00
Dummy control	0.00

Initial calculation of end of period revenue adjustment by price control	
Water resources	0.00
Water network plus	0.00
Wastewater network plus	0.00
Bioresources (sludge)	0.00
Residential retail	0.00
Business retail	0.00
Dummy control	0.00

Initial calculation of end of period RCV adjustment by price control	
Water resources	0.00
Water network plus	0.00
Wastewater network plus	0.00
Bioresources (sludge)	0.00
Residential retail	0.00
Business retail	0.00
Dummy control	0.00

**1** The table below summarises our performance against the performance commitments for 2021/22 (excluding C-Mex and D-Mex). It shows that we met 63 per cent of the performance commitments for which we had performance commitment levels during the year.



	PCL met	PCL not met	No PCL or PC not assessed	Total
Water financial (3A)	6	6	4	16
Wastewater financial (3B)	2	5	2	9
Non-financial (3E)	16	3	0	19
<b>Total</b>	<b>24</b>	<b>14</b>	<b>6</b>	<b>44</b>

**2** Adding in our estimates of the rewards from C-Mex and D-Mex, we have earned total net penalty of £8.3m (2017/18 prices) for our performance under the performance framework in 2021/22. The table below shows where rewards and penalties were achieved and also shows the figures in 2021/22 prices.

	Rewards/penalties from 2021/22 performance (£m)	
	2017/18 Prices	2021/22 prices
<b>Water</b>	-	
Water supply interruptions	-4.2	-4.7
Leakage	0.2	0.2
Compliance Risk Index	-1.6	-1.8
Properties at risk of persistent low pressure	0.6	0.7
Managing void properties	1.3	1.5
Water quality contacts	-0.1	-0.1
<b>Wastewater</b>		
Internal sewer flooding	-1.1	-1.2
Pollution incidents	-4.5	-5.0
Treatment Works Compliance	-1.1	-1.2
External sewer flooding	-0.2	-0.2
WINEP	1.1	1.2
<b>Retail</b>		
C-Mex	0.0	0.0
D-Mex	1.2	1.3
<b>Total</b>	<b>-8.3</b>	<b>-9.4</b>

**3** These payments will be applied to bills from charging year 2023/24.

**4** The per capita consumption performance commitment has been converted to an end-of-period PC, meaning that any payments related to it will be deferred to the next regulatory period (i.e. 2025-30).

**Table 3I - Supplementary outcomes information**

Line description	Current company level peak week production capacity (PWPC) MI/d	Reduction in company level PWPC MI/d	Outage proportion of PWPC %
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<b>Unplanned or planned outage</b>			
1	Planned outage	1,777.83	28.96
			1.63%

Line description	Deployable output	Outage allowance	Dry year demand	Target headroom	Total population supplied	Customers at risk
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<b>Risk of severe restrictions in drought</b>						
2	Risk of severe restrictions in drought	1,533.42	39.27	1,157.72	56.92	4,821.90
						1,364.25

Line description	Total pe served	Total pe in excluded catchments	Percentage of total pe in excluded catchments	Total pe Option 1a	Percentage of total pe Option 1a	Total pe Option 1b	Percentage of total pe Option 1b	Vulnerability risk grade		
								Low	Medium	High
								Percentage of total population served		

<b>Risk of sewer flooding in a storm</b>										
3	Risk of sewer flooding in a storm	6,440,916	0.00	0.00%	0.00	0.00%	6,440,916	100%	99.25%	0.00%
									0.75%	

Line description	Number of patch repairs or relining undertaken on sewer and not included in reported sewer collapses.
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<b>Sewer collapses</b>	
4	Sewer collapses
	801

**Planned outage (3I.1)**

**1** The planned outages number for 2021/22 is 1.629 per cent which equates to 28.961MI/d. Planned outages are captured on our Planned and Unplanned Outage event log.

**Risk of severe restrictions in drought (3I.2)**

**2** Please refer to the commentary for table 3E, line 1.

**Risk of sewer flooding in a storm (3I.3)**

**3** Please refer to the commentary for table 3E, line 5.

**Sewer collapses (3I.4)**

**4** There were 771 work orders which have been confirmed as spot repairs or relining and 29 potential sewer collapses which have been closed as relining. This totals 800 spot repairs and relining which have excluded from our reported sewer collapses. This is year two reporting on the AMP 7 definition.

**Table 4A - Water bulk supply information for the 12 months ended 31 March 2022**

Line description	Volume	Operating costs	Revenue
Units	MI	£m	£m
DPs	3	3	3

<b>Bulk supply exports</b>				
1	Bulk supply 1	-	-	-
2	Bulk supply 2	-	-	-
3	Bulk supply 3	-	-	-
4	Bulk supply 4	-	-	-
5	Bulk supply 5	-	-	-
6	Bulk supply 6	-	-	-
7	Bulk supply 7	-	-	-
8	Bulk supply 8	-	-	-
9	Bulk supply 9	-	-	-
10	Bulk supply 10	-	-	-
11	Bulk supply 11	-	-	-
12	Bulk supply 12	-	-	-
13	Bulk supply 13	-	-	-
14	Bulk supply 14	-	-	-
15	Bulk supply 15	-	-	-
16	Bulk supply 16	-	-	-
17	Bulk supply 17	-	-	-
18	Bulk supply 18	-	-	-
19	Bulk supply 19	-	-	-
20	Bulk supply 20	-	-	-
21	Bulk supply 21	-	-	-
22	Bulk supply 22	-	-	-
23	Bulk supply 23	-	-	-
24	Bulk supply 24	-	-	-
25	Bulk supply 25	-	-	-
26	Total bulk supply exports	-	-	-

Line description	Volume	Operating costs	Revenue
Units	MI	£m	£m
DPs	3	3	3

Bulk supply imports			
27	Bulk supply 1	-	-
28	Bulk supply 2	-	-
29	Bulk supply 3	-	-
30	Bulk supply 4	-	-
31	Bulk supply 5	-	-
32	Bulk supply 6	-	-
33	Bulk supply 7	-	-
34	Bulk supply 8	-	-
35	Bulk supply 9	-	-
36	Bulk supply 10	-	-
37	Bulk supply 11	-	-
38	Bulk supply 12	-	-
39	Bulk supply 13	-	-
40	Bulk supply 14	-	-
41	Bulk supply 15	-	-
42	Bulk supply 16	-	-
43	Bulk supply 17	-	-
44	Bulk supply 18	-	-
45	Bulk supply 19	-	-
46	Bulk supply 20	-	-
47	Bulk supply 21	-	-
48	Bulk supply 22	-	-
49	Bulk supply 23	-	-
50	Bulk supply 24	-	-
51	Bulk supply 25	-	-
52	Total bulk supply imports	-	-

#### Bulk supply exports and imports (4A.1 - 4A.11)

**1** Nil return, we do not have any supplies that qualify under the water trading incentive framework.

## Table 4B - Analysis of debt

- 1** Table 4B has not been published in this document. The published version of the Ofwat tables can be viewed through the [Our reports](#) section on our website.
- 2** Table 4B is the granular data summarised in Table 1E. Relevant commentary has been added in Table 1E and is not duplicated here.

Table 4C - Impact of price control performance to date on RCV

Line description	Units	12 months ended 31 March 2022					Price control period to date					
		Water resources	Water network plus	Wastewater network plus	Bioresources	Additional control	Water resources	Water network plus	Wastewater network plus	Bioresources	Additional control	
<b>Totex (net of business rates, abstraction licence fees and grants and contributions)</b>												
1	Final determination allowed totex (net of business rates, abstraction licence fees and grants and contributions)	£m	37.539	403.987	540.201	89.657	-	71.542	717.057	904.383	171.058	-
2	Actual totex (net of business rates, abstraction licence fees and grants and contributions)	£m	36.609	399.650	442.489	85.054	-	67.298	752.162	797.730	154.499	-
3	Transition expenditure	£m	-	-	-	-	-	5.278	10.137	3.297	-	-
4	Disallowable costs	£m	-	0.973	0.312	-	-	-	0.973	0.435	-	-
5	Total actual totex (net of business rates, abstraction licence fees and grants and contributions)	£m	36.609	398.677	442.177	85.054	-	72.576	761.325	800.592	154.499	-
6	Variance	£m	(0.930)	(5.310)	(98.023)	(4.604)	-	1.033	44.269	(103.790)	(16.559)	-
7	Variance due to timing of expenditure	£m	(7.000)	(8.000)	(85.000)	(3.000)	-	-	45.000	(100.000)	(2.000)	-
8	Variance due to efficiency	£m	6.070	2.690	(13.023)	(1.604)	-	1.033	(0.731)	(3.790)	(14.559)	-
9	Customer cost sharing rate - overperformance	£m	0.550	0.550	0.550	-	-	0.550	0.550	0.550	-	-
10	Customer cost sharing rate - underperformance	£m	0.450	0.450	0.450	-	-	0.450	0.450	0.450	-	-
11	Customer share of totex overspend	£m	2.732	1.211	-	-	-	0.465	-	-	-	-
12	Company share of totex underspend	£m	-	-	(7.163)	-	-	-	(0.402)	(2.085)	-	-
13	Customer share of totex overspend	£m	3.339	1.480	-	-	-	0.568	-	-	-	-
14	Company share of totex underspend	£m	-	-	(5.860)	(1.604)	-	-	(0.329)	(1.706)	(14.559)	-

Line description		Units	12 months ended 31 March 2022					Price control period to date				
			Water resources	Water network plus	Wastewater network plus	Bioresources	Additional control	Water resources	Water network plus	Wastewater network plus	Bioresources	Additional control
Totex - business rates and abstraction licence fees												
15	Final determination allowed totex - business rates and abstraction licence fees	£m	13.629	39.243	22.366	3.134	-	26.775	77.096	43.940	6.157	-
16	Actual totex - business rates and abstraction licence fees	£m	12.996	38.341	19.967	3.123	-	25.410	76.433	41.329	6.410	-
17	Variance - business rates and abstraction licence fees	£m	(0.634)	(0.902)	(2.400)	(0.011)	-	(1.366)	(0.663)	(2.612)	0.253	-
18	Customer cost sharing rate - business rates	£m	0.859	0.897	0.900	0.900	0.900	0.876	0.900	0.900	0.900	0.900
19	Customer cost sharing rate - abstraction licence fees	£m	0.750	0.750	-	-	-	0.750	0.750	-	-	-
20	Customer share of totex over/underspend - business rates and abstraction licence fees	£m	(0.544)	(0.809)	(2.160)	(0.010)	-	(1.196)	(0.597)	(2.350)	0.228	-
21	Company share of totex over/underspend - business rates and abstraction licence fees	£m	(0.089)	(0.093)	(0.240)	(0.001)	-	(0.169)	(0.066)	(0.261)	0.025	-



Line description		Units	12 months ended 31 March 2022					Price control period to date				
			Water resources	Water network plus	Wastewater network plus	Bioresources	Additional control	Water resources	Water network plus	Wastewater network plus	Bioresources	Additional control
Totex not subject to cost sharing												
22	Final determination allowed totex - not subject to cost sharing	£m	3.429	33.569	11.297	0.518	-	6.155	64.058	14.902	1.355	-
23	Actual totex - not subject to cost sharing	£m	4.908	13.134	6.091	2.525	-	10.625	32.933	20.027	8.555	-
24	Variance - 100% company allocation	£m	1.479	(20.435)	(5.206)	2.007	-	4.470	(31.125)	5.125	7.200	-
25	Total company share of totex over/under spend	£m	2.187	0.401	(9.322)	(0.010)	-	(0.731)	(0.999)	(4.435)	0.228	-
RCV												
26	Total company share of totex over/under spend	£m	2.187	0.401	(9.322)	(0.010)	-	(0.731)	(0.999)	(4.435)	0.228	-
27	PAYG rate	£m	0.768	0.495	0.377	0.773	-	0.798	0.544	0.441	0.803	-
28	RCV element of totex over/underspend	£m	0.507	0.202	(5.803)	(0.002)	-	(0.148)	(0.456)	(2.479)	0.045	-
29	Adjustment for ODI outperformance payment or underperformance payment	£m	-	-	-	-	-	-	-	-	-	-
30	Green recovery	£m	-	-	-	-	-	-	-	-	-	-
31	RCV determined at FD at 31 March	£m	-	-	-	-	-	217.359	3,225.255	4,958.069	353.778	-
32	Projected 'shadow' RCV	£m	-	-	-	-	-	217.211	3,224.799	4,955.590	353.823	-

**Final determination allowed totex (net of business rates, abstraction licence fees and grants and contributions and other items not subject to cost sharing) (4C.1)**

**1** This has been taken from Ofwat's published inputs for table 4C, inflated by CPIH to 2021/22 year average prices.

**Actual totex (net of business rates, abstraction licence fees and grants and contributions) (4C.2)**

**2** This has been calculated from the APR tables according to the requirements of RAG 4.10.

**Disallowable costs (4C.4)**

**3** Disallowable costs relate to fines, penalties and guaranteed service scheme payments incurred in the year, including court costs associates with fines and penalties.

**4** As part of the IDOK settlement we agreed to invest £1.4 million in lead replacement funded by shareholders. In 2021/22 we had not spent any of this, but in future years, spend in this area will be included in disallowable costs.

**Variance due to timing of expenditure (4C.7)**

**5** We note that assessing these timing impacts requires a degree of judgement to be exercised which we have undertaken to the best of our abilities, any inaccuracies in this judgement will unwind by the end of the AMP. Given the nature of assessing this, we have rounded each to the nearest £million. For Water Resources we have reversed the timing differences reported last year, along with the impact of restating last year's totex tables (see comment below) to reflect an AMP to date position in line with the FD allowance. For Water Network+ after adjusting for the impact of restating last year's totex tables, our AMP to date timing differences continue to reflect an advancement of spend, primarily in supporting growth in our region. For Wastewater Network+ after adjusting for the impacts of restating last year's totex, our AMP to date position is estimated to be £100 million behind the FD allowance. This is primarily due to deferment within the AMP of growth expenditure at water recycling treatment plants, as we expect this to be recovered during the rest of the AMP, it has been included as timing differences. For Bioresources, the timing difference is the estimated impact of storing sludge cake as a result of farming rules for water.

**Variance due to efficiency (4C.8)**

**6** These are calculated cells.

**Customer cost sharing rate (4C.9 and 4C.10)**

**7** These have been taken from the CMA Redetermination. The customer sharing rate is 45 per cent for an overspend (and 55 per cent for an underspend) in the combined Water Resources and Water Network+ prices control. The customer sharing rate for Wastewater Network+ is 45 per cent for an overspend (and 55 per cent for an underspend). There is no sharing of out or underperformance for Bioresources.

**Customer share of totex overspend (4C.11) and customer share of totex underspend (4C.12)**

**8** These are calculated cells.

**Company share of totex overspend (4C.13) and company share of totex underspend (4C.14)**

**9** These are calculated cells.

### **Final determination allowed totex - business rates and abstraction licence fees (4C.15)**

**10** This has been taken from Ofwat's published inputs for table 4C, inflated by CPIH to 2021/22 year average prices.

### **Actual totex - business rates and abstraction licence fees (4C.16)**

**11** This has been calculated from the APR tables according to the requirements of RAG 4.10.

### **Variance - business rates and abstraction licence fees (4C.17)**

**12** These are calculated cells.

### **Customer cost sharing rate - business rates and abstraction licence fees (4C.18 and 4C.19)**

**13** The CMA Redetermination set the customer sharing rate at 90 per cent for business rates and 75 per cent for abstraction licences. Given the different sharing rates we have calculated a hybrid sharing rate taking into account the individual out / under performance for business rates and abstraction licences and input this in 4C.18. It is 4C.18 which is used in the calculation of customer and company share. For 4C.19 (Customer cost sharing rate abstraction licences) we have populated this with 75 per cent although this row is not used in any of the table calculations.

### **Customer share of totex over/underspend - business rates and abstraction licence fees (4C.20) and Company share of totex over/underspend - business rates and abstraction licence fees (4C.21)**

**14** These are calculated cells.

### **Final determination allowed totex - not subject to cost sharing (4C.22)**

**15** This has been taken from Ofwat's published inputs for table 4C, inflated by CPIH to 2021/22 year average prices. We have adjusted the allowed totex to include the "efficiency challenge" applied to the FD income offset (the Ofwat published inputs used the income offset without the efficiency challenge).

### **Actual totex - not subject to cost sharing (4C.23)**

**16** This has been calculated from the APR tables according to the requirements of RAG 4.10.

### **Variance - 100% company allocation (4C.24)**

**17** These are calculated cells.

### **Total customer share of totex over/under spend (4C.25)**

**18** These are calculated cells.

### **Total customer share of totex over/under spend (4C.26)**

**19** These are calculated cells.

### **PAYG rate (4C.27)**

**20** For the PAYG rates in the current year we have used the CMA redetermination PAYG model, updated for the IDOK. The Ofwat published inputs for table 4C did not include the IDOK impacts. For the AMP to date PAYG rates we have used a weighted average PAYG rate (for the first two years of the AMP) from the CMA redetermination PAYG model, updated for the IDOK.

### **RCV element of totex over/underspend (4C.28)**

**21** These are calculated cells.

### **Adjustment for ODI outperformance payment or underperformance payment (4C.29)**

**22** These are zero as we have no ODIs linked to RCV reward or penalty.

### **RCV determined at FD at 31 March (4C.30)**

**23** This has been taken from Ofwat's published RCVs. We have not been able to fully reconcile the year-end RCV that was published by Ofwat. Whilst we have reported based on the Ofwat published RCV, we continue to believe that the RPI proportion of the RCV should be inflated by RPI only for it to be consistent with the publication of RCV in the previous years. Our calculation of the Year-end RCV on this consistent basis is around £37m higher than the Ofwat published RCV.

### **Projected 'shadow' RCV (4C.32)**

**24** These are calculated cells. We note however the shortcomings of this "shadow" RCV reported number. The calculations performed in this table do not replicate the detailed PR19 cost reconciliations model, which calculates RCV adjustments as a result of totex out / under performance. In addition this "shadow" RCV takes no account of RCV adjustments published in Ofwat's "Blind Year" adjustments document, which will apply at the end of AMP7.

### **Totex Out / Under Performance AMP7 to Date**

**25** We have restated our 2020/21 totex tables (4J, 4K, 4D, 4E and 2B) to reflect the inclusion of principal use asset charges and also to reflect the change in accounting treatment for "Software as a Service". These restated tables have been used in producing the "Price control period to date" columns actual totex.

**26** Our 2020/21 totex tables did not include the impact of principal use asset charges. Following clarification from Ofwat that the opex in these tables should be stated net of principal use charges, we have reflected this revision in the brought forward totex in the AMP to date columns. This has resulted in an increase in opex of £2.0 million in Water Resources, £14 million in Water Network+, £3.8 million in Bioresources and a £25 million decrease in opex in Wastewater Network+ (effectively the "income" received from the other price controls, including Retail, for the use of the shared assets).

**27** Following the clarification by the International Financial Reporting Interpretations Committee (IFRIC) on the treatment of Software as a Service costs, certain costs that were previously capitalised have now been expensed. This has resulted in a prior year increase to opex of £15.6 million, of which £13.3 million relates to wholesale opex, and a decrease in capex of £26.5 million of which £26.0 m relates to wholesale.

**28** Whilst it is still early in the AMP to draw conclusions on efficiency, despite the challenges of the tough CMA totex allowances, for the AMP as a whole we are on track with our plan to spend in line with the FD allowance.

**29** Challenges to date have resulted in slippage of some areas of our capital investment programme. These challenges have included:

- Brexit – primarily affecting the labour market and availability of key resources such as HGV drivers
- Economic recovery post pandemic – primarily affecting availability of key components such as semi-conductors
- Conflict in Ukraine – primarily affecting the investment programme because of lack of availability of raw materials such as steel

**30** The overall timing differences (which will reverse over the remaining years of the AMP) total c.£57 million, which represents around 2 per cent of allowed totex in the AMP to date.

**Table 4D - Wholesale Totex Analysis - Water**

Line description	Units	Water resources	Network+				Total
			Raw water transport	Raw water storage	Water treatment	Treated water distribution	

**Operating expenditure**

1	Base operating expenditure	£m	37.551	6.709	0.366	52.587	142.916	240.130
2	Enhancement operating expenditure	£m	2.063	-	-	0.173	7.706	9.942
3	Developer services operating expenditure	£m	-	-	-	-	2.729	2.729
4	Total operating expenditure excluding third party services	£m	39.614	6.709	0.366	52.760	153.351	252.801
5	Third party services	£m	2.355	1.910	0.002	2.794	3.676	10.737
6	Total operating expenditure	£m	41.969	8.619	0.369	55.554	157.027	263.537

**Grants and contributions**

7	Grants and contributions - operating expenditure	£m	-	-	-	-	-	-
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**Capital expenditure**

8	Base capital expenditure	£m	3.939	0.930	0.069	19.952	64.407	89.297
9	Enhancement capital expenditure	£m	5.986	(0.021)	-	10.219	111.992	128.176
10	Developer services capital expenditure	£m	-	-	-	-	54.438	54.438
11	Total gross capital expenditure (excluding third party)	£m	9.925	0.909	0.069	30.171	230.837	271.911
12	Third party services	£m	0.326	0.027	0.013	0.218	0.391	0.975
13	Total gross capital expenditure	£m	10.251	0.936	0.082	30.389	231.228	272.886

**Grants and contributions**

14	Grants and contributions - capital expenditure	£m	-	0.123	0.009	3.879	31.004	35.015
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15	Net totex	£m	52.220	9.432	0.442	82.064	357.251	501.408
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**Cash expenditure**

16	Pension deficit recovery payments	£m	0.596	0.006	0.087	1.630	3.274	5.593
17	Other cash items	£m	-	-	-	-	-	-
18	Totex including cash items	£m	52.816	9.438	0.529	83.694	360.525	507.001

Line description	Units	Water resources	Network+				Total
			Raw water transport	Raw water storage	Water treatment	Treated water distribution	

Atypical expenditure							
19	Item 1	£m	-	-	-	-	-
20	Item 2	£m	-	-	-	-	-
21	Item 3	£m	-	-	-	-	-
22	Item 4	£m	-	-	-	-	-
23	Item 5	£m	-	-	-	-	-
24	Total atypical expenditure	£m	-	-	-	-	-

1 Line numbers shown within the table are as per the Ofwat APR spreadsheet.

### Change in operating expenditure compared to 2020/21 - Regulatory Accounts

2 Underlying water services operating expenditure increased by £8.8 million (3.5 per cent) in real terms.

### Movement in costs 2020/21 to 2021/22

£m	Water Resources	Raw Water Transport & Storage	Water Treatment	Treated Water Distribution	Water Total
2021/21 reporting operating costs	36	9.8	46.1	153.8	245.6
<b>Atypical costs</b>					
2020/21 costs restated to underlying position	36	9.8	46.1	153.8	245.6
Inflation @ 3.674%	1.3	0.3	1.7	5.7	9
2020/21 costs indexed to 2021/22 prices	37.3	10.1	47.8	159.5	254.7
2021/22 reported operating costs	42	8.9	55.6	157	263.5
<b>(Increase)/decrease in underlying costs from 2020/21</b>	<b>-4.7</b>	<b>1.2</b>	<b>-7.8</b>	<b>2.5</b>	<b>-8.8</b>

### 3 Water resources

4 Operating expenditure was £4.7m million higher vs 2020/21 levels following accounting policy changes that to recognise the cost of Software as a Service in operating expenditure and recharges for principal use assets from which Water Resources receives benefit.

### Raw Water transport and storage

5 Operating expenditure was £1.2 million lower than last year due to a reduction in power costs as DI returned to pre-pandemic levels.

### Water treatment

6 Operating expenditure increased by £7.8 million as capital costs associated with the design of a new water treatment works at Elsham were recognised in operating expenditure following the adoption of an alternative capital solution as detailed in table 6F. These costs offset an underlying decrease in operational expenditure, notably in power costs, due to lower volumes of water being treated as demand returned to pre-pandemic levels.

## **Treated water distribution**

**7** Operating expenditure reduced by £2.5 million in real terms compared to the prior year. In contrast to 2020/21, expenditure to replace stop taps was recognised in capital rather than operating expenditure to reflect the long life of these assets. The resultant saving in operating expenditure is partially offset by increased spend on initiatives to reduce leakage levels, new costs to recognise the cost of Software as a Service and recharges for principal use assets from which Treated Water Distribution receives benefit.

### **Capital Expenditure (4D.8-4D.13)**

**8** All of our capital expenditure is delivered through projects where master data is used to identify whether the expenditure is for maintaining the long term capability of assets or other capital assets for both infrastructure and non infrastructure.

**9** It is expected that capital expenditure profiles vary year on year significantly due to the strategic prioritisation of the investment programme. Large projects and stakeholder required investments can lead to variances in year on year comparisons of the same data point.

**10** This master data is also used for the classifying expenditure within the relevant price control. The majority of capital expenditure is directly attributable to the price control. Where this is not possible, capital expenditure is assigned to the business unit of principal use with an appropriate recharge of depreciation charges for these shared assets made between price control segments in table 2A.

**11** Total water capital expenditure includes £1.0 million of spend on assets used to fulfil third-party agreements.



**Table 4E - Wholesale Totex Analysis - Wastewater**

Line description	Units	Network+ Sewage collection			Network+ Sewage treatment		Bioresources			Total
		Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Imported sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal	

**Operating  
expenditure**

1	Base operating expenditure	£m	53.141	20.579	6.873	116.665	6.675	24.628	33.407	11.836	273.802
2	Enhancement operating expenditure	£m	0.845	0.107	0.317	3.529	0.001	-	-	-	4.799
3	Developer services operating expenditure	£m	2.718	1.023	0.341	-	-	-	-	-	4.082
4	Total operating expenditure excluding third party services	£m	56.704	21.709	7.531	120.194	6.676	24.628	33.407	11.836	282.683
5	Third party services	£m	-	-	-	0.821	-	0.015	0.298	0.024	1.157
6	Total operating expenditure	£m	56.704	21.709	7.531	121.015	6.676	24.643	33.704	11.860	283.840

**Grants and  
contributions**

7	Grants and contributions - operating expenditure	£m	-	-	-	-	-	-	-	-	-
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**Capital expenditure**

8	Base capital expenditure	£m	29.913	11.329	3.753	98.333	-	0.049	16.526	1.665	161.568
9	Enhancement capital expenditure	£m	9.892	3.722	1.241	104.243	-	-	0.067	-	119.165
10	Developer services capital expenditure	£m	7.850	2.953	0.986	-	-	-	-	-	11.789
11	Total gross capital expenditure (excluding third party)	£m	47.655	18.004	5.980	202.576	-	0.049	16.593	1.665	292.522
12	Third party services	£m	(0.001)	-	-	0.179	-	-	0.017	-	0.195
13	Total gross capital expenditure	£m	47.654	18.004	5.980	202.755	-	0.049	16.610	1.665	292.717

**Grants and  
contributions**

14	Grants and contributions - capital expenditure	£m	3.119	1.181	0.391	21.260	-	-	-	-	25.951
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15	Net totex	£m	101.239	38.532	13.120	302.510	6.676	24.692	50.314	13.525	550.606
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Line description	Units	Network+ Sewage collection			Network+ Sewage treatment		Bioresources			Total
		Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Imported sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal	

Cash expenditure											
16	Pension deficit recovery payments	£m	1.318	0.202	0.475	2.945	0.167	0.901	0.825	0.445	7.278
17	Other cash items	£m	-	-	-	-	-	-	-	-	-
18	Totex including cash items	£m	102.557	38.734	13.595	305.455	6.843	25.593	51.139	13.970	557.884

1 Line numbers shown within the table are as per the Ofwat APR spreadsheet.

### Change in operating expenditure compared to 2020/21 - regulatory accounts

2 Underlying wastewater operating expenditure increased by £14.6 million (5.1 per cent) in real terms (pre PUAC). After adjusting for PUAC wastewater operations showed a reduction of £2.8m in real terms.

### Movement in costs 2020/21 to 2021/22

	Sewerage Collection	Sewerage Treatment	Bioresources	Sewerage Total
Units	£m	£m	£m	£m
2020/21 reported operating costs	95.6	131.4	49.5	276.5
<b>Atypical costs</b>				
2020/21 costs restated to underlying position	95.6	131.4	49.5	276.5
Inflation @ 3.674%	3.5	4.8	1.8	10.2
2020/21 underlying costs indexed to 2021/22 prices	99.1	136.2	51.4	286.6
2021/22 operating costs pre principle use asset charge (PUAC)	95.1	141.9	64.2	301.2
(Increase)/decrease in underlying costs from 2020/21 (pre PUAC)	4	-5.7	-12.8	-14.6
Principle Use Asset Charge 21/22 (Increase)/decrease	9.2	14.2	-6	17.4
21/22 reported operating costs post principle use asset charge (PUAC)	85.9	127.7	70.2	283.8
(Increase)/decrease in underlying costs from 2020/21 post PUAC	13.2	8.5	-18.8	2.8

3 Operating expenditure key changes (4E.1-4E.11)

### Sewage Collection

4 Total Collection costs decreased by £4.0 million in real terms (pre PUAC), due to the reduction in weather related cost associated with the prolonged heavy rainfall from late December through to February in the previous year as well as ongoing efficiency challenges. Sewage collection also received a benefit due to our resources concentrating on challenges in Sewage Treatment and Bioresources price control areas throughout the year. After adjusting for PUAC Collection was £13.2m lower than last year in real terms.

## Sewage treatment

**5** Total Treatment costs increased by £5.7 million in real terms (pre PUAC), mainly due to challenges around maintaining treatment work compliance throughout the year which resulted in more resources being directed to this price control. After adjusting for PUAC Treatment was £8.5m lower in real terms than last year.

## Bioresources

**6** Bioresources costs increased significantly by £12.9 million in real terms (pre PUAC). This was in part due to the return to a normal year after the one off benefit delivered in 2020/21. The rest of the increase in Bioresources was due to a temporary closure for refurbishment and cleaning of Gt Billing (our biggest STC) and subsequent cost impacts including additional Tankering, loss of generation income (ROCS) and the increased requirement to purchase power from the grid previously generated locally. This is a one off for this year. We also continued to require expensive lime treatment as a result. Farming Rules for Water challenges resulted in increased costs associated with the haulage and storage of biosolids, with significant additional biosolids stocks held at the end of the year. We also had an increase in relation to LGV drivers employee costs, due to the nationwide impact of a shortage of skills in this area. The nature of the challenges in 2021/22 should result in an improved position in 2022/23. After adjusting for PUAC Bioresources were £18.8m higher in real terms.

## Capital Expenditure (4E.8-4E.13)

**7** All of our capital expenditure is delivered through projects where master data is used to identify whether the expenditure is for maintaining the long term capability of assets or other capital assets for both infrastructure and non infrastructure.

**8** This master data is also used for the classifying expenditure within the relevant price control. The majority of capital expenditure is directly attributable to price control. Where this is not possible, capital expenditure is assigned to the business unit of principal use with an appropriate recharge of depreciation charges for these shared assets made between price control segments in table 2A.

**9** It is expected that capital expenditure profiles vary year on year significantly due to the strategic prioritisation of the investment program particularly with Enhancement capex. Large projects and stakeholder required investments can lead to variances in year on year comparisons of the same data point. This resulted in Enhancement spend increase in line with our plan by £50m in 2021/22, with further increases predicted in 2022/23.

**10** Base Capital Expenditure is 5 per cent higher than previous year in real terms, this is mainly caused by further pro-active base capex investment in Sewage collection in 2021/22.

**11** An allocation was required for the foul, surface water drainage and highway drainage split. The allocation was based on flow estimate models provided by Anglian Water's modelling team.

**12** Total wastewater capital expenditure includes £0.2 million of spend on assets used to fulfil third-party agreements.

**Table 4F - Major project expenditure for wholesale water by purpose**

	Line description	Units	Expenditure in report year £m					Total
			Water resources	Water network+				
				Raw water transport	Raw water storage	Water treatment	Treated water distribution	
	<b>Major project capital expenditure by purpose</b>							
1	WAT-07288 - WRMP DPC - Eisham to Lincoln Transfer	£m	-	-	-	-	(0.684)	(0.684)
2	WAT-07289 - WRMP DPC- Additional Capacity Eisham WTW	£m	-	-	-	(0.001)	-	(0.001)
3	WAT-07462 - WRMP North Lincs Deficit DPC	£m	-	-	-	(1.291)	(1.456)	(2.747)
4	WAT-07397 - WRMP19 Adaptive Planning Pre Planning	£m	0.323	-	-	0.323	-	0.646
5	WAT-07356 - South Lincs Reservoir & Affinity Trf Dev	£m	1.192	-	-	1.192	-	2.384
6	WAT-07634 - Fens Reservoir RAPID 2021-22	£m	0.791	-	-	0.264	0.703	1.758
7	Capital expenditure purpose - line 7	£m	-	-	-	-	-	-
8	Capital expenditure purpose - line 8	£m	-	-	-	-	-	-
9	Capital expenditure purpose - line 9	£m	-	-	-	-	-	-
10	Capital expenditure purpose - line 10	£m	-	-	-	-	-	-
11	Total major project capital expenditure	£m	2.306	-	-	0.487	(1.437)	1.356

Line description	Units	Cumulative expenditure on schemes completed in the report year £m					Total
		Water resources	Water network+				
			Raw water transport	Raw water storage	Water treatment	Treated water distribution	
Major project capital expenditure by purpose							
1WAT-07288 - WRMP DPC - Eisham to Lincoln Transfer	£m	-	-	-	-	-	-
2WAT-07289 - WRMP DPC- Additional Capacity Eisham WTW	£m	-	-	-	-	-	-
3WAT-07462 - WRMP North Lincs Deficit DPC	£m	-	-	-	-	-	-
4WAT-07397 - WRMP19 Adaptive Planning Pre Planning	£m	-	-	-	-	-	-
5WAT-07356 - South Lincs Reservoir & Affinity Trf Dev	£m	-	-	-	-	-	-
6WAT-07634 - Fens Reservoir RAPID 2021-22	£m	-	-	-	-	-	-
7Capital expenditure purpose - line 7	£m	-	-	-	-	-	-
8Capital expenditure purpose - line 8	£m	-	-	-	-	-	-
9Capital expenditure purpose - line 9	£m	-	-	-	-	-	-
10Capital expenditure purpose - line 10	£m	-	-	-	-	-	-
11Total major project capital expenditure	£m	-	-	-	-	-	-

Line description	Units	Expenditure in report year £m					Total
		Water resources	Water network+				
			Raw water transport	Raw water storage	Water treatment	Treated water distribution	
<b>Major project operating expenditure by purpose</b>							
12	Operating expenditure purpose - line 1	£m	-	-	-	-	-
13	Operating expenditure purpose - line 2	£m	-	-	-	-	-
14	Operating expenditure purpose - line 3	£m	-	-	-	-	-
15	Operating expenditure purpose - line 4	£m	-	-	-	-	-
16	Operating expenditure purpose - line 5	£m	-	-	-	-	-
17	Operating expenditure purpose - line 6	£m	-	-	-	-	-
18	Operating expenditure purpose - line 7	£m	-	-	-	-	-
19	Operating expenditure purpose - line 8	£m	-	-	-	-	-
20	Operating expenditure purpose - line 9	£m	-	-	-	-	-
21	Operating expenditure purpose - line 10	£m	-	-	-	-	-
22	Total major project operating expenditure	£m	-	-	-	-	-

Line description	Units	Cumulative expenditure on schemes completed in the report year £m					Total
		Water resources	Water network+				
			Raw water transport	Raw water storage	Water treatment	Treated water distribution	
Major project operating expenditure by purpose							
12 Operating expenditure purpose - line 1	£m	-	-	-	-	-	-
13 Operating expenditure purpose - line 2	£m	-	-	-	-	-	-
14 Operating expenditure purpose - line 3	£m	-	-	-	-	-	-
15 Operating expenditure purpose - line 4	£m	-	-	-	-	-	-
16 Operating expenditure purpose - line 5	£m	-	-	-	-	-	-
17 Operating expenditure purpose - line 6	£m	-	-	-	-	-	-
18 Operating expenditure purpose - line 7	£m	-	-	-	-	-	-
19 Operating expenditure purpose - line 8	£m	-	-	-	-	-	-
20 Operating expenditure purpose - line 9	£m	-	-	-	-	-	-
21 Operating expenditure purpose - line 10	£m	-	-	-	-	-	-
22 Total major project operating expenditure	£m	-	-	-	-	-	-

## **Elsham to Lincoln Transfer**

- 1** Please refer to commentary for table 6F.

## **North Lincs Deficit**

- 2** Please refer to commentary for table 6F.

## **South Lincs and Fens Reservoirs**

- 3** Anglian Water's 2019 WRMP identified a number of strategic solutions that could significantly increase future supply. These solutions include:

- The South Lincolnshire Reservoir (SLR): a proposed new reservoir expected to be located in Lincolnshire.
- The Fens Reservoir (FR): a proposed new reservoir in the Fens either to the east or west of the Ouse Washes.
- The Anglian to Affinity Transfer (A2AT): a proposed new piece of infrastructure that would transfer water from the Anglian Water region to supply Affinity Water customers. The transfer would source water from a new supply to be developed in the Anglian Water region, which could be the South Lincolnshire Reservoir, the Fens Reservoir or a new source from the River Trent.

- 4** The SLR and A2AT are joint projects between Anglian Water and Affinity Water and were funded in PR19 as part of the Strategic Resource Option (SRO) programme. This programme is overseen by RAPID (the Regulators' Alliance for Progressing Infrastructure Development), comprised of representatives from Ofwat, the Environment Agency and the Drinking Water Inspectorate. The RAPID programme has a series of 'gates', which mark the end of successive stages of incremental progress towards planning and delivery; progress through each gate is subject to RAPID scrutiny and stakeholder consultation.

- 5** Gate One reports for the SLR and A2AT were submitted in July 2021. At this point, Anglian Water and Cambridge Water put forward a request for the FR to join the RAPID programme, which was accepted; a Gate One report for FR was also submitted in July 2021. The Gate One reports demonstrated each strategic solution's progress and viability. This involved setting out plans for delivering the proposed solution, including early conceptual outline designs alongside strategies for engaging stakeholders, gaining planning permission and for procuring and operating the new infrastructure. Following publication of Gate One reports, companies received feedback from RAPID and other stakeholders, and published a set of query responses in October 2021. It was confirmed in December 2021 that all three solutions passed Gate One.

- 6** The next milestone in the RAPID gated process is submission of Gate Two reports in November 2022. Before then, Anglian Water and partner companies are developing more detail on each option, which includes confirming the location of each reservoir. The site selection process involves engaging with key regional stakeholders, such as the South Lincolnshire Water Partnership and Fens Water Partnership. These partnerships bring together a wide range of water-management stakeholders who are working to build integrated approaches to water management in the region. In November 2022, WRE will publish the regional water resources management plan, and water companies will publish Water Resources Management Plans; these plans will confirm the need for and sizing of these solutions.



**Table 4G - Major project expenditure for wholesale wastewater by purpose**

Line description	Units	Expenditure in report year £m							Total	
		Wastewater network+				Bioresources				
		Sewage collection			Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment		Sludge disposal
		Foul	Surface water drainage	Highway drainage						

Major project capital expenditure by purpose										
1	Capital expenditure purpose - line 1	£m	-	-	-	-	-	-	-	-
2	Capital expenditure purpose - line 2	£m	-	-	-	-	-	-	-	-
3	Capital expenditure purpose - line 3	£m	-	-	-	-	-	-	-	-
4	Capital expenditure purpose - line 4	£m	-	-	-	-	-	-	-	-
5	Capital expenditure purpose - line 5	£m	-	-	-	-	-	-	-	-
6	Capital expenditure purpose - line 6	£m	-	-	-	-	-	-	-	-
7	Capital expenditure purpose - line 7	£m	-	-	-	-	-	-	-	-
8	Capital expenditure purpose - line 8	£m	-	-	-	-	-	-	-	-
9	Capital expenditure purpose - line 9	£m	-	-	-	-	-	-	-	-
10	Capital expenditure purpose - line 10	£m	-	-	-	-	-	-	-	-
11	Total major project capital expenditure	£m	-	-	-	-	-	-	-	-

	Units	Cumulative expenditure on schemes completed in the report year £m								
		Wastewater network+					Bioresources			Total
		Sewage collection			Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal	
		Foul	Surface water drainage	Highway drainage						

1	Capital expenditure purpose - line 1	£m	-	-	-	-	-	-	-	-
2	Capital expenditure purpose - line 2	£m	-	-	-	-	-	-	-	-
3	Capital expenditure purpose - line 3	£m	-	-	-	-	-	-	-	-
4	Capital expenditure purpose - line 4	£m	-	-	-	-	-	-	-	-
5	Capital expenditure purpose - line 5	£m	-	-	-	-	-	-	-	-
6	Capital expenditure purpose - line 6	£m	-	-	-	-	-	-	-	-
7	Capital expenditure purpose - line 7	£m	-	-	-	-	-	-	-	-
8	Capital expenditure purpose - line 8	£m	-	-	-	-	-	-	-	-
9	Capital expenditure purpose - line 9	£m	-	-	-	-	-	-	-	-
10	Capital expenditure purpose - line 10	£m	-	-	-	-	-	-	-	-
11	Total major project capital expenditure	£m	-	-	-	-	-	-	-	-

Line description	Units	Expenditure in report year £m								
		Wastewater network+					Bioresources			Total
		Sewage collection			Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal	
		Foul	Surface water drainage	Highway drainage						

Major project operating expenditure by purpose										
12	Operating expenditure purpose - line 1	£m	-	-	-	-	-	-	-	-
13	Operating expenditure purpose - line 2	£m	-	-	-	-	-	-	-	-
14	Operating expenditure purpose - line 3	£m	-	-	-	-	-	-	-	-
15	Operating expenditure purpose - line 4	£m	-	-	-	-	-	-	-	-
16	Operating expenditure purpose - line 5	£m	-	-	-	-	-	-	-	-
17	Operating expenditure purpose - line 6	£m	-	-	-	-	-	-	-	-
18	Operating expenditure purpose - line 7	£m	-	-	-	-	-	-	-	-
19	Operating expenditure purpose - line 8	£m	-	-	-	-	-	-	-	-
20	Operating expenditure purpose - line 9	£m	-	-	-	-	-	-	-	-
21	Operating expenditure purpose - line 10	£m	-	-	-	-	-	-	-	-
22	Total major project operating expenditure	£m	-	-	-	-	-	-	-	-

	Units	Expenditure in report year £m								
		Wastewater network+				Bioresources			Total	
		Sewage collection			Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment		Sludge disposal
		Foul	Surface water drainage	Highway drainage						

12	Operating expenditure purpose - line 1	£m	-	-	-	-	-	-	-	-
13	Operating expenditure purpose - line 2	£m	-	-	-	-	-	-	-	-
14	Operating expenditure purpose - line 3	£m	-	-	-	-	-	-	-	-
15	Operating expenditure purpose - line 4	£m	-	-	-	-	-	-	-	-
16	Operating expenditure purpose - line 5	£m	-	-	-	-	-	-	-	-
17	Operating expenditure purpose - line 6	£m	-	-	-	-	-	-	-	-
18	Operating expenditure purpose - line 7	£m	-	-	-	-	-	-	-	-
19	Operating expenditure purpose - line 8	£m	-	-	-	-	-	-	-	-
20	Operating expenditure purpose - line 9	£m	-	-	-	-	-	-	-	-
21	Operating expenditure purpose - line 10	£m	-	-	-	-	-	-	-	-
22	Total major project operating expenditure	£m	-	-	-	-	-	-	-	-

**1** We have no major Wastewater projects

Table 4H - Financial Metrics

	Line description	Units	Current year	AMP to date
<b>Financial indicators</b>				
1	Net debt	£m	5,727.214	-
2	Regulatory equity	£m	3,027.247	-
3	Regulatory gearing	%	65.42%	-
4	Post tax return on regulatory equity	%	-0.33%	-
5	RORE (return on regulatory equity)	%	3.68%	0.037
6	Dividend yield	%	2.74%	-
7	Retail profit margin - Household	%	4.51%	-
8	Retail profit margin - Non household	%	0.00%	-
9	Credit rating - Fitch	Text	A- (Stable)	-
10	Credit rating - Moody's	Text	A3 (Stable)	-
11	Credit rating - Standard and Poor's	Text	A- (Stable)	-
12	Return on RCV	%	5.58%	-
13	Dividend cover	dec	(5.17)	-
14	Funds from operations (FFO)	£m	494.303	-
15	Interest cover (cash)	dec	3.22	-
16	Adjusted interest cover (cash)	dec	1.360	-
17	FFO/Net debt	dec	0.09	-
18	Effective tax rate	%	54.07%	-
19	RCF	£m	411.284	-
20	RCF/Net debt	dec	0.07	-
<b>Borrowings</b>				
21	Proportion of borrowings which are fixed rate	%	26.22%	-
22	Proportion of borrowings which are floating rate	%	5.58%	-
23	Proportion of borrowings which are index linked	%	68.21%	-
24	Proportion of borrowings due within 1 year or less	%	6.02%	-
25	Proportion of borrowings due in more than 1 year but no more than 2 years	%	7.23%	-
26	Proportion of borrowings due in more than 2 years but but no more than 5 years	%	17.51%	-
27	Proportion of borrowings due in more than 5 years but no more than 20 years	%	49.96%	-
28	Proportion of borrowings due in more than 20 years	%	19.28%	-

**As noted in the commentary to table 1A, our intangible asset accounting policy has been amended to reflect the clarification by the International Financial Reporting Interpretations Committee on the treatment of Software as a Service costs (SaaS), meaning certain costs that were previously capitalised have been expensed. The prior year comparatives have been updated to reflect this change.**

#### **Net debt (4H.1)**

**1** Net debt is significantly reduced this year following an equity injection into Anglian Water by its shareholder. The equity injection was completed in July 2021, with a principal aim to protect the credit ratings of Anglian Water at A3, A-, A- and to lower leverage; £1,165 million was injected as equity into Anglian Water. Gearing is significantly reduced from last year and was 64.8 per cent at the year end.

**2** There are a number of differences between statutory and regulatory net debt. These are principally that regulatory net debt excludes: swap accretion; accrued interest; accounting fair value adjustments; and debt issue costs. A full reconciliation between statutory and regulatory net debt can be found in the commentary to Table 1E.

#### **Regulated equity (4H.2)**

**3** Compared with prior year regulated equity has increased by £1,650.3 million to £3,027.2 million. This principally reflects the increase in RCV over the year and the reduction in net debt discussed above.

#### **Regulated gearing (4H.3)**

**4** Regulated gearing represents net debt per table 1E divided by year-end RCV.

#### **Post tax return on regulated equity (4H.4)**

**5** In the previous year the return was -0.33 per cent. A break down of the calculation for both years is shown below for information.

Line description	2020/21 (restated)	2021/22
Profit/(loss) before tax and fair value movements (2021 restated for SaaS)	£132.993m	£(26.957)m
UK corporation tax	£5.935m	£19.676m
Profit/(loss) after current tax (excluding fair value movements)	£138.928m	£(7.281)m
Regulated equity (average for year)	£1,385.035m	£2,202.080m
Post tax return on regulated equity %	10.03%	(0.33)%

#### **RORE (4H.5)**

**6** RORE is calculated in table 1F, please refer to the table and associated commentary for more detail. The Ofwat submission table displays RORE as a decimal and not a percentage.

#### **Dividend yield (4H.6)**

**7** A dividend of £96.3 million (£83.0 million appointed) was paid in the year compared to no payment in the prior year.

#### **Retail profit margin - household and non-household (4H.7 and 4H.8)**

**8** Both lines 7 and 8 are Ofwat calculated cells.

**9** The retail profit margins are calculated as earnings before interest and tax (after deducting wholesale charges) divided by total revenue charged to household or non-household customers respectively. Details of movements are shown in the table and discussed in the commentary to 2I and 2C.

**10** Non-household retail margin is 0.0 per cent as a result of the transfer of the non-household retail business in 2017/18 and our exit from the non-household retail market.

#### **Credit Rating (4H.9 - 4H.11)**

**11** The A- (A3) relates to our Corporate Family Rating by Moody's. This is on a stable outlook as at 31 March 2022.

**12** Moody's also rate our debt as A3 and have this on stable outlook as at 31 March 2022.

**13** S&P rate our Class A debt as A- and have this on stable outlook as at 31 March 2022.

**14** Fitch rate our Class A debt as A- and have this on stable outlook as at 31 March 2022.

#### **Return on RCV (4H.12)**

**15** Return on RCV for the year was 5.6 per cent compared with 5.1 per cent for the prior year. The increase is consistent with the increase in profit before interest, after current tax, compared with the prior year, and the increase in average RCV.

#### **Dividend cover (4H.13)**

**16** A dividend of £96.3 million (£83.0 million appointed) was paid in the year compared to no payment in the prior year.

#### **Funds from operations (4H.14)**

**17** FFO is net cash generated from operating activities adjusted to remove the changes in working capital. Ofwat acknowledge that their approach to calculating this differs from some of the methodologies applied by the credit rating agencies.

**18** FFO for the year was £494.3 million compared with £407.6 million for the prior year. The increase is due principally due to the increase in cash generated from operations discussed in the commentary for table 1D.

#### **Interest cover (cash) (4H.15)**

**19** Interest cover (cash) equals FFO as calculated above plus interest paid on borrowings, divided by interest paid on borrowings. Interest paid on borrowings excludes any accretion of interest-linked debt which is a non cash item and is made up of interest received £0.9m, interest paid £222.3m and interest on lease rentals £1.2m.

**20** The interest cover ratio for the year was 3.22 compared with 2.87 for the prior year. This metric has increased due to the higher FFO.

#### **Adjusted interest cover (cash) (4H.16)**

**21** Adjusted interest cover (cash) adjusted for regulatory depreciation of £413.4 million (2021: £381.3 million) as published by Ofwat.

**22** The cover ratio for the year was 1.4 compared with 1.1 for the prior year. This increase is a result of the increase in interest payments, as discussed in the commentary to 1D, more than offset by the increase in the regulatory depreciation.

**FFO/debt (4H.17)**

**23** The ratio for 2021/22 is 0.09 which is marginally lower to that disclosed in the prior year, 0.06. This reflects the increase in FFO, combined with the reduced net debt in the current year.

**24** As noted above, Ofwat acknowledges that its approach to calculating FFO/debt differs from some of the methodologies applied by the credit rating agencies.

**Effective tax rate (4H.18)**

**25** Effective tax rate is the current tax charge for the appointed business as a percentage of the profit before tax and fair value movements for the appointed business.

**26** The rate for 2021/22 was 54.07 per cent compared with (0.40) per cent in the prior year as set out in the following table:

	<b>2020/21</b> <b>£m</b>	<b>2021/22</b> <b>£m</b>
Profit/(loss) before tax per the Annual Performance Report	109.8	(142.1)
Fair value loss on derivatives included in Profit before tax	(23.2)	(115.1)
<b>Profit/(loss) excluding Fair value loss on derivatives (A)</b>	<b>133.0</b>	<b>(27.0)</b>
Corporation tax charged at 19% (2020-21: 19%)	25.3	(5.1)
Depreciation and amortisation	54.2	54.9
Capital allowances	(67.3)	(45.5)
Capital allowances superdeductions	-	(7.6)
Items not taxable	(5.8)	(8.3)
Items not deductible for tax purposes	1.9	2.6
Capital grants and contributions	(3.6)	(4.9)
Pension payments	(8.1)	(3.4)
Change in general provision movement	2.9	(1.7)
Transitional adjustment on adoption of SaaS	-	(9.9)
Losses carried forward	-	14.3
<b>Current tax charge for the year before adjustments in respect of previous years (B)</b>	<b>(0.5)</b>	<b>(14.6)</b>
Adjustments in respect of previous years	(5.4)	(5.1)
<b>Current tax charge for the year after adjustments in respect of previous years</b>	<b>(5.9)</b>	<b>(19.7)</b>
Effective tax rate (B/A)	(0.4%)	(54.1%)



**Retained cash flow (RCF) (4H.19)**

**27** Free cash flow for the year was £411.3 million compared with £407.6 million for the prior year. The increase results from there being a dividend paid in the current year more than offset by the higher FFO as discussed above.

**RCF/Net debt (4H.20)**

**28** The ratio for the year was 0.07 as a result of the movement in RCF and net debt discussed above.

**Borrowings (4H.21 - 4H.28)**

**29** The Group's policy for the management of interest rate risk is to achieve a balanced mix of funding at index-linked (to RPI or CPI and in time CPIH), fixed and floating rates of interest. The Group endeavours to obtain the finest rates (lowest borrowing and finest depositing rates) consistent with ensuring that the relevant group treasury objectives are met in full, i.e. the provision of adequate finance for Anglian Water at all times and maintaining security of principal.

**30** The proportion of borrowings split between fixed, floating and index-linked has changed modestly from the prior year. The Treasury policy was updated and approved by the Board in January 2022 and confirmed the policy for inflation linked debt, as a proportion of RCV, to be a range of 45-55 per cent with CPIH to be undertaken as for future hedging subject to the market developing and floating rate debt to be in a 5-15 per cent range. The main drivers for those change are given in the Table 1E commentary.

**31** The maturity profile of our debt reflects the long average life of our assets and is structured to ensure the avoidance of significant concentrations of refinancing within any individual period. The weighted average years to maturity is 11.6 years and the weighted exposure to tenor of issue is 23.6 years. The main change is due to accretion on the longer dated index linked debt and the effluxion of time in relation to debt maturities and amortisation schedules.

**Table 4I - Financial Derivatives**

Line description	Nominal value by maturity (net) at 31 March				Total value at 31 March		Total accretion at 31 March	Interest rate	
	0 to 1 years	1 to 2 years	2 to 5 years	Over 5 years	Nominal value (net)	Mark to Market		Payable	Receivable
Units	£m	£m	£m	£m	£m	£m	£m	%	%

**Interest rate swap (sterling)**

1	Floating to fixed rate	17.900	-	25.000	524.013	566.913	109.019	-	0.029	0.003
2	Floating from fixed rate	17.900	-	650.000	229.532	897.432	19.814	-	0.012	0.017
3	Floating to index linked	-	-	150.000	566.303	716.303	767.019	85.644	0.027	0.014
4	Floating from index linked	-	-	-	-	-	-	-	-	-
5	Fixed to index-linked	-	-	-	665.857	665.857	211.924	55.940	0.009	0.036
6	Fixed from index-linked	-	-	-	-	-	-	-	-	-
7	Index-linked to index-linked	-	-	-	-	-	-	-	-	-
8	Total	35.800	-	825.000	1,985.706	2,846.506	1,107.776	141.584	-	-

**Foreign Exchange**

9	Cross currency swap USD	-	-	-	-	-	-	-	-	-
10	Cross currency swap EUR	-	-	-	-	-	-	-	-	-
11	Cross currency swap YEN	-	-	-	-	-	-	-	-	-
12	Cross currency swap Other	-	-	-	-	-	-	-	-	-
13	Total	-	-	-	-	-	-	-	-	-

**Currency interest rate**

14	Currency interest rate swaps USD	-	110.530	129.725	40.067	280.322	(31.522)	-	-	-
15	Currency interest rate swaps EUR	-	-	-	-	-	-	-	-	-
16	Currency interest rate swaps YEN	-	-	-	101.230	101.230	19.687	-	-	-
17	Currency interest rate swaps Other	-	-	-	-	-	-	-	-	-
18	Total	-	110.530	129.725	141.296	381.552	(11.835)	-	-	-

Line description	Nominal value by maturity (net) at 31 March				Total value at 31 March		Total accretion at 31 March	Interest rate	
	0 to 1 years	1 to 2 years	2 to 5 years	Over 5 years	Nominal value (net)	Mark to Market		Payable	Receivable
Units	£m	£m	£m	£m	£m	£m	£m	%	%

Forward currency contracts									
19	Forward currency contracts USD	-	-	-	-	-	-	-	-
20	Forward currency contracts EUR	-	-	-	-	-	-	-	-
21	Forward currency contracts YEN	-	-	-	-	-	-	-	-
22	Forward currency contracts CAD	-	-	-	-	-	-	-	-
23	Forward currency contracts AUD	-	-	-	-	-	-	-	-
24	Forward currency contracts HKD	-	-	-	-	-	-	-	-
25	Forward currency contracts Other	-	-	-	-	-	-	-	-
26	Total	-	-	-	-	-	-	-	-

Other financial derivatives									
27	Other financial derivatives	9.139	14.977	119.199	485.793	629.107	(7.312)	-	-
28	Total financial derivatives	44.939	125.507	1,073.924	2,612.795	3,857.165	1,088.629	141.584	-

**1** The nominal value is the face value of the financial instruments. These instruments are marked to market at the end of each reporting period and reported in the balance sheet at their fair value. The total fair value of financial instruments in Table 1C of £1,088.6 million agrees to the table due to the inclusion of energy hedges which relate to the risk management of the businesses operating costs for Power. Whilst this does not strictly relate to financing obligations, the positions have been included based on the RAG guidance document which stipulates power as an example of other financial derivatives.

### Floating to fixed rate (4I.1)

**2** During the year, the following changes occurred in the floating to fixed rate category:

- AMP 7 new pre hedges executed £250 million: forward starting hedges have been undertaken in respect of debt issuance later in the AMP;
- Santander offsetting swaps closed out were £182.6 million;
- Swaps matured during the year were £269.6 million.

**3** Changes in bucketing relate to the natural passage of time.

**4** Interest rates on the maturing and closed out swaps were higher than the average for the grouping so average rates have decreased. The lower receivable floating leg is partially offset by higher SONIA compared to Libor last year.

### **Floating from fixed rate (4I.2)**

**5** During the year, the following changes occurred in the floating from fixed rate category:

- Santander offsetting swaps closed out were £182.6 million: the opportunity was taken in restructuring these swaps for SONIA transition to consolidate the positions;
- Swaps matured during the year were £50.0 million.

**6** Changes in bucketing relate to the natural passage of time.

**7** Interest rate here are marginally higher than last year reflecting higher market rates.

### **Floating to index linked (4I.3)**

**8** There is no change in net notional, though there has been a change to the bucketing in respect of the maturity of a £25 million RPI swap.

**9** Weighted average interest rates payable for index linked debt remained broadly unchanged year on year. Weighted average interest rates receivable has increased reflecting the upward movement in SONIA rates within the year.

### **Fixed to index linked (4I.5)**

**10** No notable movements in this category as no new swaps have been executed or existing swaps maturing.

### **Currency interest rate swaps USD/YEN (4I.13 - 4I.15)**

**11** The movement on the USD cross currency swaps line relates to:

- New swap in respect of a \$35 million Biodiversity bond;
- Termination of class B debt \$617 million as a consequence of the equity injection in July 2021;
- Maturity of swaps in respect of \$160 million 4.52 per cent private placements 2021.

**12** Weighted average interest rate is no longer required, so not compared.

### Other financial derivatives (4I.23)

**13** Other financial derivatives consists of electricity hedges and fixed to fixed interest rate swaps. The rates quoted are the fixed rates on the interest swaps only. The net reduction in the notional relates to the following:

- £100 million repayment of class B debt hedged with fixed rate to fixed rate derivatives;
- £14 million increase in commodity hedges.

### Assumptions:

**14** For floating rate derivatives the SONIA rate as of 31 March 2022 has been used for calculations (0.6896 per cent).

**15** The Anglian Water Services Financing Group holds derivative financial instruments which contain more than 2 legs (i.e. multiple pay and receive legs). In legal terms these form a single contract but these have been split to reflect the relevant risks implied on an individual leg basis. Where the risks could be consolidated (i.e. pay RPI receive floating) this has been done to best reflect the net impact of the instruments.

**16** The Mark to Market position is the full fair value of the positions with the total accretion column representing the accretion component of this full amount. Positive numbers are liability and negative numbers are asset as per RAG 4.10.

**Table 4J -Base expenditure analysis for the 12 months ended 31 March 2022 - water resources and water network+**

Line description		Units	Water resources	Water network+				Total
				Raw water distribution	Raw water storage	Water treatment	Treated water distribution	
Operating expenditure								
1	Power	£m	8.608	3.882	0.223	7.761	14.661	35.135
2	Income treated as negative expenditure	£m	(0.087)	(0.025)	(0.004)	(0.135)	(0.229)	(0.480)
3	Bulk supply	£m	-	-	-	2.306	0.112	2.418
4	Renewals expensed in year (infrastructure)	£m	-	-	-	-	33.471	33.471
5	Renewals expensed in year (non-infrastructure)	£m	-	-	-	-	-	-
6	Other operating expenditure	£m	16.035	2.381	0.146	36.156	61.723	116.441
7	Local authority and Cumulo rates	£m	2.887	0.471	0.000	6.012	31.369	40.739
Service Charges								
8	Canal & River Trust abstraction charges/ discharge consents	£m	-	-	-	-	-	-
9	Environment Agency / NRW abstraction charges/ discharge consents	£m	-	-	-	-	-	-
10	Other abstraction charges/ discharge consents	£m	10.109	-	-	0.489	-	10.597
Other operating expenditure								
11	Costs associated with Traffic Management Act	£m	-	-	-	-	1.808	1.808
12	Costs associated with lane rental schemes	£m	-	-	-	-	-	-
13	Statutory water softening	£m	-	-	-	-	-	-
14	Total base operating expenditure	£m	37.551	6.709	0.366	52.587	142.916	240.130
Capital expenditure								
15	Maintaining the long term capability of the assets - infra	£m	0.223	0.663	-	-	12.838	13.724
16	Maintaining the long term capability of the assets - non-infra	£m	3.716	0.267	0.069	19.952	51.569	75.573
17	Total base capital expenditure	£m	3.939	0.930	0.069	19.952	64.407	89.297
Traffic Management Act								
18	Projects incurring costs associated with Traffic Management Act	nr	-	-	-	-	32,516.000	32,516.000

### **Maintenance non-infra – Water resources**

**1** This year-on-year reduction follows high levels of prior year expenditure on borehole related schemes including drilling and fitout, energy optimisation and general maintenance. In addition, prior year expenditure to address emerging needs at river intakes and pumping stations was over and above 2021/22 levels.

### **Maintenance non-infra – Water treatment**

**2** The increase in annual expenditure on water treatment was driven principally by a number of large maintenance schemes at several water treatment works in 2021/22. This included significant schemes at our treatment works at Elsham (£1.3m), Wing (£1.2m), and Watton (£1.2m) alongside a number of smaller schemes where equivalent expenditure was not evident in the previous financial year.

**3** The timing of the expenditure during the AMP will have a material impact on the stages of delivery of large water treatment maintenance schemes and a larger number of schemes that were in their planning phases during year-1 of AMP7 are now incurring greater cost as they progress through construction.

### **Maintenance infra – Treated water distribution**

**4** The year-on-year increase seen in capital maintenance spend on our treated water distribution networks is primarily driven by the capitalisation of £18.3m of expenditure relating to the replacement of stop taps to reflect the long term use of these assets. This expenditure was recognised as operating expenditure in 2020/21.

**5** Significant additional spend was also incurred in 2021/22 aimed at further reducing our network leakage. This includes, but is not limited to, £6.8m on strategic pressure management, £3.6m on further leakage mitigation and optimisation activities and c. £2.9m on frequent burst main and pipeline rehabilitation.

**6** Larger, complex and more expensive jobs tend to be completed in the later years of AMP periods with more design and survey work taking place in the early years, and this is reflected in the increased cost incurred in 2021/22.

**Table 4K -Base expenditure analysis for the 12 months ended 31 March 2022 - wastewater network + and bioresources**

Line description	Units	Expenditure in report year							Total
		Wastewater network+					Bioresources		
		Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge Transport	Sludge Treatment	

**Operating expenditure**

1	Power	£m	8.760	3.298	1.096	26.510	1.604	0.049	0.535	0.000	41.852
2	Income treated as negative expenditure	£m	(0.035)	(0.013)	(0.004)	(1.949)	(0.001)	(0.004)	(6.421)	(1.957)	(10.384)
3	Bulk discharge	£m	-	-	-	-	-	-	-	-	-
4	Renewals expensed in year (infrastructure)	£m	12.952	4.873	1.624	-	-	-	-	-	19.449
5	Renewals expensed in year (non-infrastructure)	£m	-	-	-	-	-	-	-	-	-
6	Other operating expenditure	£m	29.843	11.795	3.944	67.348	3.947	24.515	36.123	13.759	191.275
7	Local authority and Cumulo rates	£m	0.098	0.035	0.015	18.837	0.981	0.067	3.023	0.033	23.090

**Service Charges**

8	Canal & River Trust discharge consents	£m	0.107	0.040	0.013	0.000	-	-	-	-	0.161
9	Environment Agency / NRW discharge consents	£m	1.409	0.530	0.177	5.911	0.144	-	0.146	-	8.317
10	Other discharge charges / permits	£m	-	-	-	-	-	-	-	-	-

**Location specific costs & obligations**

11	Costs associated with Traffic Management Act	£m	0.007	0.021	0.007	0.007	-	-	-	-	0.043
12	Costs associated with lane rental schemes	£m	-	-	-	-	-	-	-	-	-
13	Costs associated with Industrial Emissions Directive	£m	-	-	-	-	-	-	-	-	-

14	Total base operating expenditure	£m	53.141	20.579	6.873	116.665	6.675	24.628	33.407	11.836	273.802
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**Capital expenditure**

15	Maintaining the long term capability of the assets - infra	£m	20.547	7.806	2.578	-	-	-	-	-	30.931
16	Maintaining the long term capability of the assets - non-infra	£m	9.366	3.523	1.175	98.333	-	0.049	16.526	1.665	130.637
17	Total base capital expenditure	£m	29.913	11.329	3.753	98.333	-	0.049	16.526	1.665	161.568



Line description	Units	Expenditure in report year								
		Wastewater network+					Bioresources			Total
		Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge Transport	Sludge Treatment	Sludge Disposal	

Traffic Management Act										
18	Projects incurring costs associated with Traffic Management Act	nr	1,734	-	-	-	-	-	-	1,734

Operating expenditure (AMP 7 shadow reported values)										
19	Power	£m	-	-	-	6.649	-	-	5.666	12.315
20	Income treated as negative expenditure	£m	-	-	-	-	-	-	(10.078)	(10.078)

### Maintenance infra

**1** The increase seen in Sewage Collection was driven principally by continued additional spend on proactive network maintenance, CCTV and relining activities driven by a focus on pollution incidents reduction.

### Maintenance non-infra

**2** Small variances exist across all areas of non-infra sewage maintenance activity; treatment increase included work at Southend and sludge treatment including work at Gt Billing as advised in the Bioresources opex commentary for table 4E.

### Shadow Reporting Line 19 & 20

**3** We have adjusted the values for Power & Income treated as negative opex to reflect the required shadow reporting position.

# Table 4L - Enhancement Expenditure - Wholesale Water

Line description		Units	Expenditure in report year					Total
			Water resources	Water network+			Treated water distribution	
				Raw water transport	Raw water storage	Water treatment		
EA/NRW environmental programme (WINEP/NEP)								
1	Ecological improvements at abstractions	Capex	£m	0.391	-	-	-	0.391
2	Ecological improvements at abstractions	Opex	£m	0.925	-	-	-	0.925
3	Ecological improvements at abstractions	Totex	£m	1.316	-	-	-	1.316
4	Eels Regulations (measures at intakes)	Capex	£m	3.123	-	-	-	3.123
5	Eels Regulations (measures at intakes)	Opex	£m	0.001	-	-	-	0.001
6	Eels Regulations (measures at intakes)	Totex	£m	3.124	-	-	-	3.124
7	Invasive Non Native Species	Capex	£m	-	-	-	-	-
8	Invasive Non Native Species	Opex	£m	-	-	-	-	-
9	Invasive Non Native Species	Totex	£m	-	-	-	-	-
10	Drinking Water Protected Areas (schemes)	Capex	£m	0.273	-	-	-	0.273
11	Drinking Water Protected Areas (schemes)	Opex	£m	-	-	-	-	-
12	Drinking Water Protected Areas (schemes)	Totex	£m	0.273	-	-	-	0.273
13	Water Framework Directive measure	Capex	£m	-	-	-	-	-
14	Water Framework Directive measure	Opex	£m	-	-	-	-	-
15	Water Framework Directive measure	Totex	£m	-	-	-	-	-
16	Investigations	Capex	£m	0.160	-	0.001	-	0.161
17	Investigations	Opex	£m	-	-	-	-	-
18	Investigations	Totex	£m	0.160	-	0.001	-	0.161
19	Total environmental programme expenditure	Totex	£m	4.873	-	0.001	-	4.874

Line description		Units	Expenditure in report year						Total
			Water resources	Water network+				Treated water distribution	
				Raw water transport	Raw water storage	Water treatment			
Supply-demand balance									
20	Supply-side improvements delivering benefits in 2020-2025	Capex	£m	0.791	-	-	0.645	(0.001)	1.435
21	Supply-side improvements delivering benefits in 2020-2025	Opex	£m	-	-	-	-	-	-
22	Supply-side improvements delivering benefits in 2020-2025	Totex	£m	0.791	-	-	0.645	(0.001)	1.435
23	Demand-side improvements delivering benefits in 2020-2025 (excl leakage and metering)	Capex	£m	-	-	-	-	-	-
24	Demand-side improvements delivering benefits in 2020-2025 (excl leakage and metering)	Opex	£m	-	-	-	-	-	-
25	Demand-side improvements delivering benefits in 2020-2025 (excl leakage and metering)	Totex	£m	-	-	-	-	-	-
26	Leakage improvements delivering benefits in 2020-2025	Capex	£m	-	-	-	-	26.404	26.404
27	Leakage improvements delivering benefits in 2020-2025	Opex	£m	0.856	-	-	-	6.712	7.568
28	Leakage improvements delivering benefits in 2020-2025	Totex	£m	0.856	-	-	-	33.116	33.972
29	Internal interconnectors delivering benefits in 2020-2025	Capex	£m	-	-	-	-	65.631	65.631
30	Internal interconnectors delivering benefits in 2020-2025	Opex	£m	-	-	-	-	-	-
31	Internal interconnectors delivering benefits in 2020-2025	Totex	£m	-	-	-	-	65.631	65.631
32	Supply demand balance improvements delivering benefits starting from 2026	Capex	£m	-	-	-	1.516	-	1.516
33	Supply demand balance improvements delivering benefits starting from 2026	Opex	£m	-	-	-	-	-	-
34	Supply demand balance improvements delivering benefits starting from 2026	Totex	£m	-	-	-	1.516	-	1.516
35	Strategic regional water resources	Capex	£m	1.519	-	-	-	-	1.519
36	Strategic regional water resources	Opex	£m	0.112	-	-	-	-	0.112
37	Strategic regional water resources	Totex	£m	1.631	-	-	-	-	1.631
38	Total supply demand expenditure	Totex	£m	3.278	-	-	2.161	98.746	104.185

Line description		Units	Expenditure in report year					Total	
			Water resources	Water network+					
				Raw water transport	Raw water storage	Water treatment	Treated water distribution		
Metering									
39	New meters requested by existing customers (optants)	Capex	£m	-	-	-	-	1.766	1.766
40	New meters requested by existing customers (optants)	Opex	£m	-	-	-	-	-	-
41	New meters requested by existing customers (optants)	Totex	£m	-	-	-	-	1.766	1.766
42	New meters introduced by companies for existing customers	Capex	£m	-	-	-	-	-	-
43	New meters introduced by companies for existing customers	Opex	£m	-	-	-	-	-	-
44	New meters introduced by companies for existing customers	Totex	£m	-	-	-	-	-	-
45	New meters for existing customers - business	Capex	£m	-	-	-	-	0.150	0.150
46	New meters for existing customers - business	Opex	£m	-	-	-	-	-	-
47	New meters for existing customers - business	Totex	£m	-	-	-	-	0.150	0.150
48	Replacement of existing basic meters with smart meters	Capex	£m	-	-	-	-	9.347	9.347
49	Replacement of existing basic meters with smart meters	Opex	£m	-	-	-	-	-	-
50	Replacement of existing basic meters with smart meters	Totex	£m	-	-	-	-	9.347	9.347
51	Smart meter infrastructure	Capex	£m	-	-	-	-	4.487	4.487
52	Smart meter infrastructure	Opex	£m	-	-	-	-	0.839	0.839
53	Smart meter infrastructure	Totex	£m	-	-	-	-	5.326	5.326
54	Total metering expenditure	Totex	£m	-	-	-	-	16.589	16.589

Line description		Units	Expenditure in report year					Total
			Water resources	Water network+			Treated water distribution	
				Raw water transport	Raw water storage	Water treatment		
Other enhancement								
55	Improvements to taste, odour and colour	Capex	£m	-	-	-	-	-
56	Improvements to taste, odour and colour	Opex	£m	-	-	-	-	-
57	Improvements to taste, odour and colour	Totex	£m	-	-	-	-	-
58	Meeting lead standards	Capex	£m	-	-	1.754	0.665	2.419
59	Meeting lead standards	Opex	£m	-	-	-	0.147	0.147
60	Meeting lead standards	Totex	£m	-	-	1.754	0.812	2.566
61	Addressing raw water deterioration	Capex	£m	-	-	5.201	-	5.201
62	Addressing raw water deterioration	Opex	£m	-	-	0.173	-	0.173
63	Addressing raw water deterioration	Totex	£m	-	-	5.374	-	5.374
64	Improvements to river flow	Capex	£m	(0.279)	-	-	-	(0.279)
65	Improvements to river flow	Opex	£m	0.169	-	-	-	0.169
66	Improvements to river flow	Totex	£m	(0.110)	-	-	-	(0.110)
67	Enhancing resilience to low probability high consequence events	Capex	£m	0.008	(0.021)	-	(0.164)	(0.439)
68	Enhancing resilience to low probability high consequence events	Opex	£m	-	-	-	0.008	0.008
69	Enhancing resilience to low probability high consequence events	Totex	£m	0.008	(0.021)	-	(0.156)	(0.431)
70	Security - SEMD	Capex	£m	-	-	1.364	-	1.364
71	Security - SEMD	Opex	£m	-	-	-	-	-
72	Security - SEMD	Totex	£m	-	-	1.364	-	1.364
73	Security - Non-SEMD	Capex	£m	-	-	-	-	-
74	Security - Non-SEMD	Opex	£m	-	-	-	-	-
75	Security - Non-SEMD	Totex	£m	-	-	-	-	-

Line description		Units	Expenditure in report year					Total
			Water resources	Water network+				
				Raw water transport	Raw water storage	Water treatment	Treated water distribution	
<b>Other enhancement</b>								
76	Additional line 1 - Low Pressure (DG2)	Capex	£m	-	-	-	3.707	3.707
77	Additional line 1 - Low Pressure (DG2)	Opex	£m	-	-	-	-	-
78	Additional line 2	Capex	£m	-	-	-	-	-
79	Additional line 2	Opex	£m	-	-	-	-	-
80	Additional line 3	Capex	£m	-	-	-	-	-
81	Additional line 3	Opex	£m	-	-	-	-	-
82	Additional line 4	Capex	£m	-	-	-	-	-
83	Additional line 4	Opex	£m	-	-	-	-	-
84	Additional line 5	Capex	£m	-	-	-	-	-
85	Additional line 5	Opex	£m	-	-	-	-	-
86	Total other enhancement expenditure	Totex	£m	(0.102)	(0.021)	-	8.230	4.363
<b>Total enhancement</b>								
87	Total enhancement expenditure	Capex	£m	5.986	(0.021)	-	10.219	111.992
88	Total enhancement expenditure	Opex	£m	2.063	-	-	0.173	7.706
89	Total enhancement expenditure	Totex	£m	8.049	(0.021)	-	10.392	119.698

Line description		Units		Cumulative expenditure on schemes completed in the report year					Cumulative expenditure on all schemes to reporting year end	Cumulative allowed expenditure on all schemes to reporting year end	Cumulative allowed expenditure on all schemes to 2020-25	
				Water resources	Water network+							Total
					Raw water transport	Raw water storage	Water treatment	Treated water distribution				
EA/NRW environmental programme (WINEP/NEP)												
1	Ecological improvements at abstractions	Capex	£m	-	-	-	-	-	-	-	-	
2	Ecological improvements at abstractions	Opex	£m	-	-	-	-	-	-	-	-	
3	Ecological improvements at abstractions	Totex	£m	-	-	-	-	-	1.578	-	-	
4	Eels Regulations (measures at intakes)	Capex	£m	-	-	-	-	-	-	-	-	
5	Eels Regulations (measures at intakes)	Opex	£m	-	-	-	-	-	-	-	-	
6	Eels Regulations (measures at intakes)	Totex	£m	-	-	-	-	-	1.141	3.156	7.993	
7	Invasive Non Native Species	Capex	£m	-	-	-	-	-	-	-	-	
8	Invasive Non Native Species	Opex	£m	-	-	-	-	-	-	-	-	
9	Invasive Non Native Species	Totex	£m	-	-	-	-	-	0.016	1.875	4.750	
10	Drinking Water Protected Areas (schemes)	Capex	£m	-	-	-	-	-	-	-	-	
11	Drinking Water Protected Areas (schemes)	Opex	£m	-	-	-	-	-	-	-	-	
12	Drinking Water Protected Areas (schemes)	Totex	£m	-	-	-	-	-	0.603	12.285	31.768	
13	Water Framework Directive measure	Capex	£m	-	-	-	-	-	-	-	-	
14	Water Framework Directive measure	Opex	£m	-	-	-	-	-	-	-	-	
15	Water Framework Directive measure	Totex	£m	-	-	-	-	-	-	10.155	26.887	
16	Investigations	Capex	£m	-	-	-	-	-	-	-	-	
17	Investigations	Opex	£m	-	-	-	-	-	-	-	-	
18	Investigations	Totex	£m	-	-	-	-	-	0.550	0.413	1.047	
19	Total environmental programme expenditure	Totex	£m	-	-	-	-	-	3.887	27.884	72.445	

Line description	Units	Cumulative expenditure on schemes completed in the report year						Cumulative expenditure on all schemes to reporting year end	Cumulative allowed expenditure on all schemes to reporting year end	Cumulative allowed expenditure on all schemes 2020-25	
		Water resources	Water network+				Total				
			Raw water transport	Raw water storage	Water treatment	Treated water distribution					
Supply-demand balance											
20	Supply-side improvements delivering benefits in 2020-2025	Capex	£m	-	-	-	-	-	-	-	
21	Supply-side improvements delivering benefits in 2020-2025	Opex	£m	-	-	-	-	-	-	-	
22	Supply-side improvements delivering benefits in 2020-2025	Totex	£m	-	-	-	-	-	1.883	22.452	
23	Demand-side improvements delivering benefits in 2020-2025 (excl leakage and metering)	Capex	£m	-	-	-	-	-	-	-	
24	Demand-side improvements delivering benefits in 2020-2025 (excl leakage and metering)	Opex	£m	-	-	-	-	-	-	-	
25	Demand-side improvements delivering benefits in 2020-2025 (excl leakage and metering)	Totex	£m	-	-	-	-	-	-	-	
26	Leakage improvements delivering benefits in 2020-2025	Capex	£m	-	-	-	0.017	0.017	-	-	
27	Leakage improvements delivering benefits in 2020-2025	Opex	£m	1.085	-	-	10.463	11.548	-	-	
28	Leakage improvements delivering benefits in 2020-2025	Totex	£m	1.085	-	-	10.480	11.565	51.024	26.134	
29	Internal interconnectors delivering benefits in 2020-2025	Capex	£m	-	-	-	-	-	-	-	
30	Internal interconnectors delivering benefits in 2020-2025	Opex	£m	-	-	-	-	-	-	-	
31	Internal interconnectors delivering benefits in 2020-2025	Totex	£m	-	-	-	-	-	102.625	136.700	
32	Supply demand balance improvements delivering benefits starting from 2026	Capex	£m	-	-	-	-	-	-	-	
33	Supply demand balance improvements delivering benefits starting from 2026	Opex	£m	-	-	-	-	-	-	-	
34	Supply demand balance improvements delivering benefits starting from 2026	Totex	£m	-	-	-	-	-	2.698	1.700	
35	Strategic regional water resources	Capex	£m	-	-	-	-	-	-	-	
36	Strategic regional water resources	Opex	£m	-	-	-	-	-	-	-	
37	Strategic regional water resources	Totex	£m	-	-	-	-	-	2.810	4.997	
38	Total supply demand expenditure	Totex	£m	-	-	-	-	-	161.040	191.984	



Line description	Units	Cumulative expenditure on schemes completed in the report year						Cumulative expenditure on all schemes to reporting year end	Cumulative allowed expenditure on all schemes to reporting year end	Cumulative allowed expenditure on all schemes to reporting year end 2020-25
		Water resources	Water network+				Total			
			Raw water transport	Raw water storage	Water treatment	Treated water distribution				
<b>Metering</b>										
New meters requested by existing customers (optants)	Capex	£m	-	-	-	-	-	-	-	-
New meters requested by existing customers (optants)	Opex	£m	-	-	-	-	-	-	-	-
New meters requested by existing customers (optants)	Totex	£m	-	-	-	-	-	-	-	-
New meters introduced by companies for existing customers	Capex	£m	-	-	-	-	-	-	-	-
New meters introduced by companies for existing customers	Opex	£m	-	-	-	-	-	-	-	-
New meters introduced by companies for existing customers	Totex	£m	-	-	-	-	-	-	-	-
New meters for existing customers - business	Capex	£m	-	-	-	-	-	-	-	-
New meters for existing customers - business	Opex	£m	-	-	-	-	-	-	-	-
New meters for existing customers - business	Totex	£m	-	-	-	-	-	-	-	-
Replacement of existing basic meters with smart meters	Capex	£m	-	-	-	-	-	-	-	-
Replacement of existing basic meters with smart meters	Opex	£m	-	-	-	-	-	-	-	-
Replacement of existing basic meters with smart meters	Totex	£m	-	-	-	-	-	-	-	-
Smart meter infrastructure	Capex	£m	-	-	-	-	-	-	-	-
Smart meter infrastructure	Opex	£m	-	-	-	-	-	-	-	-
Smart meter infrastructure	Totex	£m	-	-	-	-	-	-	-	-
Total metering expenditure	Totex	£m	-	-	-	-	-	-	35.882	52.603
										140.005

Line description	Units	Cumulative expenditure on schemes completed in the report year						Cumulative expenditure on all schemes to reporting year end	Cumulative allowed expenditure on all schemes to reporting year end	Cumulative allowed expenditure on all schemes 2020-25	
		Water resources	Water network+				Total				
			Raw water transport	Raw water storage	Water treatment	Treated water distribution					
<b>Other enhancement</b>											
Improvements to taste, odour and colour	£m	Capex	-	-	-	-	-	-	-	-	
Improvements to taste, odour and colour	£m	Opex	-	-	-	-	-	-	-	-	
Improvements to taste, odour and colour	£m	Totex	-	-	-	-	-	-	-	-	
Meeting lead standards	£m	Capex	-	-	-	-	-	-	-	-	
Meeting lead standards	£m	Opex	-	-	-	-	-	-	-	-	
Meeting lead standards	£m	Totex	-	-	-	-	-	4,363	4,963	13,209	
Addressing raw water deterioration	£m	Capex	-	-	-	-	-	-	-	-	
Addressing raw water deterioration	£m	Opex	-	-	-	-	-	-	-	-	
Addressing raw water deterioration	£m	Totex	-	-	-	-	-	15,525	8,162	21,723	
Improvements to river flow	£m	Capex	-	-	-	-	-	-	-	-	
Improvements to river flow	£m	Opex	-	-	-	-	-	-	-	-	
Improvements to river flow	£m	Totex	-	-	-	-	-	2,816	-	-	
Enhancing resilience to low probability high consequence events	£m	Capex	-	-	-	-	-	-	-	-	
Enhancing resilience to low probability high consequence events	£m	Opex	-	-	-	-	-	-	-	-	
Enhancing resilience to low probability high consequence events	£m	Totex	-	-	-	-	-	11,951	7,573	20,157	
Security - SEMD	£m	Capex	-	-	-	-	-	-	-	-	
Security - SEMD	£m	Opex	-	-	-	-	-	-	-	-	
Security - SEMD	£m	Totex	-	-	-	-	-	1,422	5,741	15,149	
Security - Non-SEMD	£m	Capex	-	-	-	-	-	-	-	-	
Security - Non-SEMD	£m	Opex	-	-	-	-	-	-	-	-	
Security - Non-SEMD	£m	Totex	-	-	-	-	-	-	-	-	

Line description	Units	Cumulative expenditure on schemes completed in the report year						Cumulative expenditure on all schemes to reporting year end	Cumulative allowed expenditure on all schemes to reporting year end	Cumulative allowed expenditure on all schemes 2020-25
		Water resources	Water network +				Total			
			Raw water transport	Raw water storage	Water treatment	Treated water distribution				
Other enhancement										
76 Additional line 1 - Low Pressure (DG2)	£m	Capex	-	-	-	-	-	6.975	-	-
77 Additional line 1 - Low Pressure (DG2)	£m	Opex	-	-	-	-	-	0.169	-	-
78 Additional line 2	£m	Capex	-	-	-	-	-	-	-	-
79 Additional line 2	£m	Opex	-	-	-	-	-	-	-	-
80 Additional line 3	£m	Capex	-	-	-	-	-	-	-	-
81 Additional line 3	£m	Opex	-	-	-	-	-	-	-	-
82 Additional line 4	£m	Capex	-	-	-	-	-	-	-	-
83 Additional line 4	£m	Opex	-	-	-	-	-	-	-	-
84 Additional line 5	£m	Capex	-	-	-	-	-	-	-	-
85 Additional line 5	£m	Opex	-	-	-	-	-	-	-	-
Total other enhancement expenditure	£m	Totex	-	-	-	-	-	43.221	26.439	70.238
Total enhancement										
Total enhancement expenditure	£m	Capex	-	-	-	-	-	-	-	-
Total enhancement expenditure	£m	Opex	-	-	-	-	-	-	-	-
Total enhancement expenditure	£m	Totex	-	-	-	-	-	244.029	298.910	807.044

**1** There has been no cumulative expenditure on any of the reported lines for schemes completed in the report year.

## Enhancement expenditure by purpose

- 2** Figures in this table are at price of the day.
- 3** The above table excludes £0.17 million of enhancement capital expenditure in relation to third-party agreements at the Wing and Grafham water treatment works for resilience. This spend is included within the third party services capex of £1.0 million in table 4D.
- 4** The source of the data is the project systems module of our SAP business management system. Each project holds as part of its master data Business Investment Category (BIC) codes which indicate the Ofwat categories of enhancement and maintenance, infrastructure and non infrastructure, and also align with accounting separation categories. The codes are mapped to their relevant lines in the table.
- 5** It is expected that capital expenditure profiles vary year on year significantly due to the strategic prioritisation of the investment programme. Large projects and stakeholder required investments can lead to variances in year on year comparisons of the same data point.
- 6** Some credits have occurred due to movements and payments to contractors for pain and gain share which are only confirmed when a project is final accounted.
- 7** Schemes addressing low pressure have been separately reported in 4L.76 and 4L.77 Additional line 1 - Low Pressure (DG2).
- 8** We record expenditure in the year in which it is incurred, which means that for many schemes expenditure is spread over a number of years. In contrast, we record outputs in the year that schemes are commissioned. This means that in some years we may show expenditure without any apparent output.
- 9** Investments in river restoration work and our smart meter data collection network which were originally in enhancement opex have met the criteria of an intangible asset and are therefore reported in enhancement capex.
- 10** Covid 19 restrictions have meant that there has been a slow start to lead pipe replacement programme as face to face customer engagement sessions were not held and sampling and internal work in customers properties has been avoided.
- 11** The Metaldehyde ban has required us to develop alternative catchment management strategies for the remainder of this AMP period.
- 12** Last year, difficulties in separately identifying enhancement opex resulted in a lower than actual number being reported. This has been corrected for the cumulative expenditure report. The difference in additional cost over the opex number reported last year is £4.3m.
- 13** Enhancement opex and capex can be affected by accounting rules, delays in the plan, alternative solutions etc so may differ from proposed costs splits in our original plans. For example, a key variance to the final determination and plan both in year and cumulatively is on smart metering. We expected the costs for this programme of work to be reported as enhancement opex but the solution selected requires costs to be capitalised. This accounts for c.£8 million in 2021-22 and c.£26m cumulatively.

**Table 4M - Enhancement Expenditure - Wholesale Wastewater**

Line description		Units		Expenditure in report year								Total	
				Wastewater network+					Bioresources				
				Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal		
EA / NRW environmental programme (WINEP / NEP)													
1	Conservation drivers	Capex	£m	-	-	-	-	-	-	-	-	-	-
2	Conservation drivers	Opex	£m	-	-	-	-	-	-	-	-	-	-
3	Conservation drivers	Totex	£m	-	-	-	-	-	-	-	-	-	-
4	Event Duration Monitoring at intermittent discharges	Capex	£m	2.437	0.917	0.306	1.046	-	-	-	-	-	4.706
5	Event Duration Monitoring at intermittent discharges	Opex	£m	-	-	-	-	-	-	-	-	-	-
6	Event Duration Monitoring at intermittent discharges	Totex	£m	2.437	0.917	0.306	1.046	-	-	-	-	-	4.706
7	Flow monitoring at sewage treatment works	Capex	£m	-	-	-	1.106	-	-	-	-	-	1.106
8	Flow monitoring at sewage treatment works	Opex	£m	-	-	-	0.018	0.001	-	-	-	-	0.019
9	Flow monitoring at sewage treatment works	Totex	£m	-	-	-	1.124	0.001	-	-	-	-	1.125
10	Schemes to increase flow to full treatment	Capex	£m	-	-	-	9.749	-	-	-	-	-	9.749
11	Schemes to increase flow to full treatment	Opex	£m	-	-	-	0.089	-	-	-	-	-	0.089
12	Schemes to increase flow to full treatment	Totex	£m	-	-	-	9.838	-	-	-	-	-	9.838
13	Schemes to increase storm tank capacity	Capex	£m	-	-	-	32.121	-	-	-	-	-	32.121
14	Schemes to increase storm tank capacity	Opex	£m	-	-	-	0.627	-	-	-	-	-	0.627
15	Schemes to increase storm tank capacity	Totex	£m	-	-	-	32.748	-	-	-	-	-	32.748
16	Storage schemes to reduce spill frequency at CSOs, storm tanks, etc	Capex	£m	-	-	-	-	-	-	-	-	-	-
17	Storage schemes to reduce spill frequency at CSOs, storm tanks, etc	Opex	£m	-	-	-	-	-	-	-	-	-	-
18	Storage schemes to reduce spill frequency at CSOs, storm tanks, etc	Totex	£m	-	-	-	-	-	-	-	-	-	-
19	Chemical removals schemes	Capex	£m	-	-	-	0.025	-	-	-	-	-	0.025

Line description			Units	Expenditure in report year								Total	
				Wastewater network+					Bioresources				
				Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal		
20	Chemical removals schemes	Opex	£m	-	-	-	-	-	-	-	-	-	-
21	Chemical removals schemes	Totex	£m	-	-	-	0.025	-	-	-	-	-	0.025
22	Chemicals monitoring/ investigations/ options appraisals	Capex	£m	-	-	-	0.873	-	-	-	-	-	0.873
23	Chemicals monitoring/ investigations/ options appraisals	Opex	£m	-	-	-	-	-	-	-	-	-	-
24	Chemicals monitoring/ investigations/ options appraisals	Totex	£m	-	-	-	0.873	-	-	-	-	-	0.873
25	Nitrogen removal	Capex	£m	-	-	-	-	-	-	-	-	-	-
26	Nitrogen removal	Opex	£m	-	-	-	-	-	-	-	-	-	-
27	Nitrogen removal	Totex	£m	-	-	-	-	-	-	-	-	-	-
28	Phosphorus removal	Capex	£m	-	-	-	43.585	-	-	-	-	-	43.585
29	Phosphorus removal	Opex	£m	-	-	-	2.598	-	-	-	-	-	2.598
30	Phosphorus removal	Totex	£m	-	-	-	46.183	-	-	-	-	-	46.183
31	Reduction of sanitary parameters	Capex	£m	-	-	-	13.661	-	-	-	-	-	13.661
32	Reduction of sanitary parameters	Opex	£m	-	-	-	-	-	-	-	-	-	-
33	Reduction of sanitary parameters	Totex	£m	-	-	-	13.661	-	-	-	-	-	13.661
34	UV disinfection (or similar)	Capex	£m	0.341	0.128	0.043	0.461	-	-	-	-	-	0.973
35	UV disinfection (or similar)	Opex	£m	-	-	-	-	-	-	-	-	-	-
36	UV disinfection (or similar)	Totex	£m	0.341	0.128	0.043	0.461	-	-	-	-	-	0.973
37	Investigations	Capex	£m	0.625	0.235	0.078	0.595	-	-	-	-	-	1.533
38	Investigations	Opex	£m	-	-	-	0.197	-	-	-	-	-	0.197
39	Investigations	Totex	£m	0.625	0.235	0.078	0.792	-	-	-	-	-	1.730
40	Total environmental programme expenditure	Totex	£m	3.403	1.280	0.427	106.751	0.001	-	-	-	-	111.862

Line description		Units	Expenditure in report year								Total	
			Wastewater network+				Bioresources					
			Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal		
Other enhancement												
41	Growth at sewage treatment works (excluding sludge treatment)	Capex	£m	-	-	0.671	-	-	-	-	-	0.671
42	Growth at sewage treatment works (excluding sludge treatment)	Opex	£m	-	-	-	-	-	-	-	-	-
43	Growth at sewage treatment works (excluding sludge treatment)	Totex	£m	-	-	0.671	-	-	-	-	-	0.671
44	Reduce flooding risk for properties	Capex	£m	4.387	1.651	0.550	-	-	-	-	-	6.588
45	Reduce flooding risk for properties	Opex	£m	0.818	0.104	0.307	-	-	-	-	-	1.229
46	Reduce flooding risk for properties	Totex	£m	5.205	1.755	0.857	-	-	-	-	-	7.817
47	First time sewerage	Capex	£m	2.005	0.754	0.252	0.001	-	-	-	-	3.012
48	First time sewerage	Opex	£m	0.027	0.003	0.010	-	-	-	-	-	0.040
49	First time sewerage	Totex	£m	2.032	0.757	0.262	0.001	-	-	-	-	3.052
50	Sludge enhancement (quality)	Capex	£m	-	-	-	-	-	(0.013)	-	-	(0.013)
51	Sludge enhancement (quality)	Opex	£m	-	-	-	-	-	-	-	-	-
52	Sludge enhancement (quality)	Totex	£m	-	-	-	-	-	(0.013)	-	-	(0.013)
53	Sludge enhancement (growth)	Capex	£m	-	-	-	-	-	0.077	-	-	0.077
54	Sludge enhancement (growth)	Opex	£m	-	-	-	-	-	-	-	-	-
55	Sludge enhancement (growth)	Totex	£m	-	-	-	-	-	0.077	-	-	0.077
56	Odour	Capex	£m	0.097	0.037	0.012	0.314	-	0.003	-	-	0.463
57	Odour	Opex	£m	-	-	-	-	-	-	-	-	-
58	Odour	Totex	£m	0.097	0.037	0.012	0.314	-	0.003	-	-	0.463
59	Enhancing resilience to low probability high consequence events	Capex	£m	-	-	-	0.027	-	-	-	-	0.027

Line description		Units	Expenditure in report year								Total		
			Wastewater network+					Bioresources					
			Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal			
60	Enhancing resilience to low probability high consequence events	Opex	£m	-	-	-	-	-	-	-	-	-	-
61	Enhancing resilience to low probability high consequence events	Totex	£m	-	-	-	0.027	-	-	-	-	-	0.027
62	Security - SEMD	Capex	£m	-	-	-	-	-	-	-	-	-	-
63	Security - SEMD	Opex	£m	-	-	-	-	-	-	-	-	-	-
64	Security - SEMD	Totex	£m	-	-	-	-	-	-	-	-	-	-
65	Security - Non-SEMD	Capex	£m	-	-	-	-	-	-	-	-	-	-
66	Security - Non-SEMD	Opex	£m	-	-	-	-	-	-	-	-	-	-
67	Security - Non-SEMD	Totex	£m	-	-	-	-	-	-	-	-	-	-
68	NEP Groundwater	Capex	£m	-	-	-	(0.005)	-	-	-	-	-	(0.005)
69	Additional line 1 - NEP Groundwater	Opex	£m	-	-	-	-	-	-	-	-	-	-
70	Additional line 1 - NEP Groundwater	Capex	£m	-	-	-	0.013	-	-	-	-	-	0.013
71	Additional line 2 - Current Quality Obligations - Other	Opex	£m	-	-	-	-	-	-	-	-	-	-
72	Additional line 2 - Current Quality Obligations - Other	Capex	£m	-	-	-	-	-	-	-	-	-	-
73	Additional line 3	Opex	£m	-	-	-	-	-	-	-	-	-	-
74	Additional line 3	Capex	£m	-	-	-	-	-	-	-	-	-	-
75	Additional line 4	Opex	£m	-	-	-	-	-	-	-	-	-	-
76	Additional line 4	Capex	£m	-	-	-	-	-	-	-	-	-	-
77	Additional line 5	Opex	£m	-	-	-	-	-	-	-	-	-	-
78	Total other enhancement expenditure	Totex	£m	7.334	2.549	1.131	1.021	-	0.067	-	-	-	12.102



<b>Total enhancement</b>
Total enhancement expenditure
Total enhancement expenditure
Total enhancement expenditure



Line description	Units	Cumulative expenditure on schemes completed in the report year										Cumulative expenditure on all schemes to reporting year end	Cumulative expenditure on all schemes to reporting year end	Cumulative allowed expenditure on all schemes to 2020-25	
		Wastewater network+						Bioresources							Total
		Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal						
20	Chemical removals schemes	Opex	£m	-	-	-	-	-	-	-	-	-	-	-	
21	Chemical removals schemes	Totex	£m	-	-	-	-	-	-	-	-	0.025	4.611	15.112	
22	Chemicals monitoring/ investigations/ options appraisals	Capex	£m	-	-	-	-	-	-	-	-	-	-	-	
23	Chemicals monitoring/ investigations/ options appraisals	Opex	£m	-	-	-	-	-	-	-	-	-	-	-	
24	Chemicals monitoring/ investigations/ options appraisals	Totex	£m	-	-	-	-	-	-	-	-	1.647	1.243	4.073	
25	Nitrogen removal	Capex	£m	-	-	-	-	-	-	-	-	-	-	-	
26	Nitrogen removal	Opex	£m	-	-	-	-	-	-	-	-	-	-	-	
27	Nitrogen removal	Totex	£m	-	-	-	-	-	-	-	-	-	-	-	
28	Phosphorus removal	Capex	£m	-	-	-	8.272	-	-	-	-	-	8.272	-	
29	Phosphorus removal	Opex	£m	-	-	-	-	-	-	-	-	-	-	-	
30	Phosphorus removal	Totex	£m	-	-	-	8.272	-	-	-	-	69,779	129,749	425,285	
31	Reduction of sanitary parameters	Capex	£m	-	-	-	-	-	-	-	-	-	-	-	
32	Reduction of sanitary parameters	Opex	£m	-	-	-	-	-	-	-	-	-	-	-	
33	Reduction of sanitary parameters	Totex	£m	-	-	-	-	-	-	-	-	18,335	10,716	35,125	
34	UV disinfection (or similar)	Capex	£m	-	-	-	-	-	-	-	-	-	-	-	
35	UV disinfection (or similar)	Opex	£m	-	-	-	-	-	-	-	-	-	-	-	
36	UV disinfection (or similar)	Totex	£m	-	-	-	-	-	-	-	-	1,231	7,976	26,144	
37	Investigations	Capex	£m	-	-	-	-	-	-	-	-	-	-	-	
38	Investigations	Opex	£m	-	-	-	-	-	-	-	-	-	-	-	
39	Investigations	Totex	£m	-	-	-	-	-	-	-	-	2,522	0.090	0.294	
40	Total environmental programme expenditure	Totex	£m	-	-	-	-	-	-	-	-	164,956	228,887	750,231	



Line description	Units	Cumulative expenditure on schemes completed in the report year										Cumulative expenditure on all schemes to reporting year end	Cumulative allowed expenditure on all schemes to reporting year end	Cumulative allowed expenditure on all schemes to reporting year end		
		Wastewater network+						Bioresources			Total					
		Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal							
Total enhancement																
79	Total enhancement expenditure	Capex	£m	-	-	-	-	-	-	-	-	-	-	-	-	-
80	Total enhancement expenditure	Opex	£m	-	-	-	-	-	-	-	-	-	-	-	-	-
81	Total enhancement expenditure	Totex	£m	-	-	-	-	-	-	-	-	-	-	173.929	250.375	810.463

## Enhancement capital expenditure by purpose

- 1** This is Enhancement expenditure for wholesale Wastewater services, and is stated at price of the day.
- 2** £0.15m enhancement expenditure was incurred on schemes fulfilling third-party agreements in the current year.
- 3** The source of the data is the project systems module of our SAP business management system. Each project holds as part of its master data Business Investment Category (BIC) codes which indicate the Ofwat categories of enhancement and maintenance, infrastructure and non-infrastructure, and also align with accounting separation categories. The codes are mapped to their relevant lines in the table.
- 4** It is expected that capital expenditure profiles vary year on year significantly due to the strategic prioritisation of the investment programme. Large projects and stakeholder required investments can lead to variances in year on year comparisons of the same data point.
- 5** We record expenditure in the year in which it is incurred, which means that for many schemes expenditure is spread over a number of years. In contrast, we record outputs in the year that schemes are commissioned. This means that in some years we may show expenditure without any apparent output.
- 6** Some credits have occurred due to movements and payments to contractors for pain and gain share, insurance claims and accrual movements which are only confirmed when a project is final accounted.
- 7** An allocation was required for the foul, surface water drainage and highway drainage split. The allocation was based on flow estimate models provided by Anglian Water's modelling team.
- 8** We previously allocated cost to between sewage treatment and imported sludge liquor treatment, this is now changed and now follows the principle use asset rule and these costs are now 100 per cent to sewage treatment & disposal.
- 9** As per Ofwat guidance, we only report cumulative expenditure on selected output types.

## Enhancement opex expenditure by purpose

- 10** The majority of enhancement opex are coming from 3 key areas of the plan: Phosphorus removal, schemes to increase storm tank capacity and to schemes to reduce flooding risk for properties. In relation to the reported phosphorus schemes enhancement opex, £1.9m of this related to a scheme which was originally due to be a capex solution but an innovative approach led to a value for money opex scheme to be delivered.
- 11** Partnership funding which was originally in enhancement opex has met the criteria of an intangible asset and is therefore reported in enhancement capex.
- 12** Last year, difficulties in separately identifying enhancement opex resulted in a lower than actual number being reported. This has been corrected for the cumulative expenditure report. The difference in additional cost over the opex number reported last year was £1.2m.
- 13** Enhancement opex and capex can be affected by accounting rules, delays in the plan, alternative solutions etc. so may differ from proposed costs splits in our original plans.

**Table 4N - Developer services expenditure for the 12 months ended 31st March 2022 - water resources and water network+**

Line description	Units	Water network+		
		Treated water distribution		
		Capex	Opex	Totex
1 New connections	£m	20.289	0.388	20.677
2 Requisition mains	£m	22.014	0.420	22.434
3 Infrastructure network reinforcement	£m	8.806	0.168	8.974
4 s185 diversions	£m	3.329	0.064	3.393
5 Other price controlled activities	£m	-	-	-
6 Total developer services expenditure	£m	54.438	1.040	55.478

**1** New connections increased sharply on the previous year as we emerged from Covid restrictions with total connections at 23,457, an increase 23 per cent from 2020/21. Accordingly, new connections expenditure increased by c.£4 million on the previous year

**2** For requisition water mains, we commissioned 62km of onsite mains delivered by our Partners and a further 78km delivered and commissioned by Self-lay Providers, a reduction of 9 per cent and increase of 34 per cent respectively on the previous year.

**3** S185 Diversions – these schemes can be driven by local authority spend as well as developer activity with total costs in line with 2020/21.

**Table 40 - Developer services expenditure for the 12 months ended 31st March 2022 - wastewater network+ and bioresources**

Line description	Units	Wastewater network+					
		Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Total

Capex							
1	New connections	£m	0.793	0.298	0.100	-	1.191
2	Requisition sewers	£m	3.034	1.141	0.381	-	4.556
3	Infrastructure network reinforcement	£m	3.882	1.461	0.487	-	5.830
4	s185 diversions	£m	0.141	0.053	0.018	-	0.212
5	Other price controlled activities	£m	-	-	-	-	-
6	Total total developer services capex	£m	7.850	2.953	0.986	-	11.789

Opex							
7	New connections	£m	0.015	0.006	0.002	-	0.023
8	Requisition sewers	£m	0.058	0.022	0.007	-	0.087
9	Infrastructure network reinforcement	£m	0.074	0.028	0.009	-	0.111
10	s185 diversions	£m	0.003	0.001	0.001	-	0.005
11	Other price controlled activities	£m	-	-	-	-	-
12	Total developer services opex	£m	0.150	0.057	0.019	-	0.226

Totex							
13	Total developer services expenditure	£m	8.000	3.010	1.005	-	12.015

**1** New wastewater connections increased in line with new water connections; 27,679 for Year 2, up from 22,524 in 2020/21. This was the result of the easing of Covid restrictions in the first quarter of the year due to Covid-19.



**Table 4P - Expenditure on non-price control diversions for the 12 months ended 31 March 2022**

Line description	Units	Water resources	Water network+	Wastewater network+	Total
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Totex						
1	Costs associated with NSWRA diversions	£m	-	1.625	3.856	5.481
2	Costs associated with other non-price control diversions	£m	-	0.064	-	0.064
3	Other developer services non-price control totex	£m	-	-	-	-
4	Developer services non-price control totex	£m	-	1.689	3.856	5.545

**1** Reported expenditure reflects the size of the infrastructure programme and varies year to year. We expect the size of the overall programme in AMP7 to be larger than AMP6.

**Table 4Q - Developer services - New connections, properties and mains**

	Line description	Units	Water	Wastewater	Total
<b>Connections volume data</b>					
1	New connections (residential – excluding NAVs)	nr	20,849	24,602	45,451
2	New connections (business – excluding NAVs)	nr	1,234	1,456	2,690
3	Total new connections served by incumbent	nr	22,083	26,058	48,141
4	New connections – SLPs	nr	11,144	-	-
<b>Properties volume data</b>					
5	New properties (residential - excluding NAVs)	nr	22,218	26,217	48,435
6	New properties (business - excluding NAVs)	nr	1,239	1,462	2,701
7	Total new properties served by incumbent	nr	23,457	27,679	51,136
8	New residential properties served by NAVs	nr	1,835	1,139	2,974
9	New business properties served by NAVs	nr	-	-	-
10	Total new properties served by NAVs	nr	1,835	1,139	2,974
11	Total new properties	nr	25,292	28,818	54,110
12	New properties – SLP connections	nr	11,144	-	-
<b>New water mains data</b>					
13	Length of new mains (km) - requisitions	nr	62	-	-
14	Length of new mains (km) - SLPs	nr	78	-	-

**New connections, properties and length of Mains (4Q.1 - 4Q.14)**

**1** The number of new properties connected to our water network rose to 25,292 including those completed by Self-Lay Providers and New Appointment and Variation companies (NAVs).

**2** We saw challenges in the construction industry following Covid-19, with materials and labour shortages, material costs and pressure from rising demand driven by the stamp duty holiday for the first half of the year, this was an increase of 30 per cent on 2020/21. However, our 2021/22 volumes include an understated position of 1,429\* Self-lay Provider delivered connections in 2020/21.

**3** Self-lay connections were up 14 per cent (37 per cent\*) on the previous year and made up 38 per cent of total properties. Self-lay delivered 56 per cent of new water mains constructed and delivered on development sites, a 10 per cent increase.

**4** NAV water connections were 7 per cent of all properties connected in our region where connection volumes were up 120 per cent on 2020/21.

**5** 1,429 self-lay provider delivered connections were reported to us after our reporting and assurance process had been completed for 2020/21. This was due to change in business process which was not established before audit. We have included these connections in the figures for 2021/22. This gives an apparent increase in SLP connections of 37 per cent, where in fact the true figure is 14 per cent.

**Table 4R - Connected properties, customers and population**

Line description	Units	Unmeasured	Measured	Total	Voids
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**Customer numbers -  
average during the  
year**

1	Residential water only customers	000s	87.336	154.322	241.658	6.809
2	Residential wastewater only customers	000s	232.854	613.281	846.135	23.047
3	Residential water and wastewater customers	000s	223.294	1612.422	1835.716	39.396
4	Total residential customers	000s	543.484	2380.025	2923.509	69.252
5	Business water only customers	000s	0.534	34.126	34.66	7.036
6	Business wastewater only customers	000s	1.529	32.918	34.447	6.215
7	Business water & wastewater customers	000s	0.791	69.808	70.599	17.092
8	Total business customers	000s	2.854	136.852	139.706	30.343
9	Total customers	000s	546.34	2516.877	3063.215	99.595

Line description	Units	Water			Wastewater		
		Unmeasured	Measured	Total	Unmeasured	Measured	Total

**Property numbers -  
average during the  
year**

10	Residential properties billed	000s	310.630	1,766.744	2,077.374	456.148	2,225.703	2,681.851
11	Residential void properties	000s	-	-	46.205	-	-	62.443
12	Total connected residential properties	000s	-	-	2,123.579	-	-	2,744.294
13	Business properties billed	000s	1.325	103.934	105.259	2.320	102.726	105.046
14	Business void properties	000s	-	-	24.126	-	-	23.308
15	Total connected business properties	000s	-	-	129.385	-	-	128.354
16	Total connected properties	000s	-	-	2,252.964	-	-	2,872.648

		Units	Water					
			Unmeasured					
			No meter	Basic meter	AMR meter	AMI meter (capable)	AMI meter (active)	Total
17	Property and meter numbers - at end of year (31st March)							
17	Total new residential properties connected in year	I	-	-	-	-	-	-
18	Total new business properties connected in year	I	-	-	-	-	-	-
19	Residential properties billed at year end	000s	193.638	83.724	3.073	0.308	24.130	304.873
20	Residential properties unbilled at year end	000s	-	-	-	-	-	-
21	Residential void properties at year end	000s	-	-	-	-	-	7.786
22	Total connected residential properties at year end	000s	-	-	-	-	-	312.659
23	Business properties billed at year end	000s	1.321	-	-	-	-	1.321
24	Business properties unbilled at year end	000s	-	-	-	-	-	-
25	Business void properties at year end	000s	-	-	-	-	-	0.698
26	Total connected business properties at year end	000s	-	-	-	-	-	2.019
27	Total connected properties at year end	000s	-	-	-	-	-	314.678

		Units	Water					
			Measured					
			No meter	Basic meter	AMR meter	AMI meter (capable)	AMI meter (active)	Total
	Property and meter numbers - at end of year (31st March)							
17	Total new residential properties connected in year	I	2.816	13.074	0.212	6.113	-	22.215
18	Total new business properties connected in year	I	0.367	0.809	0.002	0.064	-	1.242
19	Residential properties billed at year end	000s	-	1,295.680	188.425	4.719	293.239	1,782.063
20	Residential properties unbilled at year end	000s	-	-	-	-	-	-
21	Residential void properties at year end	000s	-	-	-	-	-	39.044
22	Total connected residential properties at year end	000s	-	-	-	-	-	1,821.107
23	Business properties billed at year end	000s	-	87.454	10.306	0.185	6.386	104.331
24	Business properties unbilled at year end	000s	-	-	-	-	-	-
25	Business void properties at year end	000s	-	-	-	-	-	22.669
26	Total connected business properties at year end	000s	-	-	-	-	-	127.000

27	Total connected properties at year end	000s	-	-	-	-	-	1,948.107
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		Units	Water			Total
			Unbilled			
			Uneconomic to bill	Other	Total	
	Property and meter numbers - at end of year (31st March)					
17	Total new residential properties connected in year	I	-	-	-	22.215
18	Total new business properties connected in year	I	-	-	-	1.242
19	Residential properties billed at year end	000s	-	-	-	2,086.936
20	Residential properties unbilled at year end	000s	-	10.856	10.856	10.856
21	Residential void properties at year end	000s	-	-	-	46.830
22	Total connected residential properties at year end	000s	-	-	-	2,144.622
23	Business properties billed at year end	000s	-	-	-	105.652
24	Business properties unbilled at year end	000s	-	-	-	-
25	Business void properties at year end	000s	-	-	-	23.367
26	Total connected business properties at year end	000s	-	-	-	129.019
27	Total connected properties at year end	000s	-	-	-	2,273.641

Line description	Units	Water	Wastewater
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	Population data			
28	Resident population	000s	4909.539	6397.033
29	Business population	000s	0	199.838

		Units	Water		
			Resident population	Non-resident population	Total
30	Household population	000s	4,838.158	153.369	4,991.527
31	Measured household population	000s	4,021.130	-	4,021.130
32	Unmeasured household population	000s	817.028	-	817.028

### **Customer numbers - average during the year - unmeasured, measured and total columns (4R.1-9)**

**1** The movement in the average number of residential customers reflects the switching from unmeasured to measured along with new connections that have become billable in the year. The level of switching and new connections is in line with historical levels.

**2** In lines 5 to 8 we report the number of business properties for which we have reported revenue. They were not billed by Anglian Water. We exited the non-household retail market at the start of 2017/18 so all our connected non-household properties are now billed by licensed retailers. The average number of properties billed in the current year is higher than the previous year, which was impacted by Covid-19 lockdowns. This led to a number of properties being reported as void, particularly during the first lockdown from March to July 2020 (in line with a change made to the market code allowing use of a temporary vacancy flag).

### **Property numbers - average during the year - unmeasured, measured and total columns (4R.10 and 4R.13)**

**3** The movement in the average number of residential customers reflects the switching from unmeasured to measured along with new connections that have become billable in the year. For business properties the average number of properties billed in the current year has increased over the report year 2020/21. This is a reversal of the position seen last year when a number of properties were flagged as void as a result of the first lockdown (and, to a lesser extent, subsequent lockdowns) which saw many businesses being required to shut.

### **Residential void properties (4R.11)**

**4** The number of measured and unmeasured household voids has continued to reduce. This reduction has resulted from improving our void investigation activities that have identified and billed false voids. The void performance commitment is reported in table 3A, line 10. The void totals include accounts where other water companies bill on our behalf. Those numbers are provided to us by those companies and are assumed to be correct.

### **Business void properties (4R.14)**

**5** The Non-Household (NHH) void premises figures have been calculated using data taken from the Central Market Operating System (CMOS) which is managed by the Market Operator (MOSL) for the business retail market. We are responsible for maintaining data associated with a business premise - such as address, services provided and meter details - and retailers are responsible for maintaining data associated with the occupancy of the premise and this includes any vacant period.

**6** Data has been taken from two reports published by the central market. The first is the Market Settlement report which is published for each calendar month, with each month being updated on five pre-determined dates over a 16-month period. This report contains retailers' wholesale charges for the month and includes details of the status of a registered business premise, for example - whether occupied or vacant. The second report is a Market Data Set report which is available from the central market on any day in a calendar year. This report includes details of all the market data set on a specific day and includes if the premise was reported as occupied or vacant and if the supply was measured or unmeasured. Data from both reports have been used to derive the NHH void figures for 2021/22 in accordance with our methodology.

**7** The occupancy status of a business property registered in the central market system is controlled by the appointed retailer through market transactions carried out in CMOS. As the wholesaler, we do not have access to alter this data.

**8** The table below presents the specific published market reports used to calculate the business customer void figures for financial year ending 31 March 2022.

Billing Period & Market Report	Published Date	Unique Vacant SPIDs (Premises)
April 2021 R3 Settlement	01-07-2022	29,846
May 2021 R3 Settlement	02-04-2022	29,906
June 2021 R3 Settlement	03-04-2022	29,196
July 2021 R2 Settlement	10-06-2021	31,107
August 2021 Settlement	11-04-2021	30,685
September 2021 R2 Settlement	12-06-2020	30,752
October 2021 R2 Settlement	01-07-2022	30,732
November 2021 R2 Settlement	02-04-2022	30,716
December 2021 R2 Settlement	03-04-2022	29,992
January 2022 R1 Settlement	02-04-2022	31,209
February 2022 R1 Settlement	03-04-2022	30,459
March 2022 - Market Data Set	03-31-2022	29,531
Report		
	Average	30,344

**9** Calculating the Average Number of Void Premises: The 11 market published Market Settlement Disaggregated 1 reports and the one Market Data Set report are used to derive an average of vacant premises over the 12 month period ending 31 March 2022. The list of vacant premises is then mapped to market data set reports WSSCO and SSSCO to identify if the supply is measured or unmeasured.

**10** Calculating the Number of Void Premises at Year End: The Market Data Set report for water supply points and sewerage supply points dated 31 March 2022 is used to identify if a business premise is reported as vacant. These are then mapped to Market Data Set reports WSSCO and SSSCO to identify if the supply is measure or unmeasured.

**11** Identification of unbilled business premises: All premises included in CMOS at the time of producing the monthly market settlement charges are included in the published settlement reports which are used to produce retailer invoices. Where a premise is not registered in the central market but is subject to a review of its billing status these premises are marked in our billing system as account class 6 and are included in the household APR tables figures either as unbilled or void.

**12** The number of vacant business premises with water supplies in our region on 31st March 2022 was 23.3k. This is an increase of circa 600 from 2020/21, when vacant premises were 22.7k. This position reflects the focus placed on vacancy in the non-household market since the lifting of all Covid 19 restrictions in June 2021 and the impact of retailers continuing to validate their customer occupancy records since the temporary vacancy measure was removed from the market in October 2020. We have also continued to validate vacancy data in the market and provide retailers with information that may help track down the occupier or the reason for any consumption recorded.

**13** Nationwide market data show a one per cent reduction in the number of non-household vacant premises over the last year.

**14** We plan to continue validating market data available throughout 2022/23 and support retailers where we can to identify occupied business premises.



### **New properties connected in year (4R.17 and 4R.18)**

**15** The table shows that a proportion of our new water properties had no meter installed at the end of the year. This is purely a timing issue. All new properties are metered and charged on a measured basis.

**16** We have seen an increase in new AMI meters fitted on connections of new properties which is encouraging.

**17** 47 per cent of all new supply meters installations were associated with Self-lay connections.

**18** Having enabled Self-lay Providers to source and fit Anglian Water meters in 2020/21, we have seen saw growth in this area and will be looking to make this process slicker and cost effective for our SLP customer base.

### **Residential and business properties billed at year end (4R.19 and 4R.23)**

**19** Meters have been split by the type of meter installed at the property and include meters at unmeasured properties which are not currently used for billing. The table also shows the number of smart meters installed and includes those installed as part of the AMP7 programme along with those that were there at the start of the AMP. The smart meters are split into AMR and AMI capable and active. There is no comparison with 2020/21, as previously meters were reported as either basic or smart with no further differentiation.

### **Unbilled properties (4R.20, 4R.24)**

**20** These are new lines for APR22.

**21** We include in line 20 (residential unbilled) properties that we classify as 'Non-chargeable' on the basis that either:

- although the property is furnished, there is no consumption and the occupier is deceased, or the property is long term vacant (> 3 months) due to hospitalisation, admittance to a care home, imprisonment with HMPs, or the property is uninhabitable due to fire/flood; or
- the property is demolished and/or pending disconnection and removal of meter.

**22** No charge is calculated for these premises and no bill issued. This is based on a "fairness" principle given that, whilst the property is connected, no service is provided. These properties were not previously included in any 4R reporting line.

**23** We do not recognise properties as uneconomic to bill. As stated above, our unbilling of properties is based on fairness rather than economics.

**24** We do not have any unbilled business properties (4R.24).

### **Resident population (4R.28)**

**25** Population is calculated based upon Anglian Water SAP customer information and Office of National Statistics (ONS) population and local authority household data. Population is derived using the in year assessment of households we serve as a percentage of the ONS property totals, as applied to the ONS Local Authority and Unitary Authority (LAUA) property and population tables. Additional account is taken of non-household communal population, which is derived using census data. The estimate of household population is based on the 2012 (2018 updated - 2020 issued) sub-national population and the December 2018 (June 2020 Issue) household projections from the ONS. Population projections have been amended to reflect the current ONS mid-year population estimates.

**26** Baseline population and property figures are derived for each LAUA, utilising ONS population and household data. Actual recorded properties in our 'billing' system for the base-year are then compared to the LAUA household official totals, either directly though

GIS or via parish attribution. This allows the percentage of households served by Anglian Water to be determined for the AWS statutory water and sewerage areas. These property totals for the Anglian Water statutory water and wastewater geographies, once derived, are confirmed with the 'Income and Tariff' and 'Leakage' teams and are then used to provide the baseline for the forecast models. Base-line population totals are then be derived using the known household percentages derived from the comparison of Anglian Water and ONS household totals and applying these to the ONS sub-national population figures (per LAUA).

**27** We apportion the data for the districts we serve to derive an estimate of both the water and the waste water populations in the Anglian Water region.

**28** The estimate of non-household population is based on the latest census data published by the ONS. This 'communal' population covers prisons, care homes and military bases among many categories. These projections have been revised in line with the paper 'Updating the Department for Communities and Local Government's Household Projections', specifically annex 2 'Improving Institutional Population Estimates and Projections'. In addition we have added an estimate of people resident in mixed properties. The derivation of non-household population is an established process, however, it is still based upon 2011 census data and will be reviewed and updated accordingly as new data becomes available.

**29** Our water customers population has increased by 71,764 from 4,837,775 to 4,909,539 in line with additional connected properties and year-on-year changes in occupancy rates for the LAUAs in the Anglian Water region.

**30** Water recycling population has increased by 80,871. This is in line with additional connected properties and year-on-year changes in occupancy rates for the LAUAs in the Anglian Water region.

**31** The total population for 2021/22 can be split and shown as follows, based upon 'Billing' information and occupancy rates derived by the leakage team to determine measured/unmeasured populations.

**32** The estimation of non-resident (holiday) population for the water region has been based upon the figure derived more specifically for water recycling catchment areas, which are far more sensitive to major in year localized changes. Consequently a figure has been derived based upon the relative population sizes for water and wastewater applied to this waste water figure. Based upon a water water figure of 199,838, we estimate an aligned figure of 153,369 for the water region.

Description	Unit	2021/22
Population (water only)	000	509.816
Population (sewerage only)	000	1997.309
Population (water and sewerage)	000	4399.724
Total population (water)	000	4909.539
Total population (sewerage)	000	6397.033
Total population (water or sewerage)	000	6906.849

**33** For our water customers population can be shown:

Description	Unit	2021/22
Population households billed unmeasured water	000	817.028
Population - households billed measured water	000	4021.130
Population non-households billed unmeasured water	000	0.000
Population - non-households billed measured water	000	71.381
Population - Total	000	4909.539

**34** For our water recycling customers population can be shown:

Description	Unit	2021/22
Population households billed unmeasured sewerage	000	1065.689
Population - households billed measured sewerage	000	5244.953
Population - non-households billed unmeasured sewerage	000	0.000
Population - non-households billed measured sewerage	000	86.391
Population - Total Resident	000	6397.033

#### **Non resident population (4R.29)**

**35** In 2021/22, Covid-19 restrictions still had some impact on the leisure and hospitality sector within the region, and so whilst we have increased the number of non-resident population compared to 2020/21, it is still lower than the pre-pandemic levels. We expect to see more normal levels of non-resident load in 2022/23.

**36** Our methodology for how we calculate non resident population is set out in the commentary to 4R.28.

#### **Measured household population (4R.31)**

**37** The total measured population has been derived using internal assessments of occupancy rates for both measured and unmeasured cohorts of customer (based upon customer surveys (SodCon) and smart meter data), with an understanding that the measured customer cohort will tend to have a lower occupancy rate on average than the unmeasured cohort. This split has then been apportioned to the overall regional population figure derived as above. The total population of measured water customers for 2021/22 is 4,021,130.

#### **Unmeasured household population (4R.32)**

**38** The total unmeasured population has been derived using internal assessments of occupancy rates for both measured and unmeasured cohorts of customer (based upon customer surveys (SodCon) and smart meter data), with an understanding that the unmeasured customer cohort will tend to have a higher occupancy rate on average than the measured cohort. This split has then been apportioned to the overall regional population figure derived as above. The total population of unmeasured water customers for 2021/22 is 817,028.

**Table 4S, 4T and 4U - Green recovery expenditure and RCV**

- 1** Table 4S, 4T and 4U
- 2** We do not report any figures for these tables.

**Table 5A - Water resources asset and volumes data for the 12 months ended 31st March 2022**

	Line description	Units	Input
	<b>Water resources</b>		
1	Water from impounding reservoirs	MI/d	29.46
2	Water from pumped storage reservoirs	MI/d	572.64
3	Water from river abstractions	MI/d	609.73
4	Water from groundwater works,excluding managed aquifer recharge (MAR) water supply schemes	MI/d	657.68
5	Water from artificial recharge (AR) water supply schemes	MI/d	0.00
6	Water from aquifer storage and recovery (ASR) water supply schemes	MI/d	0.00
7	Water from saline abstractions	MI/d	0.00
8	Water from water reuse schemes	MI/d	0.00
9	Number of impounding reservoirs	nr	2
10	Number of pumped storage reservoirs	nr	8
11	Number of river abstractions	nr	17
12	Number of groundwater works excluding managed aquifer recharge (MAR) water supply schemes	nr	200
13	Number of artificial recharge (AR) water supply schemes	nr	0
14	Number of aquifer storage and recovery (ASR) water supply schemes	nr	0
15	Number of saline abstraction schemes	nr	0
16	Number of reuse schemes	nr	0
17	Total number of sources	nr	227
18	Total number of water reservoirs	nr	10
19	Total volumetric capacity of water reservoirs	MI	227253
20	Total number of intake and source pumping stations	nr	220
21	Total installed power capacity of intake and source pumping stations	kW	42231
22	Total length of raw water abstraction mains and other conveyors	km	131.07
23	Average pumping head – raw water abstraction	m.hd	42.34
24	Energy consumption - raw water abstraction	MWh	87449.894
25	Total number of raw water abstraction imports	nr	0
26	Water imported from 3rd parties' raw water abstraction systems	MI/d	0.00
27	Total number of raw water abstraction exports	nr	0
28	Water exported to 3rd parties' from raw water abstraction systems	MI/d	0.00
29	Water resources capacity (measured using water resources yield)	MI/d	1741.90

### **Water from impounding reservoirs (5A.1)**

**1** The reported volume of water from impounding reservoirs is 29.46 MI/d. The sum of the water abstracted cannot be directly compared to DI as it includes imports/exports, non potable and excludes the MLE adjustment to Distribution Input.

### **Water from pumped storage reservoirs (5A.2)**

**2** The reported volume of water from pumped storage reservoirs is 572.64 MI/d. The sum of the water abstracted cannot be directly compared to DI as it includes imports/exports, non potable and excludes the MLE adjustment to Distribution Input. For some of our larger river abstraction works (such as Wing & Grafham) we have only included in this line the volume of water delivered from the pumped storage into the works.

### **Water from river abstractions (5A.3)**

**3** The reported volume of water from river abstractions is 609.73 MI/d. The sum of the water abstracted cannot be directly compared to DI as it includes imports/exports, non potable and excludes the MLE adjustment to Distribution Input. The total volume of water from lines 5A.1-5A.8 is more than the total volume of water abstracted as we have included water that is firstly abstracted from the rivers and then again abstracted from the pumped storage.

### **Water from groundwater works, excluding managed aquifer recharge (MAR) water supply schemes (5A.4)**

**4** The reported volume of water from groundwater is 657.68 MI/d. The sum of the water abstracted cannot be directly compared to DI as it includes imports/exports, non potable and excludes the MLE adjustment to Distribution Input.

### **Water from artificial recharge (AR) water supply schemes (5A.5)**

**5** No such schemes are operated by the company.

### **Water from aquifer storage and recovery (ASR) water supply schemes (5A.6)**

**6** No such schemes are operated by the company.

### **Water from saline abstractions (5A.7)**

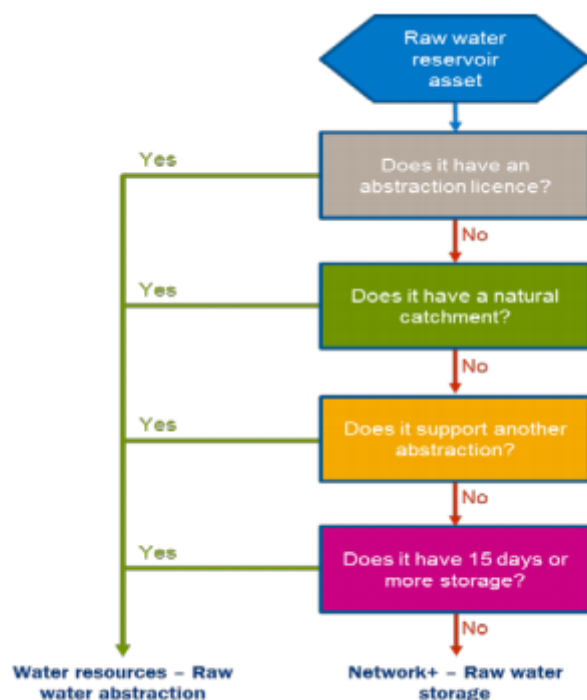
**7** No such schemes are operated by the company.

### **Water from water reuse schemes (5A.8)**

**8** There are no sites that abstract water using this method. As a result, we have reported the volume of water for this line is zero.

### **Number of impounding reservoirs and pumped storage reservoirs (5A.9 and 5A.10)**

**9** The reported numbers reflect the number of reservoirs classified as raw water abstraction based on the following RAG 4.10 flow chart:



**10** Figure 1. RAG 4.10 flow chart to classify raw water reservoir assets as either water resources or network+

### Impounding Reservoirs

- Ravensthorpe reservoir (Ruthamford North RZ): 100 per cent inflow
- Hollowell reservoir (Ruthamford North RZ): 100 per cent inflow

### Pumped Storage Reservoirs

- Alton Water (East Suffolk RZ): 69 per cent pumped
- Ardleigh reservoir (South Essex RZ): 82 per cent pumped
- Covenham reservoir (East Lincolnshire RZ): 100 per cent pumped
- Grafham Water (Ruthamford South RZ): 99 per cent pumped
- Pitsford reservoir (Ruthamford North RZ): 56 per cent pumped
- Rutland Water (Ruthamford North RZ): 88 per cent pumped
- Cadney Carrs (East Lincolnshire RZ): 100 per cent pumped
- Costessey Pits (Norwich & the Broads RZ): 100 per cent pumped

**11** The RAG 4.10 guidance means we also class Cadney Carrs and Costessey Pits as raw water reservoirs. Cadney has storage >15 days, and Costessey Pits has an abstraction licence.

**12** The definition for Line 9 specifies that the reservoirs should be classified as either pumped or impounding, on the basis of the majority of the type of flow that they receive.

### Number of river abstractions (5A.11)

**13** We are reporting seventeen river abstraction, this remains unchanged for 2021/22. This consists of direct river intakes and also ten indirect supporting river abstractions. This reflects the full complement of our surface water intake assets.

1. Cadney (River Ancholme)
2. Clapham (Bedford Ouse)
3. Hall (River Trent)
4. Heigham (River Wensum)

5. Costessey (River Wensum)
6. Marham (River Nar)
7. Stoke Ferry (River Wissey)
8. Tinwell (River Welland for Rutland Water)
9. Wansford (River Nene for Rutland Water)
10. Offord (River Great Ouse for Grafham Water)
11. Duston Mill (River Nene for Pitsford reservoir)
12. Sroughton (River Gipping for Alton Water)
13. Bucklesham (Mill River for Alton Water)
14. East Mills (River Colne for Ardeley)
15. Covenham intake (Louth Canal for Covenham reservoir)
16. Cloves Bridge (River Great Eau for support to Covenham)
17. Cut-off-Channel (for support to Stoke Ferry)

**14** Bath Springs and Cringle Brook intake at Saltersford, and Foxcote reservoir, do not enter supply so are not included in the reported list.

#### **Number of groundwater works, excluding managed aquifer recharge (MAR) water supply schemes (5A.12)**

**15** We report 200 groundwater sources for 2021/22 which is different to the 202 that was reported for 2020/21. A source is defined as an independent raw water supply that directly supplies a treatment works. Standby or mothballed sources from which no water has been obtained in the year should not be included. The total number of sources included the addition in 2021/22 of the Dolphin Farm Source near Thetford.

**16** The following sources were also removed from the operational source list based on the above source definition:

- Runhall (not operated into supply in 2021/22, removed from operation as part of restoring sustainable abstraction)
- Ludham (not operated into supply in 2021/22, removed from operation as part of restoring sustainable abstraction)
- Drove Lane (not operated into supply in 2021/22 due to raw water quality)

#### **Number of artificial recharge (AR) water supply schemes (5A.13)**

**17** No such schemes are operated by the company.

#### **Number of aquifer storage and recovery schemes (ASR) water supply schemes (5A.14)**

**18** No such schemes are operated by the company.

#### **Number of saline abstraction schemes (5A.15)**

**19** No such schemes are operated by the company.

#### **Number of reuse schemes (5A.16)**

**20** No such schemes are operated by the company.

#### **Total number sources (5A.17)**

**21** The reported number is summed from lines 9-16.

#### **Total number of water reservoirs (5A.18)**

**22** The reported number changed in 2020/21 due to the addition of 2 new lines in table 6A. For 2021/22 the reported number has not changed. Line 18 includes the impounding and pumped storage reservoirs reported in Lines 9 and 10.



### **Total capacity of water reservoirs (5A.19)**

**23** The capacity of all water reservoirs has been revised in line with guidance to reflect the design/construction capacity of the reservoir where possible. The value changed for the 2020/21 year following the removal of the bankside storage reservoirs from this line. The value for 2021/22 is the same as 2020/21 which was 227,253MI.

### **Total number of intake and source pumping stations (5A.20)**

**24** Following guidance in the Ofwat RAG Guidelines & Appendices, we have identified raw water transport pumps within surface water systems and groundwater sources. Surface water transport has been split between abstraction to reservoir and abstraction from reservoir to treatment. Groundwater sources have been split based on the proportion of pumping head that goes to treatment (considered to be raw water abstraction) and the proportion that goes to supply (considered to be water distribution).

**25** In line with the disaggregation of raw water transport pumps, for 2021/22 we are reporting:

- 20 intake and source pumping stations including one gravity intake system at Ravensthorpe Reservoir
- 200 groundwater sources

**26** This is a decrease of 2 sources compared to 2020/21.

### **Total installed power capacity of intake and source pumping stations (5A.21)**

The number of pumps, rated power for each pump, location and asset status have been used where this information was held in corporate databases. Where the rated power was not available in the corporate databases historical records held by the Water Resources team were used. The qualifying assets were determined by the Water Resources team. For those borehole pumps that both abstract and boost into the network only the proportion of the rated power relating to abstraction has been included.

Total capacity has increased marginally on 2020/21 due to the increase in number of sites, following a more detailed assessment of the groundwater team database which resulted in the inclusion of four more river support borehole sites. The remaining changes (the net result being plus one site) are due to operational status changes of sites.

### **Total length of raw water abstraction mains and other conveyors (5A.22)**

**27** This data has been reviewed and refined for PR19. This line has been calculated using the latest raw water mains data out of our corporate mapping system (G/water). The lengths have also been calculated using the guidance provided in RAG 4.10. There is a small decrease of 1.83km for 2021/22 compared to 2020/21 this is due to constant improvements to on-site pipe classifications.

### **Average pumping head – raw water abstraction (5A.23)**

#### **Overview**

**28** Following company engagement with the industry wide audit of Average Pumping Head (APH) by the WRC on behalf of Ofwat, the process for Average Pumping Head calculation for 2021/22 has undergone review and update with a view to giving improved assurance around the completeness, quality and validity of submitted data.

#### **Measurement**

**29** The most significant process improvements have been made in the identification and application of measured data for this submission which has greatly increased the confidence in the validity of the overall price control figures.

**30** The water treatment price control has been a wholly estimated static value for all previous reporting of APH. Following review of measured data on treatment sites, this year's submission contains a calculated value for the first time. Measured data has now been used for the calculation for the majority of sites and significantly improved estimates have been agreed with site level experts where measured data is not available. In addition, the same process has been used to provide calculations for previously unmeasured areas of the business including Hartlepool, insets and pumping to support the environment.

**31** This has transformed the accuracy of and confidence in the submitted values for water treatment.

### **Estimates**

**32** A review of estimated figures has also been conducted with site level experts identified in operational teams. These improved and up to date estimates account for current operational demands and allow validation of historic values held in pumping documentation.

**33** Importantly, the data obtained during this review has improved the estimates for proportionality of pumping associated with raw water abstraction and raw water transport, giving clear methodology for the calculation and increased confidence and clarity for these price controls.

### **Validation**

**34** Increased data quality assurance has been supported by improvements to data validation rules with statistical analysis being applied to the flow and pressure set for each individual pump. Any data outliers identified during this process have been logged and replaced with a value equal to the annual average for the respective measure for the relevant pump.

**35** In addition, specific rules have been applied to very small negative flow values, which instead of being replaced with the annual average flow have been replaced with a zero, as these are likely to be driven by tiny errors in calibration, particularly in 4-20mA flow meters.

### **Improvement Areas For Further Review**

**36** Average Pumping Head reporting period does not currently align with the DI reporting period so DI figures from annual reporting cannot be used to assess the volume of pumped water and should be viewed in the context of the reported window.

### **Future Planning**

**37** The mid to long term vision for Average Pumping Head measurement is to create a data model to allow automation of the calculation on a monthly basis using the best available data. This will reduce the burden of annual reporting, driving efficiency in the process and will also allow the measure to be used as a key performance indicator across the business for the first time, supporting operational efficiency work. This will be centred around a 6 month development plan due for completion to support the APH calculation submission for 2022/23.

**38** The outcome of the current review can also be used for targeted investment in additional monitoring equipment to ensure the outcomes are maximised and increased data coverage is built into the 6 month improvement cycle.

**39** Raw Water Abstraction APH; 42.34

**40** % of APH derived from measured data; 7.69%

**41** % of sites with measured volumes and lift; 13.04%

**42** Estimated historical pumping data from site documentation has been reviewed and validated by local subject matter experts to ensure it is accurate and up to date. Where available, borehole level data has been combined with pump operation data to obtain the proportion of the pumping relating specifically to abstraction and raw water transport.

**43** Please note that this data was only available for a small proportion of sites, and this is an area that we are planning to review to try and find alternate data sources to make this apportionment. Where data was not available to provide a basis for estimation of proportions between abstraction and transport, all pumping from abstraction sources has been allocation to raw water abstraction.

### **Energy consumption - raw water abstraction (5A.24)**

**44** The energy consumption was 87,450 MWh. The equivalent number for 2020/21 was 83,609 MWh so there has been an increase of 3,841 MWh or 4.59 per cent.

**45** The main component of this change has been the electricity usage for raw water abstraction which increased by 3,461 MWh or 4.46 per cent. Most of this increase has come from increased raw water reservoir refill compared to 2020/21, particularly at the beginning of the year when some additional pumping was carried out on river abstraction to impounding reservoir sites to help relieve flooding downstream and at the end of the year when advantage was taken of higher river levels. There has also been an increase in consumption for transport purposes of 408 MWh, or 10.10 per cent, due to an increase in mileage claimed versus the previous year, which was impacted by Covid-19 lockdowns.

**46** A number of assumptions have been made in calculating the raw water abstraction energy consumption data.

- For the whole of the water function, we have applied a financial split from regulatory accounts between abstraction, raw water transport, water treatment and treated water distribution for electricity consumption. This financial split is based upon assessments of proportional use by different business units made by the finance team and operational managers. In previous years the cost of solar electricity generated on site had not been separated out from grid electricity as part of this calculation as it was insignificant. However, this changed in 2021/22, with almost three times as much electricity being generated and consumed; the solar costs were, therefore deducted.
- Grid electricity and fuel (oil and natural gas) used in offices has been included and split equally between the water and water recycling functions.
- Fuel oil is not recorded on our corporate systems against Ofwat's business units and therefore the same split used for electricity has been assumed for each fuel type.
- We have assumed a 35 per cent thermal efficiency for natural gas consumption in converting to energy output (boilers and CHP).
- Transport (claimed mileage and fleet fuel purchased on fuel cards) is not recorded in our corporate systems against Ofwat's business units and therefore we have split the total 50/50 between water and water recycling and then assumed that they split in the same proportions as electricity between the business units.
- Transport for company cars is collected as mileage. We have converted mileage into kWh through using BEIS' greenhouse gas reporting condensed conversion factors for 2021.
- For electric vehicles we have made the assumption that the mileage claimed relates to charging at home, rather than using the charging points at the offices as most office-based employees were working from home during the Covid-19 pandemic. We believe this assumption to be safe and not capable of skewing the overall figures since (i) electric car consumption totals just 28,990 kWh across the whole of Anglian Water and (ii) wherever cars are charged, the driver may be charging for domestic and

commuting miles (which cannot be claimed) as well as for business. We are looking to improve our processes in future to better capture consumption by electric cars charged at home and AW infrastructure.

**Total number of raw water abstraction imports (5A.25)**

**47** There are currently no raw water abstraction imports, so this figure is zero.

**Water imported from 3rd parties' raw water abstraction systems (5A.26)**

**48** The volume of raw water imported from 3rd party systems is zero.

**Total number of raw water abstraction exports (5A.27)**

**49** There are currently no raw water abstraction exports, so this figure is zero.

**Water exported to 3rd parties' from raw water abstraction systems (5A.28)**

**50** The volume of raw water exported to 3rd party systems is zero.

**Water resources capacity (measured using water resources yield) (5A.29)**

**51** The reporting year value has been provided for the company water resources capacity, based on the hydrological yields for all sources contributing to the WRMP19 deployable output supply forecast.

**52** The total annual average water resources capacity is 1,741.9MI/d, which is made up of groundwater and direct surface water intakes (1,015.5MI/d) and surface water reservoirs, including their surface water intakes (726.4MI/d), and is unchanged from the previous year. This also could be compared to the WRMP company deployable output of 1,504MI/d. There are important differences between the two values to be aware of, such as water resources capacity does not account for water treatment works constraints or raw water network constraints. Additionally, deployable output can be constrained by the relative proximity of the population in respect to sources and assets. As a result, deployable output will always be less than water resources capacity.

**Table 5B - Water resources operating cost analysis for the 12 months ended 31st March 2022**

Line description	Units	Impounding Reservoir	Pumped Storage	River Abstractions	Groundwater, excluding MAR water supply schemes	Artificial Recharge (AR) water supply schemes	Aquifer Storage and Recovery (ASR) water supply schemes	Other	Total
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Opex analysis									
1	Power	£m	0.008	0.091	4.434	4.075	-	-	8.608
2	Income treated as negative expenditure	£m	-	-	(0.060)	(0.028)	-	-	(0.087)
3	Abstraction charges / discharge consents	£m	0.429	3.628	1.783	4.268	-	-	10.109
4	Bulk supply	£m	-	-	-	-	-	-	-

Other operating expenditure									
5	Renewals expensed in year (Infrastructure)	£m	-	-	-	-	-	-	-
6	Renewals expensed in year (Non-Infrastructure)	£m	-	-	-	-	-	-	-
7	Other operating expenditure excluding renewals	£m	0.442	1.348	5.149	9.095	-	-	16.035
8	Local authority and Cumulo rates	£m	0.045	0.176	0.014	2.653	-	-	2.887
9	Total operating expenditure (excluding 3rd party)	£m	0.924	5.243	11.319	20.064	-	-	37.551

**Table 6A - Raw water transport, raw water storage and water treatment data for the 12 months ended 31st March 2022**

Line description	Units	Input
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Raw water transport and storage		
1	Total number of balancing reservoirs	nr 4
2	Total volumetric capacity of balancing reservoirs	MI 414
3	Total number of raw water transport stations	nr 10
4	Total installed power capacity of raw water transport pumping stations	kW 12870
5	Total length of raw water transport mains and other conveyors	km 524
6	Average pumping head ~ raw water transport	m.hd 37
7	Energy consumption ~ raw water transport	MWh 42209
8	Total number of raw water transport imports	nr 0
9	Water imported from 3rd parties' raw water transport systems	MI/d 0
10	Total number of raw water transport exports	nr 0
11	Water exported to 3rd parties' raw water transport systems	MI/d 0
12	Total length of raw and pre-treated (non-potable) water transport mains for supplying customers	km 62

Water treatment - treatment type analysis		Surface water		Ground water	
		Water treated	Number of works	Water treated	Number of works
Units		MI/d	nr	MI/d	nr
13	All SD simple disinfection works	0.00	0.00	3.56	3.00
14	W1 works	0.00	0.00	6.00	2.00
15	W2 works	0.00	0.00	158.34	41.00
16	W3 works	0.00	0.00	132.46	31.00
17	W4 works	4.60	1.00	204.60	30.00
18	W5 works	566.24	12.00	75.43	10.00
19	W6 works	6.08	1.00	0.00	0.00

	Water treatment - works size	% of total	Number of works
	Units	DI	nr
20	WTWs in size band 1	0.50	10
21	WTWs in size band 2	1.97	16
22	WTWs in size band 3	11.20	47
23	WTWs in size band 4	17.93	32
24	WTWs in size band 5	11.86	12
25	WTWs in size band 6	22.80	11
26	WTWs in size band 7	5.62	1
27	WTWs in size band 8	28.12	2

	Water treatment - other information	Units	Input
28	Total water treated at more than one type of works	MI/d	0.00
29	Number of treatment works requiring remedial action because of raw water deterioration	nr	2.00
30	Zonal population receiving water treated with orthophosphate	000's	4839.81
31	Average pumping head – water treatment	m.hd	4.47
32	Energy consumption ~ water treatment	MWh	84234.33
33	Total number of water treatment imports	nr	0.00
34	Water imported from 3rd parties to water treatment works	MI/d	0.00
35	Total number of water treatment exports	nr	0.00
36	Water exported to 3rd parties from water treatment works	MI/d	0.00

### Total number of balancing reservoirs (6A.1)

**1** The reported numbers reflect the number of reservoirs classified as Network + Raw water storage as set out in RAG 4.10 guidance (Figure 1). We only include reservoirs which have one or more days storage.

- Heigham Large Deposit Reservoir – for Heigham WTW
- Bedford – for Clapham WTW
- South Clifton – for Hall WTW
- Saltersford Raw Water Reservoir – for Saltersford WTW

**2** The purpose of these reservoirs is to provide resilience rather than storage and as such they do not have an abstraction licence or a natural catchment. Saltersford was a new addition to the list for 2020/21 following review of the guidance. The total number has not changed for 2021/22.

### Total volumetric capacity of balancing reservoirs (6A.2)

**3** The capacity of balancing reservoirs reflects the design/construction capacity of the reservoir where possible and is clarified by our Reservoir Safety Manager. This value is 414MI.

### **Total number of raw water transport stations (6A.3)**

**4** In line with guidance as described above, for 2021/22 we are reporting:

- 10 transfer pumping stations including 1 gravity intake system at Ravensthorpe Reservoir.

**5** This increased by one from 2020/21 following a review of the guidance including Empingham raw water transfer to Saltersford raw water reservoir. This is unchanged for 2021/22.

### **Total installed power capacity of raw water transport pumping stations (6A.4)**

The number of pumps, rated power for each pump, location and asset status have been used where this information was held in corporate databases. The assets qualifying for inclusion were determined by the Water Resources team.

### **Total length of raw water transport mains and other conveyors (6A.5)**

**6** This data was reviewed and refined for PR19. The lengths have been calculated using the guidance provided in RAG 4.10.

**7** Constant improvement to on-site pipe classification has led to a 3km length decrease from the figure quoted in the 2020/21 length.

### **Average pumping head ~ raw water transport (6A.6)**

**8** For an overview on how we have reported average pumping head please see the commentary for 5A.23.

**9** Raw Water Transport APH; 37.47

**10** % of APH derived from measured data; 90.21%

**11** % of sites with measured volumes and lift; 29.17%

**12** Estimated historical pumping data from site documentation has been reviewed and validated by local subject matter experts to ensure it is accurate and up to date. Where available, borehole level data has been combined with pump operation data to obtain the proportion of the pumping relating specifically to abstraction and raw water transport.

### **Energy Consumption ~ raw water transport (6A.7) and water treatment (6A.32)**

**13** The total energy consumption across both lines was 126,444 MWh. The equivalent number for 2020/21 was 130,363 MWh so there has been a reduction of -3,920 MWh or -3.0 per cent. For raw water transport there has been a reduction of -2,759 MWh (-6.1 per cent) and for water treatment the reduction is -1,160 MWh (-1.4 per cent).

**14** The main component of this change has been the reduced electricity usage, driven by lower domestic water demand than in 2020/21 which had been driven higher due to the Covid-19 pandemic lockdowns. Electricity accounted for -3,787 MWh (-3.1 per cent) of the reduction. Fuel oil consumption reduced by -265 MWh (-8.6 per cent) compared to 2020/21, driven mainly by a reduction in purchases of gas oil. This is explained by the reduction in the use of gas oil for winter peak-logging activity, as fuel prices made it uneconomic to use our generators to avoid high winter electricity prices. This is also illustrated by a reduction in electricity exported from those generators.

**15** A number of assumptions have been made in calculating the raw water transport and water treatment energy consumption data. We have applied the same assumptions as we did in calculating raw water abstraction (see commentary for 5A.24). In addition, we have included energy from solar sources generated and used on site.



**Total number of raw water transport imports (6A.8)**

**16** There have been no raw water transport imports.

**Water imported from 3rd parties' raw water transport systems (6A.9)**

**17** There is no water imported from 3rd parties' raw water transport systems.

**Total number of raw water transport exports (6A.10)**

**18** There has been no water transported.

**Water exported to 3rd parties' raw water transport systems (6A.11)**

**19** There has been no water transported to 3rd parties.

**Total length of raw and pre-treated (non-potable) water transport mains for supplying customers (6A.12)**

**20** The pipes for this line mainly consist of the system that supplies the Humber Bank industrial area with non-potable water. The length quoted of 62kms has remained stable when compared to 2020/21.

**All simple disinfection works - W6 works (6A.13 - 6A.19)**

**21** The number of sites in each specified WTW category (based upon MI/d DI) is defined, based upon our Source Works Output Reporting System (SWORPS) data.

**22** Volumes per WTW have been calculated using 2021/22 year values. WTWs have then been grouped by category, as described, giving total numbers of WTWs per category and the volume of water in MI/d by either ground or surface water.

**23** Significant changes to categories are explained below:

- Groundwater SD and Groundwater W1 – the change in profile across these two categories has been generated by a reassignment of West Bradenham WTW. This site has Rapid Gravity Filtration in addition to simple disinfection and has been classified from SD to W1.
- Groundwater W4 and W5 - Retford WTW has been reclassified from W4 to W5 as the site is now operating with both GAC absorption and Nitrate Reduction. Ringstead WTW has increased categories from W4 to W5 as UV disinfection has been added.
- Groundwater W2 and W3 - Rushall WTW has moved categories from W2 to W3 as the site is operating with Biological Filtration for Iron Removal.
- Groundwater W3 and W4 - Rushbrooke WTW has moved categories from W4 to W3 as it is no longer operating with UV Disinfection.
- Surfacewater SW5 - Elsham, Heigham and Stoke Ferry WTWs have been reclassified as surfacewater. DI from these works was split pro-rata between groundwater and surface water. Our practice is to allocate according to the type of source which makes up the bigger share.

**WTWs by category (6A.20 - 6A.27)**

**24** Over the summer we have spoken to production operatives in each region to discuss the maximum production capacity for each works irrespective of the licences that are in place. The production capacity was calculated over a three-day period and then re-proportioned over twenty-four hours.

**25** Volumes per WTW have been calculated using 2021/22 year values. WTWs have then been grouped by size band, as described, giving total numbers of WTWs per band and the percentage of DI associated with each band calculated.

**26** The following WTWs have not been in supply this year but are included within the banding count -

- Mundesley WTW (Band 1)
- Winterton Holmes WTW (Band 4)

#### **Total water treated at more than one type of works (6A.28)**

**27** We do not operate any schemes where water is treated at more than one type of works.

#### **Number of treatment works requiring remedial action because of raw water deterioration (6A.29)**

**28** Two sites have been recorded as requiring remediation. One of these is Irby reservoir final water point nitrate scheme, which involved the installation of an ion exchange plant at Littlecoates borehole site and the other is Little Saxham nitrate scheme, which involved a formalised blending and control system.

#### **Zonal population receiving water treated with orthophosphate (6A.30)**

**29** The zonal population receiving water treated with orthophosphate is calculated from the information reported to the DWI in the Details Tables provided annually in accordance with the Information Direction. All Public Water Supply Zones (PWSZ) receiving orthophosphate dosed water are identified in the Details Tables which also document the population of each PWSZ.

**30** There has been a steady increase in the population receiving orthophosphate dosed water, which is partly due to the increase in the number of WTWs with orthophosphate dosing plant in operation, as well as the general increase in total population we serve. This currently stands at 98.58 per cent for 2021/22.

#### **Average pumping head – water treatment (6A.31)**

**31** For an overview on how we have reported average pumping head please see the commentary for 5A.23.

**32** Water Treatment APH; 4.47

**33** % of APH derived from measured data; 61.76%

**34** % of sites with measured volumes and lift; 31.16%

**35** Percentage of estimated data for this price control has been significantly reduced following review of measured data for treatment. This is supported by collection of measured data for Hartlepool inset and pumping for environmental support. Improved estimates obtained during review with local subject matter experts.

#### **Energy consumption ~ water treatment (6A.32)**

**36** Please refer to the commentary for raw water transport (6A.7).

#### **Total number of water treatment imports (6A.33)**

**37** There are no water treatment imports.

#### **Water imported from 3rd parties' to water treatment works (6A.34)**

**38** There is no raw water imported from 3rd parties' to water treatment works.

**Total number of water treatment exports (6A.35)**

**39** There are no water treatment exports.

**Water exported to 3rd parties' water treatment works (6A.36)**

**40** There is no raw water exported to 3rd parties' water treatment works.

**Table 6B - Treated water distribution - assets and operations for the 12 months ended 31st March 2022**

	Line description	Units	Input
	<b>Assets and operations</b>		
1	Total installed power capacity of potable water pumping stations	kW	79000
2	Total volumetric capacity of service reservoirs	MI	1820.4
3	Total volumetric capacity of water towers	MI	120.4
4	Distribution input	MI/d	1157.30
5	Water delivered (non-potable)	MI/d	50.14
6	Water delivered (potable)	MI/d	1016.35
7	Water delivered (billed measured residential properties)	MI/d	538.41
8	Water delivered (billed measured businesses)	MI/d	296.34
9	Total annual leakage	MI/d	173.41
10	Distribution losses	MI/d	133.24
11	Water taken unbilled	MI/d	24.64
12	Proportion of distribution input derived from impounding reservoirs	Propn 0 to 1	0.022
13	Proportion of distribution input derived from pumped storage reservoirs	Propn 0 to 1	0.400
14	Proportion of distribution input derived from river abstractions	Propn 0 to 1	0.070
15	Proportion of distribution input derived from groundwater works, excluding managed aquifer recharge (MAR) water supply schemes	Propn 0 to 1	0.508
16	Proportion of distribution input derived from artificial recharge (AR) water supply schemes	Propn 0 to 1	0
17	Proportion of distribution input derived from aquifer storage and recovery (ASR) water supply schemes	Propn 0 to 1	0
18	Proportion of distribution input derived from saline abstractions	Propn 0 to 1	0
19	Proportion of distribution input derived from water reuse schemes	Propn 0 to 1	0
20	Total number of potable water pumping stations that pump into and within the treated water distribution system	nr	463
21	Number of potable water pumping stations delivering treated groundwater into the treated water distribution system	nr	137
22	Number of potable water pumping stations delivering surface water into the treated water distribution system	nr	11
23	Number of potable water pumping stations that re-pump water already within the treated water distribution system	nr	312
24	Number of potable water pumping stations that pump water imported from a 3rd party supply into the treated water distribution system	nr	3
25	Total number of service reservoirs	nr	255
26	Number of water towers	nr	128
27	Energy consumption – treated water distribution (MWh)	MWh	151046
28	Average pumping head – treated water distribution	m.hd	68

	Line description	Units	Input
29	Total number of treated water distribution imports	nr	19
30	Water imported from 3rd parties to treated water distribution systems	MI/d	4.62
31	Total number of treated water distribution exports	nr	62
32	Water exported to 3rd parties from treated water distribution systems	MI/d	65.67

### Power capacity and number of potable water pumping stations (6B.1 and 6B.20-24)

**1** The number of pumps, rated power for each pump, location and asset status have been used where this information was held in corporate databases. This includes those borehole pumps that both abstract and boost into the network and apportions a percentage split of the borehole rated power to distribution.

**2** The number of sites was calculated based on this more granular pump-specific asset data and by applying a "co-located" logic to align with the Ofwat definition of a "site". The installation of six small network boosters has increased the number of sites (line 23). The rated capacity has increased marginally on the figure for 2020/21 due to these new sites plus pump changes or improved data on the rated powers of pumps.

### Number and capacity of Service Reservoirs (6B.2 and 6B.25)

**3** For 2021/22 there are 255 Service Reservoirs. The count of reservoirs has increased by one as a result of two being added and one removed.

#### 2021/22 Structures Added

- WICKLEWOOD (OLD) WR
- HORSTEAD WR

#### 2022 Structures Removed

- BEELSBY WR – Changed to Operational abandoned (OAB) June 2021

#### 2022 Service Reservoir Capacity Adjustments

**4** For 2021/22 we are reporting 1,820.393MI. This is an increase compared to 2020/21 (1,809.865MI) due to ongoing improvements to our data where there have been a few adjustments to the capacities.

Site	New Capacity (MI)	Comments
WICKLEWOOD (OLD) WR	1.09	Brought back into service.
HORSTEAD WR	4	This is a newly built reservoir to cope with both the growth in the area and the loss of Ludham WTW.
BEELSBY WR	0	Has been operationally abandoned. Was 1.362 MI
HORKESLEY NEW WEST WR	3.9	Increase in capacity of 3.4 MI from 0.5 MI.

**5** Total volumetric capacity of water towers (6B.3 and 6B.26)

**6** For 2021/22 we are reporting 128 water towers and a volumetric capacity of 120.375MI. This means there are no reported changes from 2020/21.

### Distribution Input (6B.4)

**7** Distribution Input has decreased this year by 2.34 per cent as a result of lower domestic demand as the impact of Covid-19 unwinds and lower leakage.

### Water delivered non-potable (6B.5)

**8** The amount of water delivered to our non-potable customers is similar to 2020/21. This water is used to supply large industrial customers on the Humber bank and in Hartlepool.

### Water delivered potable (6B.6-8)

**9** Water delivered to measured residential properties decreased this year as the impact of Covid-19 unwinds. This is partially offset as customers switch from unmeasured to measured billing and by new domestic connections to the network.

**10** Water delivered to measured business customers has increased this year as the impacts of Covid-19 subside and businesses return to normal. We continue to find that data held in the CMOS (Central Market Operating System) is not reliable enough to calculate consumption for the water balance due to lack of readings and delays in settlements being updated with the latest meter reading data. As in previous years we have used data from loggers and additional meter reads to improve our understanding of non household consumption.

### Leakage (6B.9)

**11** Leakage for 2021/22 is assessed at 173.41 MI/d. This represents an 8.97 MI/d decrease from 2021/22 and is the lowest leakage level we have ever achieved.

**12** We have assessed our compliance against the 76 sub components and 16 high level components defined in the PR19 Leakage reporting methodology document. At the high level we are reporting all 16 as green. At the sub-components level there are two areas where we do not meet requirements set out in the document, however we consider that they do not have a material impact on our reported leakage figure. These are as follows:

- *3c - Properties that are defined as void excluded from night use allowances unless evidence for use or losses from illegal occupation is available*
  - The reporting guidance states that we cannot apply Household night use (HHNU) to a void property unless there is evidence of any use or void occupation. We follow the fast logging of small DMAs methodology to calculate HHNU and have used the same process consistently throughout AMP7 and baseline years. This process calculates an average HHNU for all the properties in the DMAs that are fast logged. These DMAs will have void properties in them and the methodology makes no allowance for the fact that they exist but just calculates an average NU per property for each zone. The impact of this is that the inclusion of voids in the NU model suppresses the average HHNU figure that is derived.
  - For the process to correct we either need to exclude voids from both the fast logged areas and the property count that the NU allowance is applied to, or we need to include voids in both which is what we have done. i.e. the Night use model and the application of it to calculate zonal night use need to be applied to a consistent set of properties.
  - The void property count is not a static number but varies in each zone from day to day. We don't have the ability to track this number daily so assume that voids are spread evenly across the company including the fast logged areas.
  - We provided our external auditor an impact assessment using void % from the year end reported property counts and applying it to the SAM property counts as an estimate of voids. Whilst this increases the derived HHNU figure, this has zero

impact on leakage deduction as it applying more water to less properties resulting in a 0 net difference. The auditor signed this approach off but recommended we adjust the method next year to become compliant.

- *15b - Estimate of water delivered unbilled (legally and illegally) is evidence based and not greater than 1.8 per cent of distribution input.*
- We are currently reporting an overall figure of 2.05 per cent of DI for unbilled water against the target of 1.8 per cent, based on evidence from logging or studies as appropriate for the various components. This is split 0.50 per cent illegally unbilled against target of 0.6 per cent and 1.55 per cent legally unbilled against a target of 1.2 per cent. As a WASC we have more water unbilled due to Water Recycling Centre use and sewer flushing which pushes us over the threshold (would be 1.29 per cent unbilled water without these)

**13** Our AMP7 leakage strategy continues some themes that we started in AMP6 such as network optimisation and intensive leakage investigation. It is supplemented with new SMART strategies such as permanent noise logging, smart metering and widespread pressure transient monitoring. Outputs from our strategies as follows:

- Detection resources – Our base level of detection technicians for AMP7 is 156.8 full time equivalent (FTE) technician roles. In 2021/22 we recruited an additional 57 fixed term leakage detection field roles to focus detection activities. We had a peak of 213.8 FTE but this had reduced to 169.8 FTE by the end of the report year as the fixed term contracts neared their end. The average number of roles for Year 2 was 178.8 FTE (an increase of 22 FTE against base)
- Customer supply pipe leakage/internal property leakage – We continue our process of working with customers to ensure that they repair leaks on their supply pipe or internally to the property in a timely manner. The 2021/22 year was our busiest year to date with 10,699 cases managed against 8,832 in 2020/21.
- Leakage Sensors - We now have 8,369 remote hydrophones installed across 285 DMAs in full monitoring mode (up from 5,143 and 227 DMAs in 2020/21). To date the sensor programme has delivered 15,040 (up from 8,807 in 2020/21) leaks proactively and technician productivity has increased on average from 0.5 leaks per day to 1.0 leaks per day across all work streams when compared to 2020/21.
- SMART metering - our smart metering programme has installed 310,321 meters by the end of 2021/22, up from 164,400 at the end of 2020/21. The installation programme has been slowed by issues with microprocessor availability delaying deliverers of smart meters. In 2021/22 we identified 62,062 properties with continuous flow greater than 1 l/hr. We saw 20,779 of these leaks fixed with no contact from us to the customers. Of the 40,133 leaks where we informed and worked with our customers to ensure that the issue was resolved by them we saw 25,205. This has resulted in 7.21 Ml/d of leakage or plumbing loss being resolved, in addition, during 2021/22, we also recorded 2,688 (intervention driven) fixes on leaks identified on 2020/21 totalling 1.82 Ml/d.
- Network/pump optimisation schemes – There have been 207 optimisation schemes implemented this year delivering 5.18 Ml/d leakage reduction. This was split between:
  - 138 schemes to optimise existing pressure management assets implemented delivering 2.13 Ml/d leakage reduction.

- 65 schemes introducing first time pressure management implemented delivering 2.68 MI/d leakage reduction.
- 4 other schemes implemented delivering 0.37 MI/d leakage reduction
- Intensive Leakage Programme - This process has led to a leakage reduction of 3.40 MI/d in 2021/22. The teams have continued their approach to auditing historically high leakage zones but also focused on gaining a better understanding of inoperable zones working closer with teams around the business

The full water balance components are listed below:

		Pre	After
<b>Water Delivered - Volumes</b>	Units	MLE	MLE
Billed Measured Household	MI/d	532.74	538.41
Billed Measured Non-Household	MI/d	293.46	296.34
Billed Measured	MI/d	826.2	834.75
Billed Un-Measured Household	MI/d	153.47	155.78
Billed Un-Measured Non-Household	MI/d	1.1	1.186
Billed Un-Measured	MI/d	154.57	156.96

<b>Water Delivered - Components</b>			
Estimated Water Delivered per UnM Non-Household	l/pr/d	832.52	895.07
Per Capita Consumption ( UnMeas HH excl UGSPL)	l/h/d	172.56	174.91
Per Capita Consumption ( Meas HH excl UGSPL)	l/h/d	126.78	128.08
Underground Supply Pipe Leakage (UnMeas HH)	l/pr/d	40.23	41.48
Underground Supply Pipe Leakage (Ext Metered HH)	l/pr/d	9.04	9.21
Underground Supply Pipe Leakage (Other Metered HH)	l/pr/d	40.23	40.99
Underground Supply Pipe Leakage (Voids)	l/pr/d	39.11	40.25
Meter Under-registration (Meas HH)	MI/d	11.57	11.7
Meter Under-registration (Meas Non-HH)	MI/d	21.61	21.82
Distribution System Operational use	MI/d	7.31	7.71
Water taken legally unbilled	MI/d	18.04	18.64
Water taken illegally unbilled	MI/d	5.81	6
Water taken unbilled	MI/d	23.85	24.64
Water Delivered (Potable)	MI/d	1004.63	1016.35
Water Delivered (Non-potable)	MI/d	50.14	50.14
Water Delivered (Non-standard rates : Potable)	MI/d	1.47	1.47
Water Delivered (Non-standard rates : Non-potable)	MI/d	6.74	6.74
Distribution Losses	MI/d	129.73	133.24
Total Leakage	MI/d	168.96	173.41



Distribution Input	MI/d	1163.6	1157.3
Bulk Supply Imports	MI/d	4.62	4.62
Bulk Supply Exports	MI/d	65.67	65.67
Water Treated at own works to own customers	MI/d	1158.98	1152.68

### Distribution losses (6B.10)

**14** Distribution losses is calculated by subtracting customer supply pipe leakage from total leakage.

### Water taken unbilled (6B.11)

**15** Water taken unbilled remains similar to 2021/22. This is split into water taken legally and water taken illegally.

**16** Water taken legally is equivalent to 1.55 per cent of DI. This is greater than the 1.2 per cent of DI specified in the reporting guidelines but is based on measurements or detailed estimation methods. It should be noted that the guidance does not distinguish between WOCs and WASCs - WASCs are likely to report a higher number than the industry average here as they use water as part of water recycling operations. This is made up of the following components:

Sub component	Estimation method
Fire service	Each fire service publish a list of fires attended and the type of fire. They also publish typical usage per fire type. We extract the data for our region to derive a figure. Water used for training is not captured so may be under estimate
Use at water recycling works and pumping stations	Largest sites are measured/logged, model built to derive usage for smaller sites, not all of which have water connections
Sewer flushing	Model built taking number of tanker vehicles used, volume of tanks and assumption about the number of fills per day
Non billed consumption	This includes water used at AW offices, unbilled connections and water used in void properties
Void property customer supply pipe leakage	Derived from customer supply pipe leakage model built as part of industry club project by Tynemarch (now Ovarro)

**17** Water taken illegally is equivalent to 0.50 per cent of DI and is less than 0.6 per cent specified in the reporting guidance. This is made up from the following components:

Sub component	Estimation method
Illegal use of hydrants	We employ Aquam to manage the hire of metered standpipes. The volume from these is accounted for under non household billed consumption. As part of this they police our network for us identifying 3rd parties using non metered standpipes and ensure that when found they are trained and issued with a metered standpipe. From these interactions they produce a report estimating illegal use of standpipe volume for us each year
Illegal use within properties	This is currently based on industry assumptions but during 2021/22 we are working with Invenio to survey a significant number of non household property fire mains for which the bulk of the volume for this component is associated with

### Proportion of distribution input derived from impounding reservoirs (6B.12)

**18** The proportion of distribution input for 2021/22 from impounding reservoirs is reported as 0.022 or 24.95 MI/d.

### **Proportion of distribution input derived from pumped storage reservoirs (6B.13)**

**19** The proportion of distribution input for 2021/22 from pumped storage is reported as 0.400 or 462.89 MI/d.

### **Proportion of distribution input derived from river abstractions (6B.14)**

**20** The proportion of distribution input for 2021/22 from river abstractions is reported as 0.070 or 81.22 MI/d.

### **Proportion of distribution input derived from groundwater works, excluding managed aquifer recharge (MAR) water supply schemes (6B.15)**

**21** The proportion of distribution input for 2021/22 from groundwater works is reported as 0.508 or 588.26 MI/d.

### **Proportion of distribution input derived from artificial recharge (AR) and aquifer storage and recovery water supply schemes (6B.16 and 6B.17)**

**22** No such schemes are operated by the company.

### **Proportion of distribution input derived from saline abstractions and water reuse schemes (6B.18 and 6B.19)**

**23** No such schemes are operated by the company.

### **Total number of service reservoirs and water towers (6B.25 and 6B.26)**

**24** There are 255 service reservoirs and 128 water towers.

### **Energy Consumption ~ Treated Water Distribution (6B.27)**

**25** The total energy consumption was 151,045 MWh. The equivalent number for 2020/21 was 156,271 MWh so there has been a reduction of -5,225 MWh, or -3.3 per cent.

**26** The main component of this change has been the reduced electricity usage, driven by lower domestic water demand than in 2020/21 which had been driven higher due to the Covid-19 pandemic lockdowns. Electricity accounted for -5,027 MWh (-3.5 per cent) of the reduction. Fuel oil consumption reduced by -330 MWh (-8.9 per cent) compared to 2020/21, driven mainly by a reduction in purchases of gas oil. This is explained by the reduction in the use of gas oil for winter peak-logging activity, as fuel prices made it uneconomic to use our generators to avoid high winter electricity prices. This is also illustrated by a reduction in electricity exported from those generators.

**27** A number of assumptions have been made in calculating the treated water distribution energy consumption data. Please refer to the commentary for Table 6A.7 and 6A.32.

### **Average pumping head ~ treated water distribution (6B.28)**

**28** For an overview on how we have reported average pumping head please see the commentary for 5A.23.

**29** Treated Water Distribution APH; 68.44

**30** % of APH derived from measured data; 79.49%

**31** % of sites with measured volumes and/or lift; 67.73%

**32** Estimated historical pumping data from site documentation has been reviewed and validated by local subject matter experts to ensure it is accurate and up to date.

### **Total number of treated water distribution imports (6B.29)**

**33** The total number of treated water distribution imports for 2021/22 is 19.

**Water imported from 3rd parties' treated water distribution systems (6B.30)**

**34** The total volume of imported water for 2021/22 is 4.62 MI/d.

**Total number of treated water distribution exports (6B.31)**

**35** The total number of treated water distribution exports for 2021/22 is 62. This year has seen an increase in the number of exports to NAVs.

**Water exported to 3rd parties' treated water distribution systems (6B.32)**

**36** The total volume of exported water for 2021/22 is reported as 65.67 MI/d. This is a reduction on last year driven by reduced volumes being exported from Grafham to Affinity Water.

**Table 6C - Water network+ - Mains, communication pipes and other data for the 12 months ended 31st March 2022**

Line description	Units	Input
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Treated water distribution - mains analysis		
1	Total length of potable mains as at 31 March	km 38789.4
2	Total length of potable mains relined	km 0
3	Total length of potable mains renewed	km 32.5
4	Total length of new potable mains	km 170.7
5	Total length of potable water mains ( $\leq 320\text{mm}$ )	km 35807.6
6	Total length of potable water mains $> 320\text{mm}$ and $\leq 450\text{mm}$	km 1699.2
7	Total length of potable water mains $> 450\text{mm}$ and $\leq 610\text{mm}$	km 666
8	Total length of potable water mains $> 610\text{mm}$	km 616.6

Communication pipes		
9	Number of lead communication pipes	nr 515536
10	Number of galvanised iron communication pipes	nr 184540
11	Number of other communication pipes	nr 1574467

Treated water distribution - mains age profile		
12	Total length of potable mains laid or structurally refurbished pre-1880	km 10.2
13	Total length of potable mains laid or structurally refurbished between 1881 and 1900	km 8703.1
14	Total length of potable mains laid or structurally refurbished between 1901 and 1920	km 912.1
15	Total length of potable mains laid or structurally refurbished between 1921 and 1940	km 700.8
16	Total length of potable mains laid or structurally refurbished between 1941 and 1960	km 6992.2
17	Total length of potable mains laid or structurally refurbished between 1961 and 1980	km 3223.7
18	Total length of potable mains laid or structurally refurbished between 1981 and 2000	km 13288.3
19	Total length of potable mains laid or structurally refurbished post 2001	km 4959.0

Other		
20	Company area	km <sup>2</sup> 22,721
21	Number of lead communication pipes replaced for water quality	nr 123
22	Compliance Risk Index	nr 4
23	Event Risk Index	nr 1

### **Total length of potable mains as at 31 March (6C.1)**

**1** The length from the previous year has increased by 25.6km to 38789.4km for 2021/22. This increase is lower than usual due to a combination of factors such as the residual effects of the pandemic on the building industry and internal data capture backlogs.

### **Total length of potable mains relined and renewed (6C.2 and 6C.3)**

**2** For 2021/22 we are reporting 32.5km of mains renewed. This is an increase on the 2020/21 figure, but this is accounted for by last year being affected by the Covid-19 pandemic. We are unable to separate out lengths of mains relined and renewed, and so lines two and three are combined.

### **Total length of new potable mains (6C.4)**

**3** We report 170.7km of new mains laid in 2021/22. This is predominantly from Housing Estate Mains (HEMs) work, undertaken in the year (140.3km). There were also several standalone projects where new mains were laid in order to meet our commitments to reduce the number of customers affected by low pressure. These were in Wisbech St. Mary (3.2km), Dullingham (2.9km), Daventry (2.1km) and Tiptree (0.6km).

### **Potable mains by diameter band (6C.5- 6C.8)**

**4** A new reporting approach has been undertaken this year, using a combination of Python programming language and Databricks web platform to create a more consistent, systematic and transparent approach. These lines have been calculated using the latest in-service company-owned potable water mains data out of G/water (our corporate mapping system). The largest increase at 42km is in one of the larger diameter bands - 450 to 610mm. and the largest decrease of 38km was in the slightly smaller diameter band of 320mm to 450mm, which is due to constant improvement around the accuracy of the base data and the more accurate reporting approach. The others are largely stable and reflect the relatively small increases in potable mains length.

### **Number of lead, galvanised iron and other communication pipes (6C.9 - 6C.11)**

**5** Our communication pipe stock was last modelled in 2012 for the 2014 Price Review. That report has been used as a starting point and the number of replaced lead and galvanized iron communication pipe has been subtracted from the 2012 modelled totals.

**6** Lines 6C.9 and 6C.10 have experienced a small decrease, which falls in line with previous years, whereas line 11 has experienced a small increase, which again falls in line with previous years.

### **Total length of mains laid or structurally refurbished (6C.12 - 6C.19)**

**7** There have been some changes in lengths for many of these age bands, but no material changes to the overall potable mains length. This is due to a combination of factors:

- a more accurate reporting approach which has used a combination of Python programming language and Databricks web platform to create a more consistent, systematic and transparent methodology; and
- the use of more accurate up to date estimates of the year laid dates, which we have been investigating in preparation for PR24.

**8** These updates have enabled a more accurate estimate of the year laid for pipes. This explains the most significant increase of 2,674km for pipes aged between 1881 and 1900, and the band with the largest decrease being those laid between 1901 and 1920 of 2,544km. Other bands have also seen changes, due to the more accurate reporting approach and estimate of ages.

### Company area (6C.20)

**9** The figure reported as the area served for water is the Anglian Water appointed area net of the aggregate area of all NAVs within our appointed area. The increase in the area by comparison to the 2020/21 APR figure is due to the inclusion of the area served by Hartlepool Water which previously has not been included in the Anglian Water appointed area. The year on year movements of the water area figure are shown below.

Category	2021 data (sq km)	2022 data (sq km)	Notes
Appointed area	22650	22747	2022 area includes Hartlepool
AW NAVs	1	1	
NAVs within AW area	-25	-27	
Total reported	22626	22721	

### Number of lead communication pipes replaced for water quality (6C.21)

**10** In 2021/22 we have replaced 123 lead communication pipes. These have been proactively replaced following compliance failures of the lead standard, notification from a customer that they intend to replace or have replaced their lead pipe, or during planned work on the network. No planned proactive replacements in areas of known high lead pipework have been undertaken in this reporting year.

**11** This figure is lower than last year partly due to the impact of Covid-19, where we were seeing fewer replacements following a PCV failure. This was impacted by the fixed point sampling which was in place, and additionally our free lead test services was suspended or reduced at times throughout the year again due to Covid-19, resulting in a reduction in the number of lead tests and subsequent PCV failures.

**12** Eight lead supply pipe replacements have been undertaken as we seek opportunities to understand how to deliver this work in readiness for AMP8.

### Compliance Risk Index (6C.22)

**13** Please see the commentary for 3A.1

### Event Risk Index (6C.23)

**14** Please see the commentary for 3E.11.

**Table 6D - Demand management - Metering and leakage activities for the 12 months ended 31 March 2022**

Line description	Units	Basic meter	AMR meter	AMI meter
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**Metering activities - Totex expenditure**

1	New optant meter installation for existing customers	£m	1.257	-	0.509
2	New selective meter installation for existing customers	£m	-	-	-
3	New business meter installation for existing customers	£m	0.147	-	0.003
4	Residential meters renewed	£m	12.355	-	17.715
5	Business meters renewed	£m	1.226	-	0.664

**Metering activities - Explanatory variables**

6	New optant meters installed for existing customers	000s	3.916	0.000	1.506
7	New selective meters installed for existing customers	000s	0.578	0.000	0.128
8	New business meters installed for existing customers	000s	0.102	0.000	0.014
9	Residential meters renewed	000s	143.334	0.000	133.158
10	Business meters renewed	000s	5.230	0.000	5.468
11	New residential meters installation for existing customers – supply-demand balance benefit	MI/d	0.16	0.00	0.08
12	New business meters installation for existing customers – supply-demand balance benefit	MI/d	0.00	0.00	0.00
13	Residential meters renewed - supply-demand balance benefit	MI/d	-	0.00	1.15
14	Business meters renewed - supply-demand balance benefit	MI/d	-	0.00	0.00
15	Residential properties - meter penetration	%	60.4	8.8	13.9

Leakage activities	Units	Maintaining leakage	Reducing leakage	Total
Total leakage activity - totex expenditure	£m	63.575	31.861	95.436
Leakage improvements delivering benefits in 2020-25	MI/d	-	-	8.97

**Per capita consumption (excluding supply pipe leakage)**

18	Per capita consumption (measured customers)	l/h/d	128.08
19	Per capita consumption (unmeasured customers)	l/h/d	174.91

**1 Metering activities - totex expenditure (6D.1 - 6D.5)**

**2** We have put contractual arrangements in place for the delivery of our smart metering and basic metering programmes during AMP7 and as such, the key variable on totex costs is the volume installed. The commentary below explains the delivery of our metering programme in this first year of the AMP.

### Meters installed and renewed (6D.6 - 6D.10)

**3** With Covid-19 restrictions relaxed in 2021/22, we were able to work through the backlog of customers' optant requests so we saw an increase in numbers completed with 5,422, of which 1,506 (28 per cent) were smart meters.

**4** With the meters that are installed at our behest, the volumes of the true selective meters were much higher than in 2020/21 at 706 including smart and non smart meters. As with optants, we managed to complete the backlog of jobs that built up due to Covid-19 restrictions.

**5** The number of new non-household meters was also higher than in 2020/21 due to the relaxation of Covid-19 restrictions.

**6** The smart meter programme was disrupted this year due to the worldwide shortage of microchips. Supply of smart meters was interrupted and this was reflected in a reduction in renewals of domestic meters at 133,158. We continued to renew with non-smart meters in areas outside our target zones for the smart programme. This work was done instead of the smart renewals and significantly increased from 2020/21.

**7** For non household meter renewals, the Covid-19 restrictions caused a backlog of jobs in 2020/21. We saw an increase of the volumes in 2021/22 at 10,698, of which 5,468 (51 per cent) were smart meters.

**8** The number of smart meters in 6D.6-10 total 140,274. In addition, we fitted 5,647 meters to new connections, giving a total number of smart meters fitted in the year of 145,921.

### New residential meters installed – supply-demand balance benefit (6D.11)

**9** As part of our meter replacement and smart meter installation program we have installed 134,792 smart meters to household customers, along with non-smart traditional meter replacement.

**10** We have assumed that the installation of smart meters will enable a 3 per cent change in customer behaviour and a further 3 per cent saving for plumbing losses and customer supply pipe leaks (in alignment with WRMP19) and that these savings should be calculated as applying to each meter for an average of 6 months (for example, half a year), to account for the overall installation rate.

**11** For customer who has opted to have a visual read meter we have assumed a saving of 15 per cent as a change from being unmeasured to measured (in line with WRMP19 calculation).

**12** Savings have been calculated based upon 2021/22 per capita consumption and occupancy rates, which are more reflective of post Covid-19 conditions.

PCC	
Measured	128.08 l/h/d
Unmeasured	174.91 l/h/d

Occupancy Rate	
Measured	2.25 persons/property
Unmeasured	2.63 persons/property

**13** For residential meter installations we have, consequently, calculated savings of 0.16MI/d for optants who have switched from being unmeasured to being billed on a visual read meter (15 per cent saving from being unmeasured) and an additional 0.08MI/d or those switching from being unmeasured to being billed using a smart meter (a 21 per cent saving from being unmeasured. i.e. visual read (15 per cent) + smart meter savings (6 per cent) combined)). The combined saving for optants (both to smart and visual read meters) would be 0.24MI/d.



**14** Note that these savings will be cumulative on top of the savings already made due to previous smart meter installations for the previous year. The cumulative AMP7 savings that can be attributed to the introduction of smart meters is 2.52MI/d for meters replaced and 0.12MI/d for customers who have opted to have a smart meter from previously being unmeasured.

**15** A straightforward and conservative approach has been adopted which applies assumed savings to the number of installed meters. As additional smart meter data becomes available we will look to use this directly observed data, (potentially using meter readings to determine the actual savings which could then be aggregated and reported). This approach is an aspiration, but will currently require significant effort to understand other impacts within those numbers (for example, the potential impact of weather on savings recorded each year).

#### **New business meters installed – supply-demand balance benefit (6D.12)**

**16** As part of our meter replacement and smart meter installation programme we have installed 5,482 smart meters to our business customers and 5,332 visual read meters.

**17** We currently have not attributed water efficiency savings to the installation of non-household meters, but will look to monitor changes to non-household consumption as customers are switched to smart meters. Work is currently being undertaken to assess savings for business customers that should be attributed to the smart meter programme and options are in development in order to assist Retailers and their customers with respect to water efficiency.

#### **Residential meters renewed - supply-demand balance benefit (6D.13)**

**18** As part of our meter replacement and smart meter installation programme we have installed 133,158 smart meters to household customers, along with non-smart traditional meter replacement.

**19** We have assumed that the installation of smart meters will enable a 3 per cent change in customer behaviour and a further 3 percent saving for plumbing losses and customer supply pipe leaks (in alignment with WRMP19) and that these savings should be calculated as applying to each meter for an average of 6 months (i.e. half a year), to account for the overall installation rate. This is in effect an additional 6 per cent saving over and above the 15 per cent saving expected from those customers who are measured as opposed to unmeasured.

**20** Note that these savings will be cumulative on top of the savings already made due to previous smart meter installations

**21** Savings have been calculated based upon 2021/22 per capita consumption and occupancy rates, which are more reflective of post Covid-19 conditions.

PCC	
Measured	128.08 l/h/d
Unmeasured	174.91 l/h/d

Occupancy Rate	
Measured	2.25 persons/property
Unmeasured	2.63 persons/property

**22** Consequently, for residential meter renewals, we have calculated savings of 1.15MI/d.

**23** A straightforward and conservative approach has been adopted which applies assumed savings to the number of installed meters. As additional smart meter data becomes available we will look to use this directly observed data, (potentially using meter readings to determine the actual savings which could then be aggregated and reported). This approach is an aspiration, but will currently require significant effort to understand other impacts within those numbers (for example, the potential impact of weather on savings recorded each year).

### **Business meters renewed - supply-demand balance benefit (6D.14)**

**24** We currently have not attributed water efficiency savings to the installation or renewal of non-household meters, but will look to monitor changes to non-household consumption as customers are switched to smart meters over time. Work is currently being undertaken to assess savings for business customers that should be attributed to the smart meter programme and options are in development in order to assist Retailers and their customers with respect to water efficiency.

### **Total leakage activity - totex expenditure (6D.16)**

**25** We have reported costs to maintain leakage and costs to reduce leakage. Costs to maintain leakage align with base costs and costs to reduce leakage align with the activities associated with the enhancement funding detailed in our business plan. The enhancement funding is also reported, split Opex/Capex in table 4L.26-28. The winter of 2020/21 caused the leakage level at the start of 2021/22 to be higher than we had planned for. As a result additional funding was provided by the business to ensure that 2021/22 targets were able to be met, even if the winter of 2021/22 had a worst that average impact on leakage.

### **Leakage improvements delivering benefits in 2020-25 (6D.17)**

**26** The definition for this line requires us to report the difference between 2020/21 and 2021/22 leakage however we do not feel that this is the best way to reflect the outputs from leakage improvement initiatives. The definition assumes that the total of any change in leakage is as a result of direct activity where as in reality the weather plays a large part in determining how many leaks break out and the level of leakage from year to year.

### **Per capita consumption (unmeasured customers) (6D.18) and (measured customers) (6D.19)**

**27** Per capita consumption is derived from the water balance and follows the reporting guidelines as set out during the PR19 process. We have assessed our compliance with the guidance against each of the 24 components and are reporting all as green.

**28** For further details about activities we have undertaken to drive PCC down please refer to the commentary in table 3A.4

## Table 6F - WRMP annual reporting on delivery - non-leakage activities

**1** Table 6F has not been published in this document. The published version of the Ofwat tables can be viewed through the [Our reports](#) section on our website.

### Table Notes

**2** Actual costs are included for the years 2020/21 and 2021/22. Costs incurred prior to 2020/21 have been included in the 2020/21 column. Forecast costs are based on our delivery plans as at March 2022. The nature of the programme means that the schemes are at different stages in our investment process with some more advanced than others, we therefore expect movements in the forward looking costs as the schemes progress.

**3** Costs are presented in 2021/22 price time base.

**4** AMP8 costs for the North Lincs Alternative Strategy are indicative only and will be refined and included in our PR24 business plan submission.

**5** Benefits are forecast in the year where full capacity beneficial use is achieved – in some cases the assets will be constructed in previous years and wet commissioned but are dependent upon the completion of other schemes to gain full beneficial use. There are no benefits reported against the Adaptive Planning line as we are still in the early stages of this work and the benefits have not yet been confirmed.

**6** For schemes where there are multiple pipeline diameters and materials the predominant diameter and material has been included in the table. PE pipeline diameters are quoted as external diameter and steel as internal.

**7** Pumping station power reported (kW) is the total for each interconnector scheme, in some cases this is the sum of several pumping stations. This has been calculated on the same basis as table 6B.

**8** Delivery year is based on current programme and subject to change.

**9** There are no green recovery schemes included in this table.

**10** Strategic regional solutions schemes have not been included in this table as they were separately funded under the Strategic Regional Solutions enhancement allowance.

**11** There have been changes to the Performance Commitment following the Final Determination. We are currently working to a PCL of 469.4 MLD as summarised below:

Final determination	355.2 MLD
Following CMA additions	382.4 MLD
Following IDOK additions	469.4 MLD

### Outcome Delivery Summary

**12** We are on track to deliver the outcomes of our WRMP19 through the delivery of the schemes included in our PR19 business plan. As we have sought to optimise these schemes, we have taken forward some changes to the capacity of the individual schemes compared to the WRMP. These are outlined below. We expect our overall total additional capacity delivered to meet the 469.4 MLD target, once adjustments for the removal of the Pyewipe schemes are taken into account. Cost pressures are also materially affecting this programme and we are currently forecasting across AMP7 an overspend of around £30m against the £513m enhancement allowance (adjusted to 21/22 price time basis).

## How are we delivering this programme?

**13** The internal interconnectors programme represents a significant increase in Anglian Water's capital programme for AMP7. A new strategic delivery alliance was set up to focus solely on these projects, the Strategic Pipelines Alliance (SPA).

**14** SPA was set up in 2020 after a competitive procurement process that started in 2019 and consists of five delivery partners, Costain, Farrans, Jacobs and Mott MacDonald Bentley, along with Anglian Water working together as a single integrated organisation with the aim of building a long-term and sustainable solution for the supply of water in our region, protecting our environment and ultimately supporting the communities we serve.

**15** This alliance is delivering the large diameter strategic interconnectors as an outcome driven programme following Project 13 principles whilst some of the smaller, discrete schemes will be delivered by our long standing Integrated Main Works (IMW) alliance.

**16** Project 13 is an innovative model for the delivery of major infrastructure projects which brings together owners, partners, advisers and suppliers to work in collaborative and integrated environments to deliver better outcomes. The aim is to move away from traditional transactional project delivery models to facilitate innovation. It is defined by five pillars

- Capable Owner
- Governance
- Integration
- Organisation
- Digital Transformation

**17** We are continually looking to ensure we are delivering best value for money for our customers. During the business plan and WRMP processes the current set of investments was selected using an extensive optioneering process that considered transfers from different locations alongside other options like new reservoirs and desalination. This included high level assessment of pipeline routes and hydraulic requirements such as pumping station capacities to ensure that the requested allowance in our business plan was efficient. To continue to make sure the money we spend delivers maximum benefit to our environment, customers, regulators and shareholders, all schemes in the delivery phase are taken through our Risk, Opportunity and Value (ROV) process.

**18** ROV provides a framework to collaboratively make best value totex investment decisions through:

- Fully understanding problems at a service/risk level
- Establishing root causes
- Creatively coming up with lots of options
- Making best value choices, balancing costs and benefits
- Challenging for greater value across the Six Capitals
- Identifying Lessons Learned during and after project completion, and
- Reviewing the benefits achieved

**19** ROV is used in conjunction with digital support tools such as new hydraulic models to make best value decisions both system wide for elements such as pumping and storage, and at individual scheme level, to ensure that we are taking forward the most cost beneficial option for each scheme and the entire system.

**20** As part of the challenge process we have also used a 'Tiger Team' approach, bringing in senior stakeholders and experts using the extensive experience of our SPA partner companies to, once again, challenge our thinking and to explore alternative ways to meet the strategic outcomes.

## Changes to WRMP19 Capacities

**21** We are on track to deliver the overall increase in capacity as reflected in the Performance Commitment, and to deliver our WRMP customer outcomes. As noted above, our optimisation process has enabled us to make some changes to individual schemes which mean we are delivering the outcomes in a cost efficient manner and protecting our customers' interests.

**22** The capacity of a number of schemes increased following the CMA redetermination. Most of these schemes were already being progressed at the higher capacity to ensure the customer benefits assumed as part of our WRMP19 are realised. For example the Ludham (WRMP ref HPB1) scheme was already in construction at the 1.5 MLD capacity and was completed in 2020/21. The redetermination increased the funding back to the WRMP19 level in line with the increase in capacity.

**23** In some cases the redetermination resulted in changes to designs that were already progressing at the reduced capacity. For example, the Norwich to Wymondham scheme (NNR8) which was already in detailed design. This scheme was redesigned and will be commissioned in early 2022/23 at the 5 MLD capacity, this late change had an impact on the programme but the scheme will still be completed in time to meet customer needs.

**24** There are 3 interconnectors (CLN16, SLN6, RTN27) where, through the system optimisation and ROV processes, we have developed solutions to meet the WRMP and customer outcomes in a different configuration. This has led to a decrease to the capacity of these interconnectors, which has been made possible by the development of an alternative option for RTN27 that brings some of the required capacity into the system at a different location, we are therefore currently reporting a lower capacity in table 6F for these interconnectors but are providing the same customer outcomes.

**25** Following the CMA re-determination we have completed an iDoK to descope the Elsham to Lincoln transfer (CLN16) and Elsham Conditioning Plant (CLN15) schemes from the Direct Procurement Process and deliver them in house, resulting in an increase in the total capacity delivered, with associated increase in funding and change to the performance commitment target.

**26** In addition to the changes in capacity resulting from the CMA redetermination and subsequent iDoK, we have also increased the capacity of 3 interconnectors (ELY9, BHV5, NWM6) due to a change in solution for the WINEP obligations on the River Lark. An effluent recirculation solution was agreed with the Environment Agency and included in our PR19 business plan. Since then the EA have confirmed that this is not acceptable due to water quality considerations that were not flagged until after the business plan had been submitted. An optioneering process identified a solution to upsize 3 of the strategic interconnectors would meet the EA requirements and be deliverable in the timescales required to meet the obligation. This change had no increase in funding to match the increase in capacity and therefore we are required to find funding for this from within the business.

## Middlegate Water Treatment Works

**27** An alternative solution to the Middlegate Water Treatment Works has been developed since PR19 which is significantly better value for customers. It leads to savings of c£25m over AMPs 7 and 8, improves resilience and reduces carbon emissions. This alternative solution has become feasible due to three factors:

1. Update of Environment Agency modelling leading to better utilisation of the abstraction licences (July 2021);
2. The opening up of an opportunity to abstraction licence trading with a third party which was not known about during the PR19 process (August 2021); and
3. Confirmation of the ban on metaldehyde, allowing for greater movement of water within supply networks (September 2020).

**28** As a result of this we are not progressing the two schemes at Pyewipe (SHB2a and SHB2b) or the DPC Middlegate Scheme, instead we are progressing with the North Lincolnshire Alternative Strategy in their place. These changes will require amendments to be made to the performance commitment to remove SHB2a and SHB2b and their associated capacities (6 MLD and 20.4 MLD) and replace them with new schemes and capacities. As part of this the CLN15 supply side scheme will be upsized from 25 MLD to 55 MLD. The full details of this and the confirmed changes to the PC will be reported in the 2022/23 APR following conclusion of the ongoing discussions with Ofwat.

### **Digital Twin (DT)**

**29** A key part of this programme is the use of digital twin technology. The development of the digital twin will bring together contextual data from assets, combining them with near real time data to create information and models linked to how the system operates and performs. This will enable decisions and actions, informed by data to fully optimise the system and its interaction with the existing AW infrastructure network to manage the impacts on customers.

### **Schemes completed and benefits realised to date**

**30** All the WRMP schemes have now been promoted through the initial stages of our investment governance process and are with one of our strategic alliances.

**31** The first internal interconnector scheme has been completed delivering a benefit of 1.5 MLD. This is the Ludham Scheme (HPB1) which was completed in 2020/21 in line with our Restoring Sustainable Abstraction (RSA) obligation to cease abstraction from the Ludham boreholes by April 2021. The scheme was delivered as a 1.5 MLD capacity transfer which meets the revised performance commitment and provides an element of additional futureproofing.

### **Schemes in construction**

**32** We have started construction on two schemes: a large diameter steel interconnector between Lincoln and Grantham (SLN6) and an intra-zonal scheme between Norwich and Wymondham (NNR8). On the Lincoln to Grantham scheme we have to date installed 15.9km of 800mm diameter steel main between Harmston and Wilsford. We expect to commence commissioning this section and to have water into supply during the year 2022/23 before moving on to construct the next sections of the large diameter pipeline. The Norwich to Wymondham scheme consists of 12.3 km of 315mm diameter PE pipeline and a 130kW pumping station. This is in the final stages of construction and we expect to get beneficial use from it in June 2022.

**33** Additionally, we have commenced enabling activities, ecology and archaeology surveys across the programme and will be starting pipeline construction on a further 8 schemes in 2022/23 with the remainder commencing in 2023/24.

### **Cost Pressures and Risks**

**34** During the period there have been unprecedented cost pressures from several sources. As a result of this we are expecting the programme to cost around £30m more than the FD allowance. These pressures and costs to date include :

1. The withdrawal of the UK from the European Union (Brexit) has made transacting with Members of the European Union more difficult particularly with transportation and documentation required for shipping of goods to the UK. The impact of this is circa £2m across the programme.
2. The removal of the subsidy on diesel fuel has had a direct impact on fuel costs for constructing works as well as suppliers, for instance aggregate and concrete suppliers, passing on the cost of the increase through increases in costs for the raw product, this is expected to increase costs by circa £8m of direct and indirect costs. Substitutes, such as HVO, have been priced to take advantage of this market increase.



3. The impact of the Covid-19 pandemic has resulted in supply lines being closed due to isolation requirements, both nationally and internationally. As these supply lines have re-opened demand has out-stripped supply resulting in unprecedented increases in material costs, particularly affecting both steel and PE pipe, and fixtures and fittings. These increases at peak have been as much as 100 per cent of pre-Covid-19 prices in some cases. This has resulted in piece-meal ordering and loss of supply chain efficiencies from bulk ordering. Delivery of goods have been subject to delay and increased costs due to lorry driver shortages. The impact of this has been assessed as circa £40m.
4. The situation in Ukraine has led to future orders of steel pipe being deferred as suppliers are not able to quote as the iron ore for the steel mills to manufacture the plate was sourced from Mariupol in Ukraine. Suppliers are currently looking at South Korea or Japan which will ultimately result in a cost increase. Crop compensation costs have risen by an estimated £11m across the programme due to global shortages of cereal, wheat and rape.
5. Labour and staff availability and costs are increasing due to demand from UK wide infrastructure programmes, like HS2 and Sizewell competing for the same resource from a limited resource pool. The Anglian region suffers from its proximity to London where resources in the region can travel for greater salaries.

**35** To mitigate the above, SPA is working directly with the Tier 1 Partners and Supply Chain partners to limit the impacts of these external pressures and find cost efficient means of delivering the outcomes expected.

**36** Supply Chain partners benefit from having visibility of the bulk requirements for SPA when sourcing alternative areas for raw product or allocating production slots. In addition, the removal of intermediaries and regular dialogue ensures that SPA is able to respond promptly to the changing market conditions as advised by the Supply Chain partners. SPA has assisted Supply Chain partners with improved cash flow to help with downstream pressures.

**37** With regard to Tier 1 Partners, best practise sharing is taking place. For example, best in class rates for HVO (diesel substitute) and plant are being shared across Partners so that they are available for all to use.

**38** Staff and labour requirements remains problematic given the demands in the market, but Partners have committed to prioritising SPA recognising the strategic importance of the interconnector programme to AW customers.

**39** Following the lifting of Covid restrictions, staff are encouraged to be present in the integrated SPA office where this assists with integration and the transition of projects from design to delivery.

## **Sustainability / Carbon**

**40** SPA (Strategic Pipeline Alliance) recognised that the earlier that carbon is challenged, the greater is the opportunity. In response, their Solutions Team led a disruptive challenge process which identified carbon reductions of 200,000 TCO<sub>2</sub>e as well as direct cost savings.

**41** SPA partners and suppliers were engaged to update AW's existing carbon models and to create new models. These models were then used alongside a forecast of future grid emissions to enable whole life carbon modelling. The Solutions Team also engaged various optimisation techniques including Optimatics to support the whole life cost and carbon modelling. Sophisticated genetic algorithm-based optimisation software was used to identify and evaluate thousands of pipe, pump, storage, and control configurations, which in turn improved the operational dialogue on how the assets would in practice respond to given failure events.

**42** The work of the SPA (Strategic Pipeline Alliance) was audited as part of AW's most recent PAS2080 verification. They demonstrated the benefits of leaders who had created an organisation focused on delivering outcomes and recognised the link between cost and

carbon. Seemingly minor changes were also made to drive the right behaviours e.g., the Solutions Team referred to reservoirs and pumping stations as 'tanks' and 'pumps' to encourage low carbon thinking. This was all underpinned with effective processes, measurement, forecasting and reporting of carbon.

### **Metaldehyde**

**43** We have been able to avoid the use of temporary metaldehyde treatment through the careful sequencing of delivery, therefore metaldehyde treatment is not part of our current solution designs or costs. We are working closely with the DWI to gain support for updating the Annex to our Undertaking where relevant to ensure that we continue to meet our water quality obligations following the metaldehyde ban.

### **Demand -side Improvements (excluding leakage and Smart Metering)**

**44** We understand that the purpose of Ofwat collecting the information in table 6F is to provide an updated view on the forecast costs of investment that was funded within the Final Determination under the enhancement model 'Supply Demand Balance' (SDB). For some companies this cost assessment model covered both strategic supply side water resource schemes such as interconnectors as well as demand side options. For Anglian Water the model only covered strategic supply side options and made no allowance for demand side options as these were covered by the smart metering cost assessment model. We have provided costs here for the demand side options as requested but would like to flag to Ofwat that these costs are not comparable with the SDB allowance in the adjusted Final Determination.

### **Supply demand balance improvements delivering benefits starting from 2026**

**45** Costs exclude those associated with the Fens Reservoir and associated transfers which have been moved into the RAPID process. The costs included here in table 6F include the early development of desalination, water re-use and aquifer recharge schemes.

### **Programme Assurance**

**46** We have now engaged the services of Aqua Consultants Ltd to provide third party independent assurance of the programme and confirmation that the delivery strategy meets our PR19 outcomes including all the changes detailed above.



**Table 7A - Wastewater network+ - Functional expenditure for the 12 months ended 31st March 2022**

	Line description	Units	£000s
	<b>Costs of STWs in size bands 1 to 5</b>		
1	Direct costs of STWs in size band 1	000s	3,948.000
2	Direct costs of STWs in size band 2	000s	3,309.000
3	Direct costs of STWs in size band 3	000s	11,254.000
4	Direct costs of STWs in size band 4	000s	21,056.000
5	Direct costs of STWs in size band 5	000s	13,696.000
6	General & support costs of STWs in size bands 1 to 5	000s	4,074.000
7	Functional expenditure of STWs in size bands 1 to 5	000s	57,337.000
	<b>Costs of large STWs (size band 6)</b>		
8	Service charges for STWs in size band 6	000s	1,269.000
9	Estimated terminal pumping costs size band 6 works	000s	3,110.000
10	Other direct costs of STWs in size band 6	000s	41,199.000
11	Direct costs of STWs in size band 6	000s	45,578.000
12	General & support costs of STWs in size band 6	000s	3,898.000
13	Functional expenditure of STWs in size band 6	000s	49,476.000
	<b>Costs of STWs - all sizes</b>		
14	Total Functional expenditure for Sewage treatment	000s	106,813.000

**Table 7B - Wastewater network+ - Large sewage treatment works for the 12 months ended 31 March 2022**

Line description		Units	Large STW1	Large STW2	Large STW3	Large STW4	Large STW5	Large STW6	Large STW7	Large STW8	Large STW9	Large STW10
<b>Sewage treatment works - Explanatory variables</b>												
1	Works name (existing works)	text	ANWICK STW	BASILDON STW	BEDFORD STW	BENFLEET STW	BOSTON STW	BOURNE STW	BRACKLEY STW (NEW)	BRAINTREE	BROADHOLME STW	CAISTER - PUMP LANE STW
2	Classification of treatment works	text	Tertiary A2	Secondary Activated Sludge	Tertiary A2	Secondary Biological	Secondary Biological	Tertiary A2	Tertiary A2	Tertiary A2	Tertiary A2	Secondary Activated Sludge
3	Population equivalent of total load received	000s	29.34	125.28	185.88	29.01	58.37	26.78	37.97	31.17	222.49	111.83
4	Suspended solids consent	mg/l	26	45	30	80	70	22	25	16	30	0
5	BOD <sub>5</sub> consent	mg/l	13	25	20	25	25	11	11	8	17	25
6	Ammonia consent	mg/l	6	10	7	20	0	3	3	3	3	0
7	Phosphorus consent	mg/l	2	0	1	0	0	2	2	2	1	0
8	UV consent	mW/s/cm <sup>2</sup>	0	0	0	0	0	0	0	0	0	0
9	Load received by STW	kgBOD <sub>5</sub> /d	1,760	7,517	11,153	1,741	3,502	1,607	2,278	1,870	13,349	6,710
10	Flow passed to full treatment	m <sup>3</sup> /d	4,851	27,843	45,461	5,980	11,112	6,662	5,718	7,168	54,303	28,696
<b>Sewage treatment works - Functional expenditure</b>												
11	Service charges	£000s	17	33	33	19	17	19	19	19	33	23
12	Estimated terminal pumping expenditure	£000s	1	103	192	-	-	-	-	-	24	-
13	Other direct expenditure	£000s	342	335	1,361	228	357	341	713	685	1,345	770
14	Total direct expenditure	£000s	360	471	1,586	247	374	360	732	704	1,402	793
15	General and support expenditure	£000s	30	47	133	20	32	30	61	59	120	69
16	Functional expenditure	£000s	390	518	1,719	267	406	390	793	763	1,522	862

Line description	Units	Large STW11	Large STW12	Large STW13	Large STW14	Large STW15	Large STW16	Large STW17	Large STW18	Large STW19	Large STW20
<b>Sewage treatment works - Explanatory variables</b>											
1 Works name (existing works)	text	CAMBRIDGE STW	CANVEY ISLAND STW	CANWICK STW	CHELMSFORD STW	CLACKNAGHILL HAVEN STW	COLCHESTER STW	CORBY STW	COTTON VALLEY STW	DUNSTABLE STW	FELIXSTOWE STW
2 Classification of treatment works	text	Secondary Activated Sludge	Secondary Activated Sludge	Tertiary B2	Secondary Activated Sludge	Secondary Activated Sludge	Secondary Activated Sludge	Tertiary A2	Tertiary A2	Tertiary A2	Secondary Activated Sludge
3 Population equivalent of total load received	000s	194.27	40.02	125.01	152.69	48.52	144.60	95.33	307.87	62.17	34.05
4 Suspended solids consent	mg/l	20	-	30	40	-	60	20	25	20	120
5 BOD <sub>5</sub> consent	mg/l	15	25	10	20	25	25	10	12	12	25
6 Ammonia consent	mg/l	5	-	3	10	-	15	1	5	3	50
7 Phosphorus consent	mg/l	1	-	1	-	-	-	1	1	2	-
8 UV consent	mW/s/cm <sup>2</sup>	-	-	-	-	-	30	-	-	-	-
9 Load received by STW	kgBOD <sub>5</sub> /d	11,656	2,401	7,501	9,161	2,911	8,676	5,720	18,472	3,730	2,043
10 Flow passed to full treatment	m <sup>3</sup> /d	52,101	9,343	34,073	37,578	13,545	30,543	21,386	72,389	11,425	7,702
<b>Sewage treatment works - Functional expenditure</b>											
11 Service charges	£000s	20	17	33	34	17	33	19	58	19	17
12 Estimated terminal pumping expenditure	£000s	253	-	226	58	13	336	5	225	-	-
13 Other direct expenditure	£000s	1,240	307	650	1,309	394	1,325	1,081	2,393	433	300
14 Total direct expenditure	£000s	1,513	324	909	1,401	424	1,694	1,105	2,676	452	317
15 General and support expenditure	£000s	139	27	77	119	37	153	93	237	39	26
16 Functional expenditure	£000s	1,652	351	986	1,520	461	1,847	1,198	2,913	491	343

Line description	Units	Large STW21	Large STW22	Large STW23	Large STW24	Large STW25	Large STW26	Large STW27	Large STW28	Large STW29	Large STW30
<b>Sewage treatment works - Explanatory variables</b>											
1 Works name (existing works)	text	FLITWICK STW	FORNHAM ALL SAINTS STW	GREAT BILLING STW	GRIMSBY PARK STW	HARWICH AND DOVERCOURT STW	HAVERHILL STW	HITCHIN STW	HUNTINGDON (DOVERCOURT) STW	INGOLDMILLS STW	IPSWICH CLIFF QUAY RAE BURN STW
2 Classification of treatment works	text	Tertiary A2	Tertiary B2	Tertiary A2	Secondary Activated Sludge	Secondary Activated Sludge	Tertiary B2	Tertiary A2	Tertiary A2	Secondary Activated Sludge	Secondary Activated Sludge
3 Population equivalent of total load received	000s	31.61	92.86	326.34	144.07	24.19	30.12	37.78	43.40	50.72	148.27
4 Suspended solids consent	mg/l	25	16	25	-	120	20	30	30	-	200
5 BOD <sub>5</sub> consent	mg/l	15	8	13	25	25	10	15	20	25	25
6 Ammonia consent	mg/l	5	2	5	-	50	4	4	7	-	50
7 Phosphorus consent	mg/l	2	2	1	-	-	2	1	1	-	-
8 UV consent	mW/s/cm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-
9 Load received by STW	kgBOD <sub>5</sub> /d	1,897	5,572	19,580	8,644	1,451	1,807	2,267	2,604	3,043	8,896
10 Flow passed to full treatment	m <sup>3</sup> /d	7,751	11,539	85,089	44,782	6,349	6,346	8,679	14,544	10,955	31,550
<b>Sewage treatment works - Functional expenditure</b>											
11 Service charges	£000s	19	19	57	32	19	19	19	19	17	34
12 Estimated terminal pumping expenditure	£000s	-	7	345	154	61	73	44	-	49	155
13 Other direct expenditure	£000s	294	417	2,577	930	183	278	573	422	430	1,603
14 Total direct expenditure	£000s	313	443	2,979	1,116	263	370	636	441	496	1,792
15 General and support expenditure	£000s	26	36	264	102	22	31	54	37	42	161
16 Functional expenditure	£000s	339	479	3,243	1,218	285	401	690	478	538	1,953

Line description	Units	Large STW31	Large STW32	Large STW33	Large STW34	Large STW35	Large STW36	Large STW37	Large STW38	Large STW39	Large STW40
<b>Sewage treatment works - Explanatory variables</b>											
1 Works name (existing works)	text	KINGS LYNN STW	LEIGHTON LINSLADE STW	LEITCHWORTH STW	LOWESTOFT STW	MARKET HARBOROUGH STW	MARSTON STW (LINGS)	NEWMARKET STW	PETERBOROUGH (FLAG FEN) STW	ROCHFORD STW	SHENFIELD AND HUTTON STW
2 Classification of treatment works	text	Tertiary A2	Tertiary B2	Tertiary A2	Secondary Activated Sludge	Tertiary A2	Tertiary B2	Tertiary A2	Tertiary A1	Tertiary A1	Tertiary A2
3 Population equivalent of total load received	000s	62.92	45.48	47.52	89.68	25.88	59.29	27.79	224.48	35.11	44.91
4 Suspended solids consent	mg/l	100	35	25	-	20	15	20	24	60	20
5 BOD <sub>5</sub> consent	mg/l	25	25	13	25	10	10	12	9	25	10
6 Ammonia consent	mg/l	-	8	3	-	5	3	4	3	-	3
7 Phosphorus consent	mg/l	-	2	1	-	2	2	2	-	-	2
8 UV consent	mW/s/cm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-
9 Load received by STW	kgBOD <sub>5</sub> /d	3,775	2,729	2,851	5,381	1,553	3,557	1,667	13,469	2,107	2,695
10 Flow passed to full treatment	m <sup>3</sup> /d	20,778	6,484	7,201	18,573	9,080	15,479	4,586	62,369	9,511	12,524
<b>Sewage treatment works - Functional expenditure</b>											
11 Service charges	£000s	33	19	19	32	19	19	19	33	17	19
12 Estimated terminal pumping expenditure	£000s	1	14	17	-	-	4	-	158	-	-
13 Other direct expenditure	£000s	1,229	590	450	1,380	316	378	258	1,663	513	595
14 Total direct expenditure	£000s	1,263	623	486	1,412	335	401	277	1,854	530	614
15 General and support expenditure	£000s	115	52	42	120	29	33	23	160	45	49
16 Functional expenditure	£000s	1,378	675	528	1,532	364	434	300	2,014	575	663

Line description	Units	Large STW41	Large STW42	Large STW43	Large STW44	Large STW45	Large STW46	Large STW47	Large STW48	Large STW49	Large STW50
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#### Sewage treatment works - Explanatory variables

1	Works name (existing works)	text	SOUTHEND STW	SPALDING STW	ST NEOTS STW	TEINER-NEWTON MARSH STW	THETFORD STW	TILBURY STW	WEST WALTON STW	WHILTON STW	WHITLINGHAM TROWSE STW	WICKFORD STW
2	Classification of treatment works	text	Secondary Activated Sludge	Secondary Biological	Tertiary B2	Tertiary A2	Tertiary A2	Secondary Activated Sludge	Secondary Activated Sludge	Tertiary B2	Tertiary A2	Tertiary A1
3	Population equivalent of total load received	000s	203.95	77.35	38.56	54.03	31.94	158.50	141.86	33.51	328.90	43.17
4	Suspended solids consent	mg/l	150	120	90	45	50	95	80	24	40	45
5	BOD <sub>5</sub> consent	mg/l	25	25	25	25	25	25	25	12	20	22
6	Ammonia consent	mg/l	-	-	-	-	16	-	20	3	7	10
7	Phosphorus consent	mg/l	-	-	1	-	2	-	-	2	1	-
8	UV consent	mW/s/cm <sup>2</sup>	-	-	-	30	-	-	-	-	-	30
9	Load received by STW	kgBOD <sub>5</sub> /d	12,237	4,641	2,314	3,242	1,916	9,510	8,512	2,011	19,734	2,590
10	Flow passed to full treatment	m <sup>3</sup> /d	57,066	18,003	10,505	17,961	4,062	30,664	13,700	5,391	74,535	10,685

#### Sewage treatment works - Functional expenditure

11	Service charges	£000s	32	19	19	33	19	32	19	19	57	19
12	Estimated terminal pumping expenditure	£000s	376	15	-	4	12	149	-	-	9	-
13	Other direct expenditure	£000s	2,503	53	342	515	435	1,690	1,253	219	2,405	518
14	Total direct expenditure	£000s	2,911	87	361	552	466	1,871	1,272	238	2,471	537
15	General and support expenditure	£000s	204	6	30	46	40	165	108	20	216	45
16	Functional expenditure	£000s	3,115	93	391	598	506	2,036	1,380	258	2,687	582

Line description		Units	Large STW51	Total STW
<b>Sewage treatment works - Explanatory variables</b>				
1	Works name (existing works)	text	WITHAM STW	0
2	Classification of treatment works	text	Secondary Activated Sludge	0
3	Population equivalent of total load received	000s	36.78	0.00
4	Suspended solids consent	mg/l	40	-
5	BOD <sub>5</sub> consent	mg/l	20	-
6	Ammonia consent	mg/l	10	-
7	Phosphorus consent	mg/l	-	-
8	UV consent	mW/s/cm <sup>2</sup>	-	-
9	Load received by STW	kgBOD <sub>5</sub> /d	2,207	-
10	Flow passed to full treatment	m <sup>3</sup> /d	5,500	-
<b>Sewage treatment works - Functional expenditure</b>				
11	Service charges	£000s	19	1,269
12	Estimated terminal pumping expenditure	£000s	27	3,110
13	Other direct expenditure	£000s	278	41,199
14	Total direct expenditure	£000s	324	45,578
15	General and support expenditure	£000s	27	3,898
16	Functional expenditure	£000s	351	49,476

### **Works name, classification of treatment works and population equivalent of total load received (7B.1- 7B.3)**

**1** We have calculated the population equivalent and the loads on a basis consistent with how we used to report table 17B in the June Return. The numbers exclude imported effluents (tankered loads from septic tanks and cesspools) and include non-resident population. The number of works has increased since 2020/21. There were two works we identified as marginally under the large works threshold last year which have subsequently moved above it in 2021/22. These works are Harwich and Dovercourt Water Recycling Centre (WRC) and Market Harborough WRC.

### **Large STW Consents (7B.4-8)**

**2** We maintain an internal system (PACE) which summarises details of the permit limits relating to our STW discharges. These are the limits which are detailed in the Environmental Permits issued to us by the Environment Agency.

### **BOD5 Consent (7B.5)**

**3** For a number of water recycling centres the UWWTD BOD limit of 25mg/l is tighter than the normal BOD limit specified in the Environmental Permit. In these situations we have therefore reported the UWWTD BOD limit as we believe this is more appropriate to use for comparative efficiency purposes. This approach is consistent with that taken when the data used to be provided as part of the June Return.

### **Load received by STW (7B.9)**

**4** The total load received at large works has risen by almost 130,000pe in 2021/22. This equates to a less than 3 per cent increase in treated load.

### **Flow passed to full treatment (7B.10)**

**5** The numbers reported for many of our STW have changed noticeably when compared with those reported in 2020/21. We believe this is mainly due to the natural variance associated with different rainfall patterns from year to year. In our region the winter of 2021/22 was drier than that of 2020/21.

**6** There is an ongoing fault with the flow meter at Thetford WRC. An urgent job has been raised for replacement of the sensor, including an upgrade to the transmitter and this work will be completed in due course. As a result, however, the flow reported for the WRC is much lower than for 2020/21. At Huntingdon WRC there was a fault with the signal from the telemetry outstation which receives flow meter data during the period April to October 2021. This issue has now been resolved.

### **Service charges (7B.11)**

**7** Service charges in total for large works agrees to table 4N sewage treatment (line 4N.8).



**Table 7C - Wastewater network+ - Sewer and volume data for the 12 months ended 31st March 2022**

	Line description	Units	Input
	<b>Wastewater network</b>		
1	Connectable properties served by s101A schemes completed in the report year	nr	0
2	Number of s101A schemes completed in the report year	nr	0
3	Total pumping station capacity	kW	120,962
4	Number of network pumping stations	nr	6,257
5	Total number of sewer blockages	nr	42,844
6	Total number of gravity sewer collapses	nr	287
7	Total number of sewer rising main bursts	nr	132
8	Number of combined sewer overflows	nr	1,251
9	Number of emergency overflows	nr	895
10	Number of settled storm overflows	nr	371
11	Sewer age profile (constructed post 2001)	km	2,106
12	Volume of trade effluent	MI/yr	19,768.09
13	Volume of wastewater receiving treatment at sewage treatment works	MI/yr	686,209.12
14	Length of gravity sewers rehabilitated	km	33
15	Length of rising mains replaced or structurally refurbished	km	37
16	Length of foul (only) public sewers	km	19,207
17	Length of surface water (only) public sewers	km	11,650
18	Length of combined public sewers	km	10,319
19	Length of rising mains	km	4,655
20	Length of other wastewater network pipework	km	6
21	Total length of "legacy" public sewers as at 31 March	km	45,837
22	Length of formerly private sewers and lateral drains (s105A sewers)	km	31,200

**s101A Schemes completed in the report year (7C.1 and 7C.2)**

- 1** There have been no s101A schemes delivered within the first two years of AMP7.

**Capacity and number of network pumping stations (7C.3 and 7C.4)**

- 2** The number of pumps, rated power for each pump, location and asset status have been used where this information was held in corporate databases. The rated power of the remaining pumps, where data was not currently centrally held, was estimated through extrapolation based on site annual energy consumption (and pump hours run where available). Where there is no data available on a pump an estimated 2.5kW has been applied.

**3** The number of sites was calculated based on this more granular pump-specific asset data. As in previous years, inlet pumping stations sited on water recycling centres have been excluded because they have been considered to be inter-stage pumping stations.

#### **Total number of sewer blockages (7C.5)**

**4** The total number of blockages has increased compared to 2020/21. In 2021/22 we had 42,844 blockages compared to 40,959 in 2020/21. This is predominantly due to an increase in the number of public sewer blockages (+1,689), rather than an increase in the blockages numbers on sewers that were previously described as transferred sewers (+196).

**5** We continue to focus on proactive measures to prevent blockages through planned preventative maintenance, with better analytical techniques being used to more effectively identify blockage hotspots and ensuring sewers that are more likely to have blockages are jetted more frequently.

#### **Total number of sewer rising main bursts / collapses (7C.6 and 7C.7)**

**6** There were 287 reactive sewer collapses reported in 2021/22. This is a slight decrease compared to 2020/21 when we reported 296, this was due to prolonged wet weather causing an increase in our numbers.

**7** There were 132 reactive burst rising mains reported in 2021/22. This is a decrease compared to 2020/21 when we reported 173, this was due to prolonged wet weather causing an increase in our numbers. We've seen a decrease this year compared to last year, in part this could be attributed to a focus of capital investment on repeat burst rising mains. In addition it has been a drier year, which has put less pressure on our network. In 2019/20 we reported 138 reactive burst rising mains which is more in line with our reported number this year.

#### **Numbers of overflows (7C.8 - 7C.10)**

**8** Figures for 2021/22 are taken from source databases at the end of the reporting year.

**9** The number of combined sewer overflows has marginally increased this year. There has also been a minor change to the number of settled storm discharges.

#### **Sewer age profile (constructed post 2001) (7C.11)**

**10** During 2021/22, the modelled "year laid" for sewers has been reassessed in preparation for PR24; this has resulted in some changes to the "year laid" dates. The reporting method has also changed to use more modern approaches, utilising Python programming language and Databricks web platform to create a more consistent, systematic and transparent approach. The best estimated "year laid" of every mapped sewer has been maintained. Our approach is iterative based on our corporate systems, historical development polygons, deed dates (for non-infra sites to sub-catchments) and the length weighted median year for each material.

**11** These lengths have decreased when compared to the previous year, with 85km less in this age band when compared to 2020/21. This is due to the use of the more accurate modelled "year laid" data and a more accurate reporting approach.

**12** We have assumed that the age profile of modelled lengths of section 24 and transferred sewers is spread across the age bands and have used a weighted average method.

#### **Volume of trade effluent (7C.12)**

**13** The volume of trade effluent is lower than 2020/21 due to continuing volatility in activity among business customers resulting from the ongoing impact of the Covid-19 pandemic.

### **Volume of wastewater receiving treatment at sewage treatment works (7C.13)**

**14** For smaller WRCs (serving less than 250 population equivalent) an estimate has been made of the flow discharged per year. The numbers for this line were then produced by combining the separate values for the measured flows from larger WRCs with this estimated flow from the smaller WRCs.

**15** The definition for this line within the RAG 4.10 Guidelines requires us to reflect the flow data reported to the EA in the annual OMA report. Measured flow data is reported to the EA on a calendar year basis consequently data for the 2021 calendar year has been used for this line.

### **Length of gravity sewers rehabilitated (7C.14)**

**16** In 2021/22 33km of gravity sewer was proactively replaced or relined. This is a significant increase in length based on 2020/21, but similar to the lengths replaced or relined in 2019/20.

**17** As with 2020/21 we have continued our focus on large diameter gravity sewers and sewers with high levels of infiltration. However, this year we also proactively replaced or relined a larger number of smaller diameter sewers, when they were identified whilst carrying out emergency repairs on adjoining sewers that had already failed.

### **Length of rising mains replaced or structurally refurbished (7C.15)**

**18** In 2021/22 37km of rising mains was proactively replaced or refurbished.

**19** This is a significant increase in length based on previous years and reflects a continuation in our change in approach to mitigate rising mains to extend asset life, rather than a strategy based solely on rising main replacement.

**20** A pressure monitor is installed on a rising main to track the changes in pressure experienced by the rising main during the pump start/stops cycle and this information is analysed alongside site survey data to produce a transient pressure report. This report will then make recommendations about what interventions can be made to increase the life of the asset.

**21** Capital interventions include (but are not limited to) installation of air valves along the rising main length and VSDs (variable speed drives) at the pumping station to reduce pressure spikes. Fifteen rising mains (totalling 33km length) benefitted from these types of interventions in 2021/22. These rising mains reflect our interpretation of the term 'structurally refurbished'.

**22** Rising main replacement schemes are completed when mitigation is not possible or cost effective, or if further burst occur post mitigation. Seven rising mains were fully or partially relined or replaced in 2021/22 (totalling 3km in length).

**23** The remaining length (1km) is the result of the diversion of existing Anglian Water rising mains as a result of development and highway requests.

### **Length of wastewater network pipework (7C.16-7C.21)**

**24** Our modelled estimate of ex-Section 24 sewer lengths have been included in our reported sewer lengths since 2002/03 and this has not changed this year. Our modelled length includes an assessment of the surface water sewers and we have assumed, given the typical sewer practice at the time, the remainder are combined sewers.

**25** Lines 16-19 have all remained fairly stable for 2021/22, with rising mains seeing the largest increase of 20km from 2020/21.

**26** In line 20 we have included a length of 6.325km which is for a sludge main.

**Length of formerly private sewers and lateral drains (s.105A sewers) (7C.22)**

**27** We are reporting our total estimated length of modelled transferred sewers. These are 26,700km of laterals and 4,500km of private drains. This estimate is based on the findings of a number of studies we undertook prior to 2011.

**Table 7D - Wastewater network+ - Sewage treatment works data for the 12 months ended 31st March 2022**

Line description	Units	Treatment categories							
		Primary	Secondary		Tertiary				Total
			Activated Sludge	Biological	A1	A2	B1	B2	

	Load received at sewage treatment works									
1	Load received by STWs in size band 1	kg BOD <sub>5</sub> /day	21	372	1,565	219	9	397	0	2,583
2	Load received by STWs in size band 2	kg BOD <sub>5</sub> /day	0	398	1,427	264	22	717	18	2,846
3	Load received by STWs in size band 3	kg BOD <sub>5</sub> /day	0	1,929	6,562	1,475	263	6,623	650	17,502
4	Load received by STWs in size band 4	kg BOD <sub>5</sub> /day	0	9,417	18,934	4,663	2,750	15,276	9,843	60,883
5	Load received by STWs in size band 5	kg BOD <sub>5</sub> /day	0	9,746	7,222	5,762	13,393	3,286	26,936	66,345
6	Load received by STWs above size band 5	kg BOD <sub>5</sub> /day	0	110,957	9,884	18,166	123,723	0	25,490	288,220
7	Total load received	kg BOD <sub>5</sub> /day	21	132,819	45,594	30,549	140,160	26,299	62,937	438,379
8	Load received from trade effluent customers at treatment works	kg BOD <sub>5</sub> /day	-	-	-	-	-	-	-	42,567

Treatment works consents				
Phosphorus				
<=0.5mg/l	>0.5 to <=1mg/l	>1mg/l	No permit	Total

	Load received at sewage treatment works					
1	Load received by STWs in size band 1	0	0	0	2,582	2,582
2	Load received by STWs in size band 2	0	70	57	2,703	2,830
3	Load received by STWs in size band 3	119	2,315	849	14,009	17,292
4	Load received by STWs in size band 4	452	11,455	6,417	41,701	60,025
5	Load received by STWs in size band 5	758	10,491	33,034	22,062	66,345
6	Load received by STWs above size band 5	0	117,202	36,650	134,367	288,219
7	Total load received	1,329	141,533	77,007	217,424	437,293

Treatment work consents					
BOD <sub>5</sub>					
<=7mg/l	>7 to <=10mg/l	>10 to <=20mg/l	>20mg/l	No permit	Total

Load received at sewage treatment works						
Load received by STWs in size band 1	0	0	186	208	2188	2582
Load received by STWs in size band 2	0	22	865	1509	434	2830
Load received by STWs in size band 3	80	539	8315	8291	67	17292
Load received by STWs in size band 4	198	10582	28301	20662	282	60025
Load received by STWs in size band 5	0	9596	31665	25085	0	66346
Load received by STWs above size band 5	0	43744	127987	116489	0	288220
Total load received	278	64483	197319	172244	2971	437295

Treatment work consents					
Ammonia					
<=1mg/l	>1 to <=3mg/l	>3 to <=10mg/l	>10mg/l	No permit	Total

Load received at sewage treatment works						
Load received by STWs in size band 1	0	0	77	195	2310	2582
Load received by STWs in size band 2	0	22	265	600	1943	2830
Load received by STWs in size band 3	0	510	4887	5459	6437	17293
Load received by STWs in size band 4	1093	8257	28018	10548	12109	60025
Load received by STWs in size band 5	2565	7800	33013	10788	12180	66346
Load received by STWs above size band 5	5720	60491	118356	42746	60907	288220
Total load received	9378	77080	184616	70336	95886	437296

Line description	Units	Treatment categories							
		Primary	Secondary		Tertiary				Total
			Activated Sludge	Biological	A1	A2	B1	B2	

Number of sewage treatment works										
9	STWs in size band 1	nr	6	50	294	27	1	47	0	425
10	STWs in size band 2	nr	0	17	62	11	1	32	1	124
11	STWs in size band 3	nr	0	27	96	24	3	100	8	258
12	STWs in size band 4	nr	0	28	70	15	7	58	30	208
13	STWs in size band 5	nr	0	9	8	5	13	3	26	64
14	STWs above size band 5	nr	0	17	3	3	21	0	7	51
15	Total number of works	nr	6	148	533	85	46	240	72	1,130

Treatment works consents				
Phosphorus				
<=0.5mg/l	>0.5 to <=1mg/l	>1mg/l	No permit	Total

Number of sewage treatment works						
9	STWs in size band 1	0	0	0	423	423
10	STWs in size band 2	0	3	3	117	123
11	STWs in size band 3	2	28	11	214	255
12	STWs in size band 4	1	37	17	150	205
13	STWs in size band 5	1	10	34	19	64
14	STWs above size band 5	0	12	15	24	51
15	Total number of works	4	90	80	947	1,121

Treatment work consents					
BOD <sub>5</sub>					
<=7mg/l	>7 to <=10mg/l	>10 to <=20mg/l	>20mg/l	No permit	Total

	Number of sewage treatment works						
9	STWs in size band 1	0	0	15	21	387	423
10	STWs in size band 2	0	1	37	62	23	123
11	STWs in size band 3	1	8	120	124	2	255
12	STWs in size band 4	1	31	102	70	1	205
13	STWs in size band 5	0	9	31	24	0	64
14	STWs above size band 5	0	9	18	24	0	51
15	Total number of works	2	58	323	325	413	1121

Treatment work consents					
Ammonia					
<=1mg/l	>1 to <=3mg/l	>3 to <=10mg/l	>10mg/l	No permit	Total

	Number of sewage treatment works						
9	STWs in size band 1	0	0	6	19	398	423
10	STWs in size band 2	0	1	12	26	84	123
11	STWs in size band 3	0	7	64	79	105	255
12	STWs in size band 4	3	25	94	38	45	205
13	STWs in size band 5	3	7	32	12	10	64
14	STWs above size band 5	1	12	17	8	13	51
15	Total number of works	7	52	225	182	655	1121



	Population equivalent		
16	Current population equivalent served by STWs	000s	7152.149
17	Current population equivalent served by filter bed or activated sludge STWs with tightened/new P consents	000s	140.259
18	Current population equivalent served by STWs with tightened/new N consents	000s	0.000
19	Current population equivalent served by STWs with tightened/new sanitary parameter consents	000s	3.830
20	Current population equivalent served by STWs with tightened/new UV consents	000s	0.000
21	Population equivalent treatment capacity enhancement	000s	0.000
22	Current population equivalent served by STW with tightened / new consents for chemicals	000s	0.000
23	Cumulative shortfall in FFT addressed by WINEP / NEP schemes to increase STW capacity	l/s	0.000
24	Additional storm tank capacity provided at STWs	m3	11908.690
25	Additional volume of network storage at CSOs etc to reduce spill frequency	m3	0.000

### Loads received (7D.1-7D.8)

**1** The loads reported in this table provide a consistent record which aligns with how we historically reported tables 17C and 17D in the June Return.

**2** The size banding of the individual Water Recycling Centres (WRCs) has been determined using the total resident population, which is comprised of domestic population, tankered waste (from septic tanks and cesspools) and trade effluent loads. Non-resident population has not been included when determining the size banding of the works, in line with the guidance.

**3** The treatment types at our WRCs are assumed to be the same as prior years, unless evidence from operations has been provided. There have been no changes to treatment types in 2021/22.

**4** The loads received volumes in lines 7D.1-7D.7 include non-resident population, but exclude the tankered imports from septic tanks and cesspools. This is consistent with our approach to reporting historically and in line with previous Ofwat guidance JR08/004 and RAG 4.10. In 2021/22, Covid-19 restrictions still had some impact on the leisure and hospitality sector within the region, and so whilst we have increased the number of non-resident population compared to 2020/21, it is still lower than the pre-pandemic levels. We expect to see more normal levels of non-resident load in 2022/23. Domestic population and trade load distributions were not adjusted, as domestic customers were already assigned to their home works, and trade loads are based on what we have billed in the period, so would cover any reduction in outputs caused by temporary closure of businesses.

**5** The numbers in these lines include loads from nine additional WRCs, which belong to other water companies but to which our customers drain and we receive a charge for the treatment of this load. These WRCs are summarised below:

Works Name	Shortcode	APR-22 PE	Ownership	Treatment Type	Load kg/BOD/day
ALKBOROUGH STW	ALKBST	589.69	Severn Trent	SCB	35.38
BRENTWOOD NAG HEAD LN STW THAM	BRWDST	6313.51	Thames	TB1	378.81
CHEVELEY PARK STW	CHEVST	21.39	Private	PRM	1.28

STANSTED MOUNTFICHET STW	STMFST	2334.4	Thames	TB1	140.06
STEVENAGE STW	STEVST	1559.02	Thames	TA2	93.54
GT WHELNETHAM-STANFLD RD STW	GWESST	7.18	Private	SCB	0.43
HALSE STW	HATWST	1308.03	Thames	SCB	78.48
SEVERN TRENT STW	SWTWST	271.56	Severn Trent	SCB	16.29
WINGRAVE STW	WITWST	5671.27	Thames	SCB	340.28

### **Load received from trade effluent customers at treatment works (7D.8)**

**6** The population equivalent (PE) emanating from trade effluent customers has increased nominally by 616PE (<0.1 per cent increase) compared to 2020/21. We attribute this small increase to a lag effect of Covid-19 restrictions leading to a slow recovery in normal operations.

### **Number of works (7D.9-7D.15)**

**7** Consent information is provided by an extract from our PACE database, which is a live document and holds all the consent limits for the WRCs the company operate. As we do not have the consent information for the nine WRCs which are not in our control, we have not assigned these loads to any consent banding, and so they are excluded from the consents tables.

### **Current population equivalent served by filter bed or activated sludge STWs with tightened/new P consents (7D.17)**

**8** Eight STWs had schemes delivered to meet new/tightened P consents in 2021/22. They were:

- Halstead STW
- Stanion STW
- Dunstable STW
- Winslow STW
- Buckingham (Maids M) STW
- Uttons Drove STW
- Tiptree STW
- Rushton STW

**9** In addition we delivered one effluent diversion (pump away) scheme as an alternative to treatment. This is not reported in the Population Equivalent figures here.

### **Current population equivalent served by STWs with tightened/new N consents (7D.18)**

**10** We have no new N permit conditions scheduled in the AMP7 WINEP.

### **Current population equivalent served by STWs with tightened/new sanitary parameter consents (7D.19)**

**11** We have delivered two UIMP1 schemes that have resulted in tightened or new BOD permit consent limits in 2021/22. They were for Bardney STW and Stibbington STW.

**Current population equivalent served by STWs with tightened/new UV consents (7D.20)**

**12** There were no schemes delivered during the reporting year which involved the tightening, or introduction, of new or tightened consent conditions for microbiological parameters to meet the requirements of the EU Shellfish Waters or revised Bathing Water Directives.

**Population equivalent treatment capacity enhancement (7D.21)**

**13** In 2021/2022 there was no additional population equivalent capacity added. Schemes and progressing through design and construction however, no growth schemes have been completed within this year of the AMP.

**Current population equivalent served by STW with tightened / new consents for chemicals (7D.22)**

**14** There are no new or tightened chemicals consent obligations in year two of the WINEP (2021/22).

**Cumulative shortfall in FFT addressed by WINEP / NEP schemes to increase STW capacity (7D.23)**

**15** There are no FFT obligations in year two of the WINEP (2021/22).

**Additional storm tank capacity provided at STWs (7D.24)**

**16** We have delivered 66 storm tank obligations in 2021/22. These are all early delivery schemes.

**Table 7E - Wastewater network+ - Energy consumption and other data for the 12 months ended 31st March 2022**

	Line description	Units	Input
<b>Other</b>			
1	Total sewerage catchment area	km <sup>2</sup>	4,221
2	Designated coastal bathing waters	nr	48
3	Number of intermittent discharge sites with event duration monitoring	nr	298
4	Number of monitors for flow monitoring at STWs	nr	38
5	Number of odour related complaints	nr	3,335
<b>Energy consumption</b>			
6	Energy consumption - sewage collection	MWh	102772.382
7	Energy consumption - sewage treatment	MWh	238641.339
8	Energy consumption - wastewater network +	MWh	341413.721

#### **Total sewerage catchment area (7E.1)**

**1** The aggregate sewer catchment area is unchanged on the number reported in 2021. It is the total of all the areas of the ~1,100 Water Recycling Centres across the Anglian Water region.

#### **Designated bathing waters (7E.2)**

**2** The figure represents the number of designated bathing waters in our region in 2021, which is 48 (2020:48). The designation of new bathing waters is usually undertaken by Local Authorities. As part of our 'Get River Positive' campaign, we are working with local stakeholders to support the designation of bathing waters in appropriate locations.

#### **Number of intermittent discharge sites with event duration monitoring (EDM) (7E.3)**

**3** Event Duration Monitors (EDM) were installed at 298 locations. This enabled 331 obligations in the Environment Agency's Water Industry National Environment Programme (WINEP) to be met. At some locations one, or more, EDMs were able to be used to meet multiple obligations.

#### **Number of monitors for flow monitoring at STWs (7E.4)**

**4** We have delivered 38 FFT flow monitoring obligations in 2021/22. This is two more than we anticipated in our response to Ofwats s203 notice submitted in March 2022.

#### **Number of odour related complaints (7E.5)**

**5** The number of odour related complaints for 2021/22 is 3,335. This is similar to the figure reported in 2020/21.

### Energy consumption - sewage collection, sewage treatment and wastewater network plus (7E.6-8)

**6** The total energy consumption across both lines was 341,414 MWh. The equivalent number for 2020/21 was 350,271 MWh so there has been a reduction of -8,857 MWh, or -2.5 per cent. For sewage collection there has been a reduction of -7,743 MWh (-7.0 per cent) and for sewage treatment the reduction is -1,111 MWh (-0.5 per cent).

**7** The main components of this reduction are the -5,425 MWh reduction in grid electricity used on the sites and the -4,534 MWh reduction in CHP-generated electricity used for wastewater network plus. An increase in electricity consumption of 2,407 MWh was observed on sewage treatment sites which are not shared with the bioresources price control. The largest component of the reduction in grid electricity was the -7,832 MWh reduction used for sewage collection. Winter 2021/22 was much drier than winter 2020/21, which was an unusually wet winter, so less electricity was required in collecting wastewater and pumping it to sewage treatment works.

**8** A number of assumptions have been made in calculating the water recycling energy consumption data.

- For the whole of the water recycling function, we have applied a financial split from regulatory accounts between bioresources and water recycling network plus for electricity consumption. This financial split is based upon assessments of proportional use by different Ofwat business units made by operational experts.
- We have included energy from renewable sources generated and used on site, including CHP (combined heat and power), wind and solar.
- Grid electricity and fuel (oil and natural gas) used in offices has been included and split equally between water and water recycling.
- Fuel oil is not recorded on our corporate systems against Ofwat's business units and therefore the same split used for electricity has been assumed for each fuel type with the exception of gas oil delivered to water recycling sites.
- We have assumed a 35 per cent thermal efficiency for natural gas consumption in converting to energy output (boilers and CHP).
- An assumption has been made that 90 per cent of gas oil delivered to water recycling sites is used for CHP boilers so 10 per cent has been allocated to the rest of water recycling in line with the approach taken by our management accountants.
- Transport (claimed mileage and fleet fuel purchased on fuel cards) is not recorded in our corporate systems against Ofwat's business units and therefore we have split the total 50/50 between water and water recycling and then assumed that they split in the same proportions as electricity between the business units. This is with the exception of RES biosolids haulage fleet which has been allocated entirely to bioresources.
- Transport for company cars is collected as mileage. We have converted mileage into kWh through using BEIS' greenhouse gas reporting condensed conversion factors for 2021.
- For electric vehicles we have made the assumption that the mileage claimed relates to charging at home, rather than using the charging points at the offices as most office-based employees have been working from home during the Covid-19 pandemic. We believe this assumption to be safe and not capable of skewing the overall figures since (i) electric car consumption totals just 28,990 kWh across the whole of Anglian Water and (ii) wherever cars are charged, the driver may be charging for domestic and commuting miles (which cannot be claimed) as well as for business. We are looking to improve our processes in order to better capture consumption by electric cars charged at home and AW infrastructure.

## Table 7F - Wastewater network+ - WINEP phosphorus removal scheme costs and cost drivers

**1** Table 7F has not been published in this document. The published version of the Ofwat tables can be viewed through the [Our reports](#) section on our website.

**2** Actual capital expenditure costs are included for the years 2019/20, 2020/21 and 2021/22. Cost data for 2019/20 and 2020/21 has been inflated to 2021/22 prices using CPIH as per Ofwat's guidance. Schemes already released to our supply chain forecast costs are based on our delivery plans and status of design work as of March 2022. This includes some projects where we are adopting a least regrets approach involving a phased delivery strategy, delivering the chemical dosing first before monitoring performance and using the observed sample data to inform a later decision on the need for tertiary solids removal. For schemes yet to be released, the forecast costs are based on costs from our investment planning tool C55 and have been adjusted based on an anticipated efficiency level derived from those projects that are in the delivery phase as well as being inflated using CPIH to the common 2021/22 price time basis for APR22.

**3** Actual operational expenditure costs for schemes released to our supply chain are based on estimates calculated at design stage. For schemes still in the planning stage the estimates are based on models within our planning tool C55 and have been inflated using CPIH as above for capex.

**4** The nature of the programme means that the schemes are at different stages in our investment process with some more advanced than others, we therefore expect movements in the forward looking costs as the schemes progress.

**5** Ofwat have provided ahead of APR22 their view of the enhancement allowance for the P removal programme within the CMA's redetermination. When indexed using CPIH to 2021/22 price time basis and compared with the forecasts in table 7F we believe this shows an AMP7 totex efficiency of around 17.6 per cent achieved to date. This may increase or decrease in APR23 as more projects complete the design phase. However, that efficiency is not representative of all programme areas across the price control and does not represent our view of a forecast of the overall totex sharing calculation since there are other programmes not covered by the APR tables forecasting above the PR19 allowances.

**6** Delivery year is based on current programme and subject to change.

**7** As per query log received 9<sup>th</sup> June we have only populated cost driver data for those schemes that are operationally complete and signed off by the Environment Agency, although please note this leads to a data validation flag in column AC. The column for Cost driver 1, site population equivalent data is from 2022 data to align with table 7B, we have used this as a more current view of this data than was used during PR19. The column for Cost driver 4 has no title but shows the proposed area in hectares for wetland solutions.

### Scheme development / optimisation

**8** The AMP7 Phosphorous removal programme is significantly larger than previous AMP programmes and seeks in many places to achieve levels of phosphorus removal never before seen at scale in the UK. Following the AMP6 UKWIR National P Trials a new Technically Achievable Limit (TAL) was agreed at 0.25mg/l. Cost data from the National P Trials were used to inform the PR19 totex forecasts for schemes with the tightest consents. For schemes above the previous TAL (1mg/l) were inputted into the business plan using cost models built up of cost data from schemes previously completed.

**9** This programme's objective is to improve the Ecological Status of waterbodies in our region under the Water Framework Directive classification by reducing levels of Phosphorus in treated water discharged into those waterbodies. By the end of AMP7 approx. 1,650km of watercourses will have been protected or improved along with 4,100 hectares of Designated Site (HD/RAMSAR/SSSI).

**10** During PR19 business planning, given the limited time available for detailed feasibility work at a site level, a matrix was developed to determine high level solutions for each of the 182 WINEP phosphorous obligations.

### Activated Sludge / Oxidation Ditch

Existing P permit		New P permit		
No tertiary	Existing tertiary (solids removal)	Existing tertiary (solids removal)	No tertiary solids removal	New Permit limit
New technology - Mecana	New technology - Mecana	New technology - Mecana	New technology - Mecana	0.00
				0.25
New technology - Dynasand	Optimise, consider use of stretch targets	Install chemical removal - optimise tertiary process and dosing, consider use of stretch targets	New technology - Dynasand	0.35
Optimise, consider use of stretch targets			Chemical dosing, optimise - no tertiary	0.50
				0.75
				1.00
				1.25
				1.50

### Tracking Filters

Existing P permit			New P permit			
Existing Tertiary (solids removal)	Less than 30mg/l TSS current performance or permit limit	Greater than 30mg/l TSS current performance or permit limit	Existing Tertiary	Less than 30mg/l TSS current performance or permit limit	Greater than 30mg/l TSS current performance or permit limit	New Permit limit
New technology - Mecana	New technology - Mecana	New technology - Mecana	New technology - Mecana	New technology - Mecana	New technology - Mecana	0.00
						0.25
New technology - Dynasand	New technology - Dynasand	New technology - Dynasand	New technology - Dynasand	New technology - Dynasand	New technology - Dynasand	0.35
Optimise existing tertiary and chemical dosing. Consider use of stretch targets	New technology - Dynasand	New technology - Dynasand	Install chemical dosing and optimise	New technology - Dynasand	New technology - Dynasand	0.50
	Optimise existing tertiary and chemical dosing. Consider use of stretch targets			Install checmical dosing		Install chemical dosing
		1.00				
		1.25				
		1.50				

**11** As an additional level of challenge prior to business plan submission each project was discussed with the site manager to ensure assets that already existed on site and were serviceable were not included in the requested totex. For sites with the tightest consents a check was also carried out to determine whether any existing assets had a process guarantee for the new limit, where the assets did not, technology with a process guarantee identified from the UKWIR National P Trials was included in the cost build up.

**12** Once in the delivery phase in AMP7 the schemes are taken through an initial investigation phase which includes site visits and increased sampling and then a Risk, Opportunity and Value (ROV) process to ensure the best value solution is selected for each site.

**13** ROV provides a framework to collaboratively make best value totex investment decisions through:

- Fully understanding problems at a service/risk level
- Establishing root causes
- Creatively coming up with lots of options
- Making best value choices, balancing costs and benefits
- Challenging for greater value across the Six Capitals
- Identifying Lessons Learned during and after project completion, and
- Reviewing the benefits achieved

**14** Solution capital and operational expenditure are refined after the best value solution has been selected and agreed with all stakeholders.

### Delivery strategy

**15** Through collaborative planning sessions with key stakeholders a number of efficiency strategies were developed and agreed.

#	Efficiency Reason	Comment	Applicability
<b>Developed best practice from AMP6:</b>			
A	Phased minimal build approach to solutions delivery	Implementation of chemical dosing solution where performance data supports, with subsequent monitoring to inform whether tertiary solids removal is necessary.	Schemes >0.5 mg/l P limit
B	Adoption of Standard Products and application of Minimum Asset Standards	Working to Minimum Asset Standards and adoption of standard product based solutions enables bulk purchase savings and minimal design effort.	All P Schemes
C	Optimised Team Structure	Team structured to deliver a standard product based portfolio by using a production line approach to scheme delivery.	All P Schemes
D	Offsite build and testing	Reduced time on site and reduced rework costs.	All P Schemes
E	Pump Away solution	Divert flows from smaller Water Recycling Centres to larger ones via new pipelines. Unable to be considered during PR19 due to time required to negotiate consent changes.	All P Schemes
<b>AMP7 Initiatives:</b>			
F	Delivery Optimisation	Improved delivery management process.	All P Schemes
G	Programme Optimisation	Delivery of schemes concurrently with other works on site to minimise resource requirements. Note at Draft Determination our requested totex was reduced by £37.6m in anticipation of programme synergies across large programmes.	Linked P Schemes
H	Streamlined Governance	Optimised governance process with reduced deliverables for standard schemes.	Non-linked P Schemes
I	Least regret/ Phased approach to solutions delivery	Implementation of chemical dosing solution where performance data supports, with subsequent monitoring to inform whether tertiary solids removal is necessary and if necessary optimise type of tertiary treatment required.	Schemes <0.5 mg/l P limit
<b>AMP7 Initiatives yet to be realised:</b>			
J	Alternative Technologies and Nature Based Solutions	Alternative Technologies such as Algae and Wetlands may offer totex efficiencies.	All P schemes



### Schemes completed and benefits realised to date

**16** Currently 15 schemes have been completed and signed off by the EA. Of those 7 are in advance of the original obligation date set out in WINEP. These schemes provide improvement or protection to 144km of river length including chalk streams and 138 hectares of SSSI.

**17** Rougham WRC (line 7F.131) has negative Opex as through investigation it was decided to close the site and pump the flows to a neighbouring WRC. This produced a saving of Opex due to a reduction in power and discharge consent fees. Aylsham and Belaugh are shown as zero capex since the only activity to achieve the obligation was a permit change as expected in the business plan.

### Wetland schemes and Nature Based Solutions

**18** After the successes of our new wetland at Ingoldisthorpe, at business planning a further 34 schemes were identified for wetland investigations. Through enhanced analysis of the portfolio 3 additional sites were identified as suitable for wetland investigations. One of the original sites Anderby WRC (line 7F.182), was closed and pumped away to a neighbouring WRC at the end of AMP6 (between submission of the PR19 business plan and the end of the AMP), so has been removed from the WINEP programme – this has been shown in table 7F as zero cost. There are currently 36 sites still being investigated for wetlands. In the table the column marked 'Cost Driver 4' would be used to populate the planned area of these wetlands but none have been completed to date.

**19** We recognise the total expenditure between Table 7F and Table 4M (line 28) do not align as required by the APR validation rules, this is due to:

1. Costs accrued at capital programme level, such as gainshare and alliance set up costs, which are reported in Table 4M but will subsequently be allocated to project level codes
2. AMP6 carryover expenditure reported in Table 4M - we have excluded these projects from table 7F as they were not funded within the PR19 P Removal cost assessment model
3. WINEP investigations expenditure reported in 7F, but reported in 4M.37 "Investigations" rather than 4M.28 "Phosphorus removal" - this includes funding for wetland investigations that were within the PR19 P Removal cost assessment model and we have therefore included in table 7F
4. Prior year costs from one project were determined not to be capital in nature and were therefore moved from capex to opex. This project has a net capital expenditure of £0 in 7F, but the movement out of capex is reported as a credit in 4M.28 since the movement of capex to opex occurred during financial year 2021/22.

**Table 8A - Bioresources sludge data for the 12 months ended 31st March 2022**

	Line description	Units	Total
1	Total sewage sludge produced, treated by incumbents	ttds/ year	150.9
2	Total sewage sludge produced, treated by 3 <sup>rd</sup> party sludge service provider	ttds/ year	0.5
3	Total sewage sludge produced	ttds/ year	151.4
4	Total sewage sludge produced from non-appointed liquid waste treatment	ttds/ year	3.1
5	Percentage of sludge produced and treated at a site of STW and STC co-location	%	25.94
6	Total sewage sludge disposed by incumbents	ttds/ year	72.8
7	Total sewage sludge disposed by 3rd party sludge service provider	ttds/ year	3.9
8	Total sewage sludge disposed	ttds/ year	76.7
9	Total measure of intersiting 'work' done by pipeline	ttds*km/year	25
10	Total measure of intersiting 'work' done by tanker	ttds*km/year	2,802
11	Total measure of intersiting 'work' done by truck	ttds*km/year	6,013
12	Total measure of intersiting 'work' done (all forms of transportation)	ttds*km/year	8,840
13	Total measure of of intersiting 'work' done by tanker (by volume transported)	m <sup>3</sup> *km/yr	88,125,276
14	Total measure of 'work' done in sludge disposal operations by pipeline	ttds*km/year	0
15	Total measure of 'work' done in sludge disposal operations by tanker	ttds*km/year	0
16	Total measure of 'work' done in sludge disposal operations by truck	ttds*km/year	4,642
17	Total measure of 'work' done in sludge disposal operations (all forms of transportation)	ttds*km/year	4,642
18	Total measure of 'work' done by tanker in sludge disposal operations (by volume transported)	m <sup>3</sup> *km/yr	318
19	Chemical P sludge as % of sludge produced at STWs	%	48.32

**1** Our sludge operations were significantly affected during the year because we had to take down our biggest STC, Great Billing, for cleaning and maintenance after approximately 14 years of operation. This resulted in its throughput halving and a corresponding increase in liming during the year.

#### **Total sludge produced, treated by incumbents (8A.1)**

**2** The number reported was calculated in the same way as in 2020/21. This is at the point of treatment (e.g. thickened blended sludge entering sludge treatment such as the advanced digestion process, conventional digester feed or liming), rather than the exact defined boundary of network plus and bioresources. Cross-boundary raw cake or liquid sludge imports are excluded in line with the line definition, although in 2021/22 there were none; in previous years we have imported sludge from Yorkshire Water Services (YWS) and Severn Trent Water (STW). We have also included sludge that was transferred to a land reclamation scheme during 2021/22.

**3** The amount of sludge treated rose slightly on the prior year but within normal annual variance. This was up 3.9 thousand tonnes dry solids (ttds), however, the previous year had been down 2.1 ttds, so this is a more moderate increase.

**4** At two water recycling centres (WRCs) we receive wastewater flows from customers of another water company. In common with previous practice, we have included the sludge arising from these flows in this line.

#### **Total sewage sludge produced, treated by 3rd party sludge service provider (8A.2)**

**5** We had 21.1 ttds of sludge limed at March, Whilton and Whitlingham WRCs by our framework liming contractor and successor. As these are managed contracts where we deliver raw cake and manage the transfer to land and recycling this does not count as a third party sludge service under the RAG.

**6** In 2021/22 0.5 ttds of raw sludge cake was transferred to YWS for treatment.

#### **Total sewage sludge produced from non-appointed liquid waste treatment (8A.4)**

**7** The only non-appointed liquid waste we have received in the reporting period is domestic (cess and septic tank) waste. We have calculated the sludge produced from this by taking the total wet tonnage recorded (465.4 thousand wet tonnes) and applying the average Total Suspended Solids (TSS) of randomly sampled loads at the receiving WRCs (6,600.72 mg/l, n=518) in a similar manner to 2020/21.

#### **Percentage of sludge produced and treated at a site of WRC and STC co-location (8A.5)**

**8** We have included the percentage of sludge produced on a co-located WRC and STC only when sludge treatment is permanently present (i.e. not raw dewatering sites). We have therefore counted our nine advanced AD sites and one conventional AD site (Chelmsford). Two of the operational lime plants (at March and Whilton WRC - operated for liming by managed contractors) have not been included as the WRCs have no dewatering and limed imported raw cake only. March and Whilton WRCs' own indigenous sludges are transported by tanker elsewhere for treatment. The third operational lime plant (at Whitlingham WRC) was operated by a managed contractor for a very short duration and processed a mixture of cake from elsewhere and some indigenous raw cake but disaggregation of this one-off operation is challenging and so has not been included to aid consistency.

**9** For 2021/22 a proration has been made for co-location at Great Billing STC, which is also our biggest WRC. This is because the STC was not operational for part of the reporting period and Great Billing's indigenous sludge was exported as raw cake for treatment (see commentary above) during the downtime. Proration has been calculated by dividing the PE-based indigenous sludge production (10,334.48 tds) for 2021/22 by the average STC (raw tds) throughput in the three preceding financial years, then multiplying by the reporting

year's STC (raw tds) throughput. This has left a reduced value included in the total for co-location of 4,718.08 tds. As a result the reported value has fallen from 28.53 per cent (unadjusted) to 25.94 per cent.

**10** As in previous submissions, we have adhered to the updated definition following clarification from Ofwat in 2019, namely:

**11** "The percentage of the sludge quantity reported in 8A.5 (previously 4R.25) that is produced at co-located sites. For the purposes of this definition: i) "co-located" includes sites where the STC is physically separate but the sludge is transferred from a wastewater treatment site by pipeline; and ii) STC means any site where sludge is treated to a standard such that it can be recycled to the environment or disposed of without any further treatment".

#### **Total sewage sludge, disposed by incumbents (8A.6)**

**12** The number reported was calculated in the same way as in 2020/21 in line with the definition, based on treated material hauled to agricultural land (but not necessarily spread), into composting (zero this year) and into land reclamation (zero this year, by ANH) as now defined. This number would include the treated equivalent of the raw sludge received from third parties; however, we did not receive any such imports in the reporting year.

**13** The amount of sludge disposed was significantly lower than the prior year (12.8 ttds decrease). This was due to the uncertainty caused by the EA reinterpretation of Farming Rules for Water and, as a result, the storing of large quantities of treated material rather than recycling to land as per normal.

#### **Total sludge disposed by third party sludge service provider (8A.7)**

**14** In 2021/22 we exported 3.4 ttds of raw sludge to an out-of-area third party land reclamation scheme and 0.5 ttds raw cake to YWS for treatment.

**15** We would also include here any amounts of sludge transferred to third parties for activated sludge or digester plant seeding, if material. In 2021/22 there was only one such load, a 20 m<sup>3</sup> activated load transferred from Colchester WRC to Mersea Youth Camp (15.9 km). At 0.00014 ttds, this load is not sufficiently material to be reported here or in 8A.15 or 8A.17 (0.002 ttds\*km). However, it has been reported in 8A.18 as at 318 m<sup>3</sup>\*km it is material there.

#### **Total measure of intersiting 'work' done by pipeline (8A.9)**

**16** We have included here sludge transferred by pipeline from Southend WRC to Rochford WRC for dewatering. This had stopped but the opening of a sinkhole at Southend WRC required the centrifuges to be moved and pumping to resume for part of the reporting year. The estimated pumped transfer is calculated by taking the PE-based sludge production for Southend (6.7 ttds), subtracting cake produced at Southend (2.7 ttds) and multiplying by the length of the pipe (6.325 km).

#### **Truck and tanker distances (8A.10, 11, 13, 15 and 16)**

**17** All our 'trucked' distance is estimated road distance (km), based on straight line distance x 1.35, which we have assessed as the average relationship between straight line and road distance. All 'tankered' lines use measured road distance.

#### **Total measure of intersiting 'work' done by tanker (8A.10)**

**18** We measure tankering work volumetrically, so to convert cubic metres to ttds we have used an average percentage of dry solids (DS) of 3.18 per cent. This is the average of measured data for the 2021/22 reporting period. Our systems have allowed us to update the thickness which had previously used an average from 2018/19 and, as a result, the more accurate number has shown an increase in the ttds element. This shows an improvement in our satellite thickening (3.18 per cent DS average up from 2.42 per cent DS in 2018/19). Table 8A line 13 is unadjusted for dry solids content equivalent number.

**19** In the reporting year tankered sludge has travelled further, mainly due to the operational disruption caused by the temporary closure of Great Billing STC (see commentary above). This affects line 8A.13. In addition, our updating of the average dry solids percentage of tankered loads has had the affect of increasing this line further.

**Total measure of intersiting 'work' done by truck (8A.11)**

**20** We have included all raw cake transfers between dewatering centres and STCs in this line. We have also included raw cake exported to YWS for treatment (0.5 ttds).

**21** We have seen this number increase considerably in 2021/22 due to the temporary closure of Great Billing STC; this resulted in raw cake production (Great Billing's indigenous) being exported, mostly to Whilton WRC for liming. Raw cake imports to Great Billing were diverted elsewhere, including other STCs, March WRC for liming and export out of ANH. There was also some consequential redistribution of sludge loads to other STCs.

**Total measure of 'work' done in sludge disposal operations by tanker and by volume transported (8A.15 and 8A.18)**

**22** We have only passed one 20 m<sup>3</sup> tanker load to third parties in the reporting year (see 8A.7 commentary). This was not material for 8A.15, but it is for 8A.18 (318 m<sup>3</sup>\*km) and has therefore been reported in the latter. As our entire disposal to agricultural land, land reclamation (when applicable) and composting (when applicable) is completed as cake, these are no additional entries.

**Total measure of 'work' done in sludge disposal operations by truck (8A.16)**

**23** Treated cake that is transferred to intermediate storage, as well as from STC direct to the landbank, has been included. This number has increased by 10 per cent in comparison to 2020/21 because in 2021/22 we exported 3.4 ttds of raw sludge to an out-of-area third party land reclamation scheme, which was 150 km away. There would also have been some impact associated with Farming Rules for Water, which restricted the available landbank, creating additional movements into storage and less material hauled to land.

**Chemical P sludge as percentage of sludge produced at STWs (8A.19)**

**24** The number reported was calculated in the same way as in 2020/21 in line with the definition.

**25** We have not included sludge arising from phosphorus (P) removal at Whitlingham WRC (Norwich), either now or previously, as this site has a biological nutrient removal plant and we do not dose chemicals there. Similarly, we do not include iron salt dosing at Clacton WRC, which is for enhanced settlement.

**Table 8B - Bioresources operating expenditure analysis for the 12 months ended 31st March 2022**

	Line description	Units	Pipeline	Tanker	Truck	Total
<b>Sludge transport method</b>						
1	Power	£m	0.049	-	-	0.049
2	Income treated as negative expenditure	£m	-	(0.004)	-	(0.004)
3	Discharge consents	£m	-	-	-	-
4	Bulk discharge	£m	-	-	-	-
<b>Other operating expenditure</b>						
5	Renewals expensed in year (Infrastructure)	£m	-	-	-	-
6	Renewals expensed in year (Non-Infrastructure)	£m	-	-	-	-
7	Other operating expenditure excluding renewals	£m	0.056	24.460	-	24.516
8	Total functional expenditure	£m	0.105	24.456	-	24.561
9	Local authority and Cumulo rates	£m	-	0.067	-	0.067
10	Total operating expenditure (excluding 3rd party)	£m	0.105	24.523	-	24.628

Line description	Units	Untreated Sludge	Raw Sludge liming	Conventional AD	Incineration of raw sludge
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	Sludge treatment type					
11	Power	£m	-	0.080	(0.117)	-
12	Income treated as negative expenditure	£m	-	-	(0.046)	-
13	Discharge consents	£m	-	-	0.002	-
14	Bulk discharge	£m	-	-	-	-

	Other operating expenditure					
15	Renewals expensed in year (Infrastructure)	£m	-	-	-	-
16	Renewals expensed in year (Non-Infrastructure)	£m	-	-	-	-
17	Other operating expenditure excluding renewals	£m	-	-	-	-
18	Total functional expenditure	£m	-	0.080	(0.161)	-
19	Local authority and Cumulo rates	£m	-	0.292	0.035	-
20	Total operating expenditure (excluding 3rd party)	£m	-	0.372	(0.126)	-

Line description	Units	Photo-conditioning/ composting	Advanced Anaerobic Digestion	Other	Total
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	Sludge treatment type					
11	Power	£m	-	0.572	-	0.535
12	Income treated as negative expenditure	£m	-	(6.375)	-	(6.421)
13	Discharge consents	£m	-	0.144	-	0.146
14	Bulk discharge	£m	-	-	-	-

	Other operating expenditure					
15	Renewals expensed in year (Infrastructure)	£m	-	-	-	-
16	Renewals expensed in year (Non-Infrastructure)	£m	-	-	-	-
17	Other operating expenditure excluding renewals	£m	-	-	-	-
18	Total functional expenditure	£m	-	(5.659)	-	(5.740)
19	Local authority and Cumulo rates	£m	-	2.696	-	3.023
20	Total operating expenditure (excluding 3rd party)	£m	-	(2.963)	-	(2.717)

Line description	Units	landfill, raw	landfill, partly treated	land restoration/ reclamation	sludge recycled to farmland	Incineration of digested Sludge	Other	Total
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Sludge disposal route								
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21	Power	£m	-	-	-	-	-	-
22	Income treated as negative expenditure	£m	-	-	-	(1.957)	-	(1.957)
23	Discharge consents	£m	-	-	-	-	-	-
24	Bulk discharge	£m	-	-	-	-	-	-

Other operating expenditure								
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25	Renewals expensed in year (Infrastructure)	£m	-	-	-	-	-	-
26	Renewals expensed in year (Non-Infrastructure)	£m	-	-	-	-	-	-
27	Other operating expenditure excluding renewals	£m	-	-	-	13.760	-	13.760
28	Total functional expenditure	£m	-	-	-	11.803	-	11.803
29	Local authority and Cumulo rates	£m	-	-	-	0.033	-	0.033
30	Total operating expenditure (excluding 3rd party)	£m	-	-	-	11.836	-	11.836

**1** See Table 4E for commentary on bioresources expenditure.



**Table 8C - Bioresources energy and liquors analysis for the 12 months ended 31st March 2022**

Line description	Electricity	Heat	Biomethane	Total	Electricity	Heat	Biomethane	Total
	MWh	MWh	MWh	MWh	£m	£m	£m	£m

Energy								
1	Energy consumption - bioresources	-	-	-	-	-	-	13.697
2	Energy generated by and used in bioresources control	27,764.000	68,573.000	88,979.889	185,316.889	3.372	3.778	7.150
3	Energy generated by bioresources and used in network plus control	50,308.000	-	161,230.380	211,538.380	6.110	-	6.110
4	Energy generated by bioresources and exported to the grid or third party	23,292.000	-	74,647.730	97,939.730	1.280	-	1.280
5	Energy generated by bioresources that is unused	-	21,605.000	47,615.000	69,220.000	-	-	-
6	Energy bought from grid or third party and used in bioresources control	39,786.000	31,492.000	-	71,278.000	4.811	1.735	6.546

	Income from renewable energy subsidies	Unit	Value
7	Income claimed from Renewable Energy Certificates (ROCs)	£m	5.086
8	Income claimed from Renewable Heat Incentives (RHIs)	£m	-
9	Income claimed from [other renewable energy subsidy (1)]	£m	0.007
10	Income claimed from [other renewable energy subsidy (2)]	£m	-
11	Income claimed from [other renewable energy subsidy (3)]	£m	-
12	Total income claimed from renewable energy subsidies	£m	5.093
13	% of total number of renewable energy subsidies due to expire in the next 2 financial years	%	-
14	This year's value of renewable energy subsidies due to expire in the next 2 financial years	£m	-

	Bioresources liquors treated by network plus	Unit	Value
15	BOD load of liquor or partially treated liquor returned from bioresources to network plus	kg/d	20,270.000
16	Ammonia load of liquor or partially treated liquor returned from bioresources to network plus	kg Amm-N/d	2,837.000
17	Recharge to Bioresources by network plus for costs of handling and treating bioresources liquors	£m	13.219

	Electricity	Heat	Biomethane	Total	Electricity	Heat	Biomethane	Total
	MWh	MWh	MWh	MWh	£m	£m	£m	£m

Energy (AMP 7 shadow reported values)								
18	Energy consumption - bioresources	-	-	-	-	-	-	-
19	Energy generated by and used in bioresources control	27,764.000	-	-	27,764.000	3.372	-	3.372
20	Energy generated by bioresources and used in network plus control	50,308.000	-	-	50,308.000	6.110	-	6.110
21	Energy generated by bioresources and exported to the grid or third party	23,292.000	-	-	23,292.000	1.280	-	1.280
22	Energy generated by bioresources that is unused	-	-	-	-	-	-	-
23	Energy bought from grid or third party and used in bioresources control	39,786.000	-	-	39,786.000	4.811	-	4.811

	%
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24	Percentage of bioresources energy consumption that is metered	0.220
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### Energy generation and use - bioresources (8C.1-6)

**1** The total cost of energy consumption in bioresources fell by £1.0m (6.8 per cent) on the prior year.

**2** Electricity usage by bioresources was only a minor component of this change, just -583MWh or -0.85 per cent, a reduction in the consumption of CHP power on the sites was almost offset by an increase in the consumption of grid energy resulting. The main reason for the change was the reduction in the consumption associated with Fuel Oil of -5,394 MWh, or -21.2 per cent.

**3** This change was due to a reduction in the purchase of gas oil in the Wastewater function, most of which is allocated to bioresources due to its use for process heating. The reduction here was -8,066 MWh, or -48.9 per cent, although this was somewhat offset by an increase in the use of natural gas by the bioresources sites of 2,419 MWh, or 27.2 per cent. There are several drivers to explain this. Firstly there has been an increased use of natural gas to displace gas oil for process heating. Secondly, the maintenance issues at Great Billing STC meant less biogas was available for heating the process for several months. And lastly, the Medium Combustion Plant Directive/Specified Generator Regulations and higher fuel prices have led to less demand-side response activity by the company.

### Electricity

**4** A lower CHP generation output – mainly driven by the issues at Great Billing STC - impacted lines 8C.2 to 8C.6. Electricity generated by bioresources through CHP and used in bioresources was 27,764 MWh, which was lower than in 2020/21 at 31,172 MWh (line 8C.2). The CHP electricity used by Water Recycling network plus also declined to 50,308 MWh versus 54,826 MWh in 2020/21 (line 8C.3). There was a lower export of electricity to the grid – 23,292 MWh in 2021/22 compared to 29,064 MWh in 2020/21 (line 8C.4). None of the generated electricity was unused, as in 2020/21 (line 8C.5). Finally, more electricity was imported from the grid to bioresources in 2021/22 – 39,786 MWh compared to 36,945 MWh in 2020/21 (line 8C.6), offsetting the lower usage of CHP generated electricity already mentioned (line 8C.2).

**5** Costs for the power consumed were £3.372 million in line 8C.2, £6.110 million in line 8C.3 and £4.811 million in line 8C.6. These sums were calculated using the average unit cost for half-hourly metered electricity for the 2021/22 of £121.45/MWh. In line with the

Ofwat guidance, it is assumed that CHP generated electricity which was used on site has the same unit cost as imported grid electricity. For sales of exported electricity the sum used is that received from the export supplier of £1.280 million.

**6** A number of assumptions have been made in calculating the water recycling energy consumption data.

- For the whole of the water recycling function, we have applied a financial split from regulatory accounts between bioresources and water recycling network plus for electricity consumption. This financial split is based upon assessments of proportional use by different Ofwat business units made by operational experts.
- We have included energy from renewable sources generated and used on site, including CHP (combined heat and power), wind and solar.
- Grid electricity and fuel (oil and natural gas) used in offices has been included and split equally between water and water recycling.
- Fuel oil is not recorded on our corporate systems against Ofwat's business units and therefore the same split used for electricity has been assumed for each fuel type with the exception of gas oil delivered to water recycling sites;
- We have assumed a 35 per cent thermal efficiency for natural gas consumption in converting to energy output (boilers and CHP).
- An assumption has been made that 90 per cent of gas oil delivered to water recycling sites is used for CHP boilers in line with the approach taken by our management accountants.
- Transport (claimed mileage and fleet fuel purchased on fuel cards) is not recorded in our corporate systems against Ofwat's business units and therefore we have split the total 50/50 between water and water recycling and then assumed that they split in the same proportions as electricity between the business units. This is with the exception of RES fleet biosolids haulage fleet which has been allocated entirely to bioresources.
- Sub contracted transport (bioresources and cake) has not been included, only fleet (directly operated) vehicles.
- Transport for company cars is collected as mileage. We have converted mileage into kWh through using BEIS' greenhouse gas reporting condensed conversion factors for 2021.
- For electric vehicles we have made the assumption that the mileage claimed relates to charging at home, rather than using the charging points at the offices as most office-based employees were working from home during the Covid-19 pandemic. We believe this assumption to be safe and not capable of skewing the overall figures since (i) electric car consumption totals just 28,990 kWh across the whole of Anglian Water and (ii) wherever cars are charged, the driver may be charging for domestic and commuting miles (which cannot be claimed) as well as for business. We are looking to improve our processes in order to better capture consumption by electric cars charged at home and AW infrastructure.
- Electricity figures used in 8C.2-6 – grid import, CHP generation and export – are all metered so there is a high confidence in them.

## Heat and biomethane

**7** All energy generated by bioresources is from biomethane, which is –

- Converted into electricity and heat in combined heat and power (CHP) engines, or
- Converted into heat in boilers, or
- Flared.

**8** (a) For electricity we have recorded the MWh of electricity generated by each CHP and measured by an output meter.

**9** (b) For heat we have used a calculation for the mass balance of our STCs, with assumptions that CHPs are 90 per cent efficient, and 20 per cent of heat energy is lost in transfer through availability of asset, fouling etc. The calculation is based on the maximum

available heat from CHP capacity pro rata to actual CHP output and then divided by throughput (measured as tonnes of dry solids, tds) to give a MWh/tds. This is then multiplied by total tds to give a total heat generated.

**10** (c) To calculate the MWh value of the biogas we initially calculate total biogas volume. This is done as a calculation as measurement of biogas through flow meters is difficult due to biogas properties (variance in methane and gas moisture content) causing inaccuracies in flowmeters and therefore subject to error. We have therefore used two estimation methods:

1. We assume a fixed volume of biogas per tonne of sludge treated, estimated on a site-specific basis. (e.g. 450 m<sup>3</sup> per tds for our best performing HPH sites based on conversion rate (MWh/tds)).
2. Based on the assumption that each 1 KWh of electricity produced by the CHP engine requires 2.1 m<sup>3</sup> of biogas.

**11** The final total Biogas production figure for all sites is the average of the figures from these two methods.

**12** We then convert biogas volume to calorific value by assuming that each m<sup>3</sup> of biogas has a calorific value of 6.7 KWh. This assumes an average calorific value of the biogas of 21.5MJ/m<sup>3</sup> at 60 per cent methane content ([www.biogas-info.co.uk](http://www.biogas-info.co.uk)).

**13** In the ££ columns we have reported the value of the electricity we have generated and the imported heat we have saved. We have not reported a value for the biogas to avoid double-counting and over-stating the financial value obtained from the biogas produced as the MWh value recorded under biogas is also counted again when converted to heat or electricity.

**14** We do not export any biogas or heat energy to network plus (line 3).

**15** Heat generated by bioresources is used by bioresources and our calculations show that some of our site processes will generate more heat than is required in bioresources. This heat is then unused. These sites also show that in periods natural gas/gas oil has been bought in (line 6) to top up boilers to provide heat for the process when we are unable to recover enough heat or where instantaneous heat demand is greater than instantaneous heat available from the CHP engines. This is due to inefficiencies in processes, such as low temperature hot water circuits or downtime of assets due to events such as maintenance of CHPs or waste heat boilers.

**16** Electricity generated is used by bioresources and network plus first with any surplus being exported to the grid (line 4).

**17** Gas is only flared if CHPs and / or boilers are offline or the biomethane supply exceeds the capacity of the CHP and boilers (line 5). Volumes are taken from on-site readings. (There are no readings for Chelmsford with meters to be installed). Flared gas accounts for 13% of total biogas production by MWh.

**18** An error was found in the APR21 heat calculations for Great Billing STC. In APR21 we calculated 125,285MWh of heat generated and used in bioresources (line 2) and 110,764MWh of unused heat (line 5) for this site. This formula has been readjusted and actual figures at Great Billing for 2020/21 are 23,671MWh and 9,151MWh respectively. As a total, this dropped line 2 from 180,064MWh to 78,451MWh and line 5 down to 23,737MWh rather than the original reported number of 125,350MWh.

**19** Heat generation in 2021/22 across the region was down 12.5 per cent on the adjusted APR21 total. This was due to the fact we had to take our largest STC at Great Billing offline for cleaning and maintenance after approximately 14 years of operation. That resulted in a halving of Great Billing's throughput and CHP outputs. Great Billing's heat generation was

down 61 per cent on the adjusted prior year figure but, due to increased throughput and performance, other sites were able to produce additional heat. Again, due to this increased performance more STCs produced heat that was unable to be used.

**20** Total Biogas production is also down 10 per cent on the prior year due to changes in total throughput and the impact of our largest STC being offline.

**21** Flared Biogas is up by 59 per cent on the previous year, with significant engine downtime at Cotton Valley STC and Kings Lynn STC plus a few other CHP reliability issues across other sites. Most were impacted by significant lead times in parts being delivered.

#### **Income claimed from bioresources (8C.7 to 8C.14)**

**22** This was a new APR line in 2020/21. It captures the income for the bioresources function from the sale of Renewable Obligation Certificates (ROCs), from the Renewable Heat Incentive (RHI) and from any other Renewable Energy (RE) subsidies.

**23** The income for the period April 2020 to March 2021 totals £5.093 million, consisting of £5.086 million from ROCs and £0.007 million from Renewable Energy Guarantees of Origin (REGOs). This is £0.025 million lower than the equivalent figure calculated for financial year 2020/21. The decrease is due to the lower number of ROCs associated with a lower volume of electricity generated.

**24** The number of ROCs generated in 2021/22 was 11,352 lower (-11.1 per cent) than in 2020/21; this was from decreased generation at bioresources sites, mainly at Great Billing Sludge Treatment Centre which required extended maintenance. Also, we gained £0.007 million (£6.809k) by selling the REGOs associated with the exported power from the Combined Heat and Power (CHP) engines on the bioresources sites.

**25** No income was gained for RHI as we do not have any facilities at bioresources sites which are registered for RHI. No other RE subsidies were applied for nor obtained.

**26** Because Ofgem issues ROCs three months in arrears, the ROCs for March 2022 have yet to be issued at the time of reporting. Instead, for that month only, we have used the numbers of ROCs that we have already applied to Ofgem for on the basis of the metered records of electricity generated and exported. Normally, any differences between applied for and issued certificates are only very small and due to rounding. In 2020/21 we reported £5.118 million and the actual amount received was £5.118 million.

**27** At the time of reporting a contract to sell 2021/22 ROCs had just been signed at a price of £56.00. This is later than we had expected to have secured a firm price. Earlier contract negotiations with Gazprom, the Russian mainly state-owned energy giant, fell through when Russia invaded Ukraine in February 2022. We took the decision to withdraw from negotiations as we did not want to deal with a Russian state company and it was considered Gazprom might be sanctioned.

**28** No RE subsidies expire on any bioresources sites in the next two financial years so lines 8C.13 and 8C.14 are reported as zero.

#### **BOD and ammonia loads of liquor or partially treated liquor returned from bioresources to network plus (8C.15, 8C.16)**

**29** We have sampled ammonia and 1 hour settled BOD at bioresources raw thickening and final dewatering liquor return points. Mass balance transfer calculations have been applied to provide volumetric load data. Where this has not been possible, flow meter data have been used.

**30** There are significant differences between the 2020/21 values for lines 8C.15 and 16. This is due to significant differences in the methodologies used to arrive at these figures across the two years.

**31** The methodology for completing these lines was unknown until the end of the report year 2020/21 and therefore values in 2020/21 were produced in short order using best endeavours with the data available.

**32** In 2020/21 many assumed and interpolated values were used concerning the returned liquors strength and volumetric data. However, for 2021/22 we have used a more comprehensive procedure to produce the kg BOD/day and kg ammonia/day figures and followed recommendations made by Jacobs as a standard methodology for quantifying the Bioresources fraction of costs in scope for returned liquors.

**33** We set up a sampling schedule using our accredited sampling team to produce regular results for raw and digestate liquor strength and accompanying inlet sewage, with analysis for 1-hour quiescent settled BOD and ammonia, where previously Total BOD and ammonia were the determining factors.

**34** Where a site in scope does not have an ammonia consent, these values have been excluded as they do not infer costs onto network plus. In 2020/21 these were included in the total for 'Kg ammonia/day'.

**35** A set of data has been used in mass balance calculations to estimate the volumes of returned liquors. In 2020/21 we did this in some instances and then interpolated from these values for other sites.

**36** To assist in continued reporting, a PowerBI report hosted on an internal app has been created to track new samples, allowing the progress of the sampling programme in a form that is easily translated for the requirements for these lines.

#### **Recharge to Bioresources by network plus for costs of handling and treating bioresources liquors (8C.17)**

**37** We have calculated the recharge in accordance with the methodology set out in the Jacobs report (*'Setting a standardised methodology for quantifying the cost of sludge liquor treatment in the water industry'*, Jacobs, December 2020). Under our old methodology, the value of the recharge would have been £12.3m.

**38** To calculate the costs incurred by network plus to treat these liquors we calculated the returned liquor load attributable to bioresources as a proportion of total load treated by network plus. The average returned liquors concentration of settled BOD (mg/l) was added to the average returned liquors concentration of ammonia (mg/l) (multiplied by 4.57 to convert ammonia to BOD) and multiplied by the volume of returned liquors (m<sup>3</sup>). This was then divided by the average sewage concentration of settled BOD (mg/l) added to the average sewage concentration of ammonia (mg/l) (multiplied by 4.57 to convert ammonia to BOD) and multiplied by the volume of site inlet sewage (m<sup>3</sup>).

**39** Settled BOD and ammonia concentrations were determined by laboratory analysis of samples taken at sewage inlet and returned liquors sample points. WRC inlet volumes were determined using MCERTS flow meter data.

#### **Capital costs: MEAV allocation of upstream and downstream assets.**

**40** We used our asset cost models to produce a percentage split of WRC assets upstream and downstream of the liquor return point:

- Using the known assets on site, a gross replacement value was produced using our asset management cost estimate system
- Gross modern equivalent asset value (MEAV) was used for the allocation as it is easier to obtain from current analysis without having to make broad assumptions on asset lives
- All known assets on site were then categorised into upstream, downstream or allocated (such as fences, buildings, etc). This allowed percentage split of assets to be calculated.

**41** The capex element of the costs in scope is the annualised cost of capital and depreciation on the net MEAV of the assets. It also includes a fraction of the cost of capital and annual depreciation on shared assets.

**42** This is how we estimated the cost of capital of the relevant assets:

- Net Book Value (NBV) of historic assets
- Inflated using CPIH
- Multiplied by per cent assets downstream
- Multiplied by per cent of BOD and ammonia loading calculated factor
- Multiplied by Weighted Average Cost of Capital (WACC).

**43** This is how we estimated the depreciation charge attributable to the relevant assets:

- Current year depreciation of the historic cost assets at site level
- Inflated using CPIH
- Multiplied by per cent assets downstream
- Multiplied by per cent of BOD and ammonia loading calculated factor.

### **Operating costs**

**44** The opex element of the costs in scope is the annual operating cost of the assets in scope, including overheads. This is how we estimated the opex attributable to the relevant assets:

- Total direct opex costs for WRCs with sludge liquor returns (the opex costs of upstream assets were assumed to be immaterial)
- Addition of allocated proportion of central overhead (OH) costs
- Multiplied by per cent of BOD and ammonia loading calculated factor.

**45** The movement from our 2020/21 estimate is driven by putting in place steps we previously highlighted.

**46** Since 2020/21 we have improved our methodology for estimating the sludge liquor recharge in these ways:

- Improved our characterisation of sludge liquor (e.g. through using settled BOD rather than total BOD, taking more samples across all of our sites and including liquors from thickening assets)
- Improved our estimate of the proportion of costs that should be attributable to liquor treatment, using information on BOD and ammonia loads entering WRCs rather than BOD converted into PE
- Checked whether liquors are returned to the WRCs at points other than the inlet works and confirming whether there are material opex costs upstream of this point that should be excluded
- Estimated the cost of capital using net MEAV rather than indexed Net Book Value.

### **Energy Consumption – bioresources (AMP7 Shadow Reported Values, 8C.18-23)**

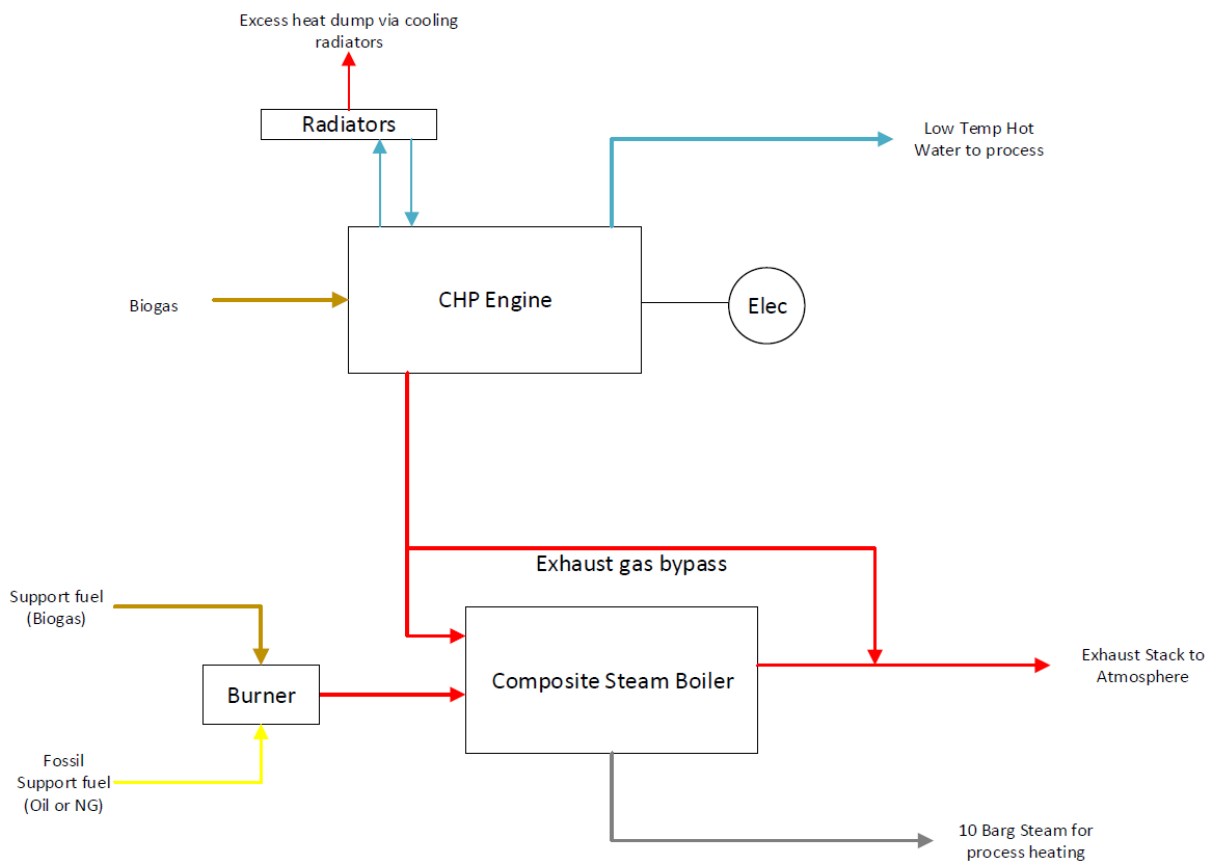
**47** These lines are new for 2021/22 and are a shadow reporting requirement for the remainder of AMP7. In respect of electricity, the definitions supplied by Ofwat in RAG4 for lines 8C.18 to 8C.23 match our existing methodologies for lines 8C.1 to 8C.6 save that the former are to be based upon improved allocation of revenues and costs between the wastewater network plus price control and the bioresources price control. This is to be achieved through improved metering of the bioresources assets on our sites.



**48** We already have sub-metering to measure the electricity used on many of the bioresources assets and this has been used as part of the assessment to allocate revenues and costs since 2016/17. However, this is not yet sufficient to meet Ofwat's target of 80 per cent metered consumption. For 21/22, therefore, the values for lines 8C.18 to 8C.23 are identical to lines 8C.1 to 8C.6.

**49** We have not completed the heat and biomethane columns for line 18-23 because the prescribed methodology is not appropriate for our systems.

**50** To further explain why we use mass balance for heat produced and used in bioresources instead of taking monthly spot samples it is important to understand how the heat recovery systems from our CHPs and boilers operate. The diagram below is a typical arrangement for our STCs.



**51** The diagram displays the complexity of the system, with heat recovered from CHP engines through hot water and a separate exhaust gas stream. This is typical of advanced anaerobic digestion which uses steam injection for the pasteurisation process step and has a much greater level of system complexity compared with traditional systems where heat is all recovered into simple hot water circuits. The CHP engines are the prime user of biogas as fuel and the engines typically modulate in a range of 50-100 per cent of the rated capacity. For example, depending on the rate of gas production from the digestion process a 1.2MWe engine would automatically modulate its output between 0.6 - 1.2MWe to balance output versus biogas production. Heat is produced proportionate to engine output as either hot water or exhaust gases. This heat is available for process heating but is only used where there is a heat demand from the advanced anaerobic digestion process. If heat produced is in excess of heat demand then exhaust gases bypass the boiler and/or hot water is diverted to fan radiators to dump heat to protect the CHP engines. As a result, a spot sample of exhaust gas flow and temperature as an input into the composite steam boiler would not be representative of the heat generated, it would only be relevant for that moment in time. By measuring CHP electrical output, fossil fuel input to boilers and understanding the heat demand from the process we believe it is much more accurate to calculate heat produced and heat used in bioresources than taking monthly spot samples.



**52** The methodology prescribed for shadow reporting (lines 18-23) may be appropriate for the sludge treatment arrangements of other companies but does not provide meaningful information for our operations. Our inability to shadow report has no bearing on transfer prices between bioresources and network plus or any other party because we do not export heat from bioresources.

**Percentage of energy consumption that is metered (8C.24)**

**53** Line 8C.24 measures the percentage of energy consumption in bioresources that is metered as opposed to being estimated. The value for 2021/22 is 22.0 per cent. This has been assessed as the percentage of the total energy cost in the regulated accounts for those sites where the costs have been allocated based upon sub-metered data collected from meters connected to IRIS in January 2017. This is considered the most accurate of the assessment methodologies that we currently use to allocate revenues and costs. While the electricity data used in the 2021/22 allocation of costs and consumption has not been taken from those sub-meters in that period, our interpretation of the line description is that it represents the percentage of the total from sites that have accurate metering. In future years, the level of sub-metering will increase and the approach will change to include the actual sub-metered data for the period.

**Table 8D - Bioresources sludge treatment and disposal data for the 12 months ended 31st March 2022**

	Line description	Units	By incumbent	By 3rd party sludge service providers
<b>Sludge treatment process</b>				
1	% Sludge - untreated	%	2.24%	0.00%
2	% Sludge treatment process - raw sludge liming	%	13.95%	0.00%
3	% Sludge treatment process - conventional AD	%	1.66%	0.00%
4	% Sludge treatment process - advanced AD	%	81.80%	0.35%
5	% Sludge treatment process - incineration of raw sludge	%	0.00%	0.00%
6	% Sludge treatment process - other (specify)	%	0.00%	0.00%
7	% Sludge treatment process - Total	%	99.65%	0.35%
<b>(Un-incinerated) sludge disposal and recycling route</b>				
8	% Sludge disposal route - landfill, raw	%	0.0%	0.0%
9	% Sludge disposal route - landfill, partly treated	%	0.0%	0.0%
10	% Sludge disposal route - land restoration/ reclamation	%	0.0%	4.4%
11	% Sludge disposal route - sludge recycled to farmland	%	94.9%	0.0%
12	% Sludge disposal route - other (specify)	%	0.0%	0.7%
13	% Sludge disposal route - Total	%	94.9%	5.1%

### Sludge treatment process

**1** We confirm that the percentages reported in lines 1 to 7 (inclusive) relate to the sludge production figures reported in table 8A, lines 1-3.

#### % Sludge - untreated (8D.1)

**2** We have included here raw sludge that was disposed to land reclamation without treatment.

#### % Sludge – raw sludge liming (8D.2)

**3** We have used liming for peak lopping of raw sludge cake loads in the last few years. As such, 1.5 per cent was limed in 2020/21 compared with 4.4 per cent, 7.3 per cent and 16.1 per cent in 2019/20, 2018/19 and 2017/18 respectively.

**4** However, in 2021/22 the temporary closure of Great Billing STC, our biggest STC, required diversion of raw cake imports and export of indigenous sludge as raw cake for treatment elsewhere. We therefore limed substantially more sludge than we had done for a few years. Whilst we cannot entirely predict operational disruption, it is reasonable to think that an event of this scale was relatively unique. However, the challenge of treating increasing sludge loads with older assets remains.

### **% Sludge treatment process - conventional AD (8D.3)**

**5** 1.7 per cent of our total sludge production was conventionally digested in 2021/22 and was not dissimilar to 2020/21 (1.8 per cent). In February 2021 we completed the commissioning of a new pasteurisation and digestion process at Chelmsford STC. This process was designed to upgrade from the previous conventional treatment achieved by raw sludge digestion with secondary batch liquid storage to produce enhanced treated product. However, as there is no significant hydrolysis occurring, we would not consider this process to be advanced anaerobic digestion (AD).

**6** For a number of years we have digested a small amount of sludge at Caister WRC (Great Yarmouth) but we shut down the digesters there permanently in February 2021. All sludge from Caister WRC is now treated offsite, predominantly at Whitlingham STC. Work is continuing to convert the Caister digested sludge dewatering to raw dewatering to increase transport efficiency.

### **% Sludge treatment process - advanced AD (8D.4)**

**7** Our continued focus on active management of STC performance had reaped benefits in recent years, allowing us to process 96.7 per cent of our sludge production through advanced AD in 2020/21, up from 94.0 per cent in 2019/20, 90.9 per cent in 2018/19 and 82.2 per cent in 2017/18. The temporary closure of Great Billing STC saw this fall to 81.8 per cent in 20/21, but we would expect this to improve in the next reporting period.

**8** A very small amount of raw sludge cake was exported to Yorkshire Water Services (YWS) (Esholt STC) for treatment in 2021/22.

### **% Sludge treatment process - incineration of raw sludge (8D.5)**

**9** We do not incinerate any sludge.

### **Sludge disposal route**

**10** We confirm that the percentages reported in lines 8 to 13 (inclusive) relate to the sludge production figures reported in 8A.6-8.

### **% Sludge disposal route - land restoration/reclamation (8D.10)**

**11** Some 4.4 per cent of our sludge went to an out-of-area land reclamation scheme in 2021/22. Due to the downtime on Great Billing STC, we felt it prudent not to store raw cake for extended periods such that the STC could be recommissioned on fresh material, minimising biological process instability. Whilst we limed what we could with the mobile lime treatment plant and landbank available, it was necessary to use an alternative non-agricultural disposal route for some raw cake material.

### **% Sludge disposal route - sludge recycled to farmland (8D.11)**

**12** The large majority (94.9 per cent) of our sludge was recycled to farmland in 2021/22.

### **% Sludge disposal route - other (8D.12)**

**13** A very small amount (0.7 per cent or 0.5 ttds) of raw sludge cake was exported to YWS (Esholt STC) in 2021/22. This was done for the same reason explained in the commentary above (8D.10).

**14** We would also include sludge that went to third parties for activities such as digester seeding or for research projects in the 'by third party sludge service providers' sections. However, no sludge went to third parties for these purposes in the reporting year.

**Table 9A - Innovation competition**

Line description	Units	Current year
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<b>Allowed</b>		
1	Allowed innovation competition fund price control revenue	£m 4.474

<b>Revenue collected for the purposes of the innovation competition</b>		
2	Price control revenue collected from customers	£m 4.474
3	Income from customers to fund innovation projects the company is leading on	£m 0.019612
4	Income from other water companies to fund innovation projects the company is leading on	£m 0.167288
5	Non-price control revenue (e.g. royalties)	£m 0.207203
6	Revenue collected from customers and transferred into the innovation competition fund	£m 0

Line description	Total amount of funding awarded to the lead company through the innovation fund	Forecast expenditure on innovation fund projects in year (excl 10% partnership contribution)	Actual expenditure on innovation fund projects in year (excl 10% partnership contribution)	Difference between actual and forecast expenditure	Forecast project lifecycle expenditure on innovation fund projects (excl 10% partnership contribution)
Units	nr	£m	£m	£m	£m

7	Innovation project 1	0.1869	0.063	0.028777	-0.034223	0.063
8	Innovation project 2	0	0.236306	0.025767	-0.210539	0.236306
9	Innovation project 3	0	0.123519	0.031079	-0.09244	0.123519
10	Innovation project 4	0	0	0	0	0
11	Innovation project 5	0	0	0	0	0
12	Innovation project 6	0	0	0	0	0
13	Innovation project 7	0	0	0	0	0
14	Innovation project 8	0	0	0	0	0
15	Innovation project 9	0	0	0	0	0
16	Innovation project 10	0	0	0	0	0
17	Innovation project 11	0	0	0	0	0
18	Innovation project 12	0	0	0	0	0
19	Innovation project 13	0	0	0	0	0
20	Innovation project 14	0	0	0	0	0
21	Innovation project 15	0	0	0	0	0
22	Total	0.1869	0.422825	0.085623	-0.337202	0.422825

Line description	Cumulative actual expenditure on innovation fund projects (excl 10% partnership contribution)	Difference between actual and forecast expenditure	Allowed future expenditure on innovation fund projects	In year expenditure on innovation projects funded by shareholders	Cumulative expenditure on innovation projects funded by shareholders
Units	£m	£m	£m	£m	£m

7	Innovation project 1	0.028777	-0.034223	0.197654	0.007194	0.007194
8	Innovation project 2	0.025767	-0.210539	4.173082	0.002863	0.002863
9	Innovation project 3	0.031079	-0.09244	8.703402	0.0034538	0.0034538
10	Innovation project 4	0	0	0	0	0
11	Innovation project 5	0	0	0	0	0
12	Innovation project 6	0	0	0	0	0
13	Innovation project 7	0	0	0	0	0
14	Innovation project 8	0	0	0	0	0
15	Innovation project 9	0	0	0	0	0
16	Innovation project 10	0	0	0	0	0
17	Innovation project 11	0	0	0	0	0
18	Innovation project 12	0	0	0	0	0
19	Innovation project 13	0	0	0	0	0
20	Innovation project 14	0	0	0	0	0
21	Innovation project 15	0	0	0	0	0
22	Total	0.085623	-0.337202	13.074138	0.0135108	0.0135108

Administration	Units	Value
23 Administration charge for innovation partner	£m	0.20636287

- 1 All funding has been recovered through main charges. We do not receive any royalties.
- 2 In 2021/22 we were awarded:
  - £186,900 for the Whole Life Carbon project within the Innovation in Water Challenge.
  - £11,305,688 for the Safe Smart Systems and Triple Carbon Reduction projects within the Water Breakthrough Challenge (Awarded but not received until 2022/23 due to delays in MOSL transfer process).
- 3 Delivery of these projects is now underway.
- 4 In order to minimise project risks due to inflationary pressures and supply chain issues, work commenced on the Water Breakthrough Challenge projects prior to receipt of the funds as we were made aware of the delay. This risk mitigation approach was discussed directly with Nesta and the Innovation Team at Ofwat.

**5** We comply with the terms of any innovation competition funding decision's, including that innovation competition funding is not being used to fund business as usual activities funded through totex. Where we have recovered revenue from customers for the purposes of the innovation competition this revenue has been paid into the innovation competition fund as requested.

**Table 10A, 10B, 10C, 10D and 10E - Green recovery**

**Table 10A, 10B, 10C, 10D and 10E**

**1** We are not required to report any figures for these tables.

**Table 11A - Operational greenhouse gas emissions reporting for the 12 months ended 31 March 2022**

Line description		Water	Wastewater	Total
		tCO <sub>2</sub> e	tCO <sub>2</sub> e	tCO <sub>2</sub> e
Scope one emissions				
1	Burning of fossil fuels	2,590.184	9,345.966	11,936.150
2	Process and fugitive emissions	7,676.238	73,924.281	81,600.519
3	Vehicle transport	4,524.441	16,329.101	20,853.542
4	Total scope one emissions	14,790.863	99,599.348	114,390.211
5	Scope one emissions; GHG type CO <sub>2</sub>	7,021.377	25,329.955	32,351.332
6	Scope one emissions; GHG type CH <sub>4</sub>	3.465	33,515.889	33,519.354
7	Scope one emissions; GHG type N <sub>2</sub> O	7,196.444	40,184.247	47,380.691
Scope two emissions				
8	Purchased electricity - location based	69,288.946	65,600.338	134,889.284
9	Purchased electricity - market based	-	-	-
10	Purchased heat	-	-	-
11	Electric vehicles	2.593	2.593	5.186
12	Removal of electricity to charge electric vehicles at site	-	-	-
13	Total scope two emissions	69,291.539	65,602.931	134,894.470
14	Scope two emissions; GHG type CO <sub>2</sub>	68,583.384	64,932.473	133,515.857
15	Scope two emissions; GHG type CH <sub>4</sub>	261.071	247.174	508.245
16	Scope two emissions; GHG type N <sub>2</sub> O	447.084	423.284	870.368
Scope three emissions				
17	Business travel	153.074	153.074	306.148
18	Outsourced activities	24.968	12,809.254	12,834.222
19	Purchased electricity; transmission and distribution - location based	6,131.679	5,805.258	11,936.937
20	Purchased electricity; transmission and distribution - market based	-	-	-
21	Purchased heat; transmission and distribution	-	-	-
22	Total scope three emissions	6,309.721	18,767.586	25,077.307
23	Scope three emissions; GHG type CO <sub>2</sub>	6,221.503	18,363.100	24,584.603
24	Scope three emissions; GHG type CH <sub>4</sub>	22.973	154.989	177.962
25	Scope three emissions; GHG type N <sub>2</sub> O	40.277	224.528	264.805



Line description	Water	Wastewater	Total
	tCO <sub>2</sub> e	tCO <sub>2</sub> e	tCO <sub>2</sub> e

	<b>Gross operational emissions (Scope 1,2 and 3)</b>			
26	Gross operational emissions - location based	90,392.122	183,969.860	274,361.982
27	Gross operational emissions - market based	114,365.880	206,490.100	320,855.980

	Emissions reductions			
28	Exported renewables	-	-	-4,945.531
29	Exported biomethane	-	-	-
30	Green tariff electricity offsets	-	-	-
31	Other emissions reductions	-	-	-
32	Total emissions reductions	-	-	-

	<b>Net annual emissions</b>			
33	Net annual emissions - location based	90,392.122	179,024.330	269,416.452
34	Net annual emissions - market based	114,365.880	206,490.100	320,855.980
35	Net annual emissions	-	-	-

Line description	Water	Wastewater
	kgCO <sub>2</sub> e/MI	kgCO <sub>2</sub> e/MI

	GHG intensity ratios		
36	Emissions per MI of treated water	203.727	-
37	Emissions per MI of sewage treated (flow to full treatment)	-	232.612
38	Emissions per MI of sewage treated (water distribution input)	-	425.200

### Emissions reductions (11A.28-29)

**1** The row title suggests these are market-based figures but we have reported location-based. This is in accordance with guidance issued by Ofwat in its 'Query Log 30.5.2022.' The same guidance asked us to return a total figure and not to split between water and wastewater.

### Operational carbon

**2** Table 11A presents 2021/22 performance using both location-based and market-based methodologies and was generated using the latest version of the Carbon Accounting Workbook (CAW) version 16.

**3** For electricity purchased from the grid, location-based reporting uses the grid average CO<sub>2</sub> emissions factor. Market-based reporting uses the grid CO<sub>2</sub> emissions factor for the electricity supplier and the mix of electricity purchased (in our case, SSE). Due to the different electricity generation fuel mixes of the various suppliers, this CO<sub>2</sub> emissions factor differs between suppliers and from the grid average. Therefore, location-based reporting and market-based reporting give different total emissions numbers.

**4** Electricity consumption is one of the main emissions sources for our company. In 2021/22 we have consumed less grid energy than in the previous three years. The location-based emissions have seen reductions owing to decarbonisation of the grid, therefore reducing emissions factors. From a market-based perspective we have benefited from the purchase of a portion of sleeved renewable energy which has resulted in a reduction in market-based emissions.

## Strengths

**5** We measure our operational carbon emissions using the UKWIR Carbon Accounting Methodology through the Carbon Accounting Workbook (CAW). This is an industry standard approach which is updated annually and is reflective of carbon reporting and emissions guidance from Defra. Our annual emissions are verified to ISO-14064-1 through Achilles Carbon Reduce (formerly CEMARS). We have achieved Platinum status for over 10 years of carbon reductions and have achieved our reduction targets over the last two AMP periods.

**6** We have an performance commitment for carbon reductions that aligns with the AMP period.

**7** We have well established energy optimisation processes which have proved successful, and we will continue to improve our performance in this area.

**8** We submit an annual response to CDP (formerly Carbon Disclosure Programme). For 2020/21 we achieved a rating of A- placing us in the leadership category and in the top 5 per cent of respondents worldwide. In 2021 the scheme received over 13,000 submissions.

**9** We report in line with the government's guidance on Streamlined Energy and Carbon Reporting (SECR), which seeks to align with the principles of the greenhouse gas (GHG) protocol corporate standard.

## Weaknesses

**10** A challenging area for achieving reductions is process emissions associated with water and waste treatment. In recognition that the emissions arising from treatment process are not well understood a review, led through UKWIR, is currently ongoing into the quantification and reduction of this emissions source. As part of this process we are undertaking trials in measurement of these emissions and in the introduction of new technologies. Recommendations from phase 1 of the review led to a change in accounting for N2O loading in the CAWv15, increasing emissions from wastewater treatment. This change in N2O loading has been carried through to CAWv16.

**11** Outputs at the end of the review will mean that the way that process emissions are measured and reported will be more robust. However, this may mean that reported outputs rise increasing the challenge to achieving net zero carbon.

## Opportunities

**12** Our longer-term aim is to achieve net zero carbon by 2030, a water sector ambition that was set out in a Public Interest Commitment with the other English Water companies in 2019. Consultants Mott MacDonald and Ricardo, in collaboration with a steering group representing water companies, published an industry route map in 2020. This was followed by an Anglian Water-specific net zero Routemap in July 2021. This Routemap contains more details on the approaches we will undertake to reach our net zero goal. The routemap is publicly available through our webpages.

**13** There are a host of initiatives currently under way or in the development phase to further reduce our GHG emissions to achieve our net zero 2030 target. We will continue with our programme of developing renewable energy generation with a particular focus on solar photovoltaics (PV), with a parallel programme of developing energy storage solutions to maximise renewable electricity consumption.

**14** We are currently planning for a water recycling centre (WRC) to export biogas into the gas network. This will result in carbon savings over and above those which could be achieved through energy generation from combined heat and power (CHP).

**15** Our energy optimisation programme will continue, driving out inefficiencies using increased understanding achieved through improved data quality.

**16** We have commenced a programme to introduce electric vehicles (EV) into our fleet, with a programme for annual replacement of Internal Combustion Engine (ICE) vehicles to EV. This programme currently concentrates on our smaller fleet where EVs with adequate range are available. It is hoped that, as the market matures and larger EVs become available, we can achieve further uptake. With regards our larger vehicles and HGV fleet, we are working towards the introduction of biodiesel vehicles in the coming years and likely Hydrogen powered HGVs when they become available, possibly close to 2030.

**17** We have introduced a programme to replace fossil fuels with hydrotreated vegetable oil (HVO) in our back-up generators, boilers and construction plant and equipment, thereby reducing carbon emissions.

**18** We also plan to introduce natural capital solutions for the treatment of water to reduce operational energy, as well as deliver the associated natural benefits.

**19** Studies are also underway to understand opportunities for carbon sequestration at a local level. At present these studies involve soil carbon and seagrass (led by Affinity Water through the Ofwat Innovation Fund). It is hoped that large scale carbon sequestration opportunities are identified.

## Threats

**20** As discussed above, process emissions from wastewater treatment are not currently well understood and are subject to further studies. It is possible that, following the conclusion of these studies, emissions factors for process emissions increase further, leading to a requirement for larger carbon reductions.

**21** Population continues to grow in our region, with a forecast of approximately 1 million new homes to be built in the next 25 years. This will increase water demand and therefore the energy required to supply and recycle water.

**22** In addition, the lockdowns associated with the pandemic have led to an increased water demand as large numbers of people work from home. It is currently unclear as to how work patterns will evolve over the coming years, but it appears likely that there will be more homeworking than pre-pandemic, potentially increasing water demand.

**23** The extremely wet weather in parts of our region around Christmas 2020 saw increased energy consumption in 2020/21. However, in 2021/22 there have been no such incidents and we have seen a reduction in energy consumption. Going forward, it is likely that further extreme weather events as a consequence of climate change will occur, which may have an increasing impact on energy consumption into the future.

**24** There are also threats associated with national policies and regulations. The mandatory introduction of labels on taps, showers, dishwashers and washing machines will assist consumers in selecting low water use appliances but delays in its introduction will delay uptake and therefore the water and associated energy savings. Similarly, delays in changes to building regulations around water usage and planning policies around sustainable drainage for new developments will also reduce the opportunity for energy and carbon savings.

**25** Changes to the green gas levy could undermine the business case for CHP and/or injecting gas into the grid, making these carbon saving opportunities unviable.

**26** Abstraction licence caps being imposed by the EA to protect sensitive environments (under the WFD no deterioration principle) can result in the construction of more infrastructure and the use of more energy to move water over longer distances.

**27** Designation of inland bathing waters could lead to a need to treat effluent with carbon intensive options such as ozone, UV or carbon filtration at relevant WRCs. This would increase energy requirements.

### **Embodied (capital) carbon**

**28** Since 2015 we have reported annual capital carbon performance to Ofwat through an agreed performance commitment. This is measured as a percentage reduction annualised figure versus a 2010 baseline. The 2010 baseline has been retained, recognising the behaviours required around leadership and challenge. In line with the reporting of this measure, capital carbon reductions for 2021/22 were 63.1 per cent against an annual target of 62 per cent, with an end of AMP 7 target of 65 per cent.

**29** We use the term capital carbon, aligning with the definitions within the Treasury's Infrastructure Carbon Review (2013), referring to the emissions associated with the creation of an asset. This is measured from cradle to 'as built', in line with the UKWIR framework on whole life carbon reporting. We do not report on a cradle to gate basis; reporting cradle to 'as built' provides for a richer and more accurate understanding of performance.

**30** Capital schemes that reached completion (cradle to 'as built') in 2021/22 totalled 10,673 tCO<sub>2</sub>e.

**31** We do not currently formally report on the additional embodied carbon emissions - notably use of goods and services - as suggested by Ofwat for voluntary reporting. However, as part of our annual data gathering process, we collect data which could be used to report some of these. Services include the outsourced tankering of sludge.

**32** We currently capture information on amounts of chemicals purchased annually for water and waste treatment. Carbon associated with these chemicals as calculated in the Carbon Accounting Workbook (CAW) totals 19,867 tCO<sub>2</sub>e.

### **Strengths**

**33** In 2016 we became the first organisation globally to be externally verified (though LRQA) to PAS2080 Carbon Management in Infrastructure. The carbon framework at the heart of the PAS2080 standard ensures that our approach is aligned with key stakeholders within the value chain - including product suppliers, constructors and designers - in demanding and enabling low carbon solutions. We undertake an annual verification of PAS2080.

**34** As we have been measuring, managing and reducing capital carbon since 2010, we have access to significant levels of data to support our reporting and strategy for delivering against ambitious targets. Evidence has now been collated over a number of years, illustrating the relationship between reducing carbon and reducing cost.

**35** We have over 1,300 carbon models which not only allow us to be consistent with baselines but also allow our alliances to identify areas of high carbon and to optioneer lower carbon solutions. The scope of these models is cradle to 'as built'. We believe this approach is more comprehensive than cradle to gate and allows for a more accurate understanding of performance and the identification of carbon reduction approaches in the construction phase.

**36** The models contain a consistent data set sourced from the Inventory of Carbon and Energy, CESSM workbook, Defra emission factors and direct data from several product and material suppliers.

**37** As per our Net Zero Carbon Routemap 2030 published in July 2021, we committed to achieving 70 per cent capital carbon reductions by 2030. We will also develop a strategy to further reduce these emissions post 2030.

## Opportunities

**38** Through utilising historical information, and based on our experience of reducing capital carbon, we recognise that there are different opportunities in finding carbon reductions between above ground and below ground assets and schemes. Information such as this can help us identify areas of greater challenge. The table below illustrates this with actual data from 2021/22.

**39** High Level Performance:

	2021-22 actual
Reduction against baseline	63.10%

**40** Detailed Performance

	2021-22 actual
Water Infrastructure	59.40%
Water non-infrastructure	57.60%
Water Recycling Infrastructure	55.60%
Water Recycling Non-Infrastructure	77.10%

**41** Additional use of datasets enables the focus on sustainable materials, by helping us understand carbon/cost tipping points.

**42** Investors are increasing understanding the value of low capital carbon solutions. Being able to demonstrate savings and verification against PAS2080 allows access to green finance options. This was highlighted with us being the first utility to issue a sterling green bond in 2017. This leading position in the finance and investment community has been further re-enforced with the issue of sustainably linked bonds, with KPIs on both Net Zero carbon and capital carbon.

## Weaknesses

**43** There is currently a fragmented approach within the water sector in terms of approaches to capital carbon, ranging from limited experience through to global leadership. A future consistent methodology and framework across the sector will send strong signals to the supply chain, where innovations and opportunities need support in unlocking low carbon solutions.

**44** Additional carbon savings from the use of new materials, such as low carbon concretes, is progressing slowly. The low carbon concrete group, through BEIS and the Green Construction Board, published a low carbon concrete routemap in April 2022. However, sector demand for this type of material needs to be further enhanced amongst other infrastructure sectors to provide confidence for products suppliers to invest.

## Threats

**45** Lack of modelled carbon data for new products and techniques could provide a blocker to innovation as solutions engineers may be unable to compare the carbon impact against a standard solution.

**46** Through detailed analysis in collaboration with our supply chain, we have identified that reductions approaching or in excess of 72 per cent result in a carbon/cost tipping point, leading to higher cost solutions to achieve lower carbon outcomes.

## Accounting, performance and transfer pricing disclosures

RAG 3.13 specifies a number of statements, notes and other disclosures which the company should make. Some of these disclosures are also required by law or by conditions in Anglian Water's licence. In this section we set out those statements or explain where they can be found.

### Accounting disclosures

#### Statement on executive pay and performance

Section 35A of the Water Industry Act 1991 contains a requirement for companies to make a statement to Ofwat at the end of each financial year, regarding links between Directors' pay and standards of performance. Details of Directors' pay can be found in the Remuneration Report within the Annual Integrated Report (pages 132-152).

#### Statement on disclosure of information to auditors

In the case of each of the persons who are Directors at the time when the Report is approved under Section 418 of the Companies Act 2006 the following applies:

- So far as the Director is aware, there is no relevant audit information of which the Company's auditors are unaware; and
- He/she has taken all the steps that he/she ought to have taken as a Director in order to make himself/herself aware of any relevant audit information and to establish that the Company's auditors are aware of that information.

#### Statement on dividend policy for the appointed business

An £83.0 million prior year final appointed dividend was paid in the period (2021: £nil), reflecting the Company's dividend policy having regard to Anglian Water's purpose and duties under the company's Articles of Association.

In line with the dividend policy described below, a final dividend of £169.0 million relating to 2021/22 was paid in June 2022, a deduction of £9.0 million has been made to reflect the ODI penalty in the period. This decision is in combination with an equity injection of £1,165.0 million in the period and results in a net equity injection for the AMP of £899.7 million. Through these capital injections the Company continues to benefit from the strong support of shareholders who will, for the first time since 2017, receive a dividend: £91.8 million.

The Board has an approved dividend policy, under which dividend payments will be aligned to the performance of the business, taking into account commitments to customers and other stakeholders and ensuring that the Company can finance its operations. Anglian Water aims to attract long-term shareholders who support its long-term ambitions. The support of our shareholders is critical to the success of our business and to securing the investment that Anglian Water needs. Therefore, our shareholders are entitled to an appropriate return on their investment. This is delivered partly through long-term capital growth and partly through dividends.

The Company's dividend policy is to identify the cash available for distribution, allowing for the business's liquidity requirements in respect of funding its operations and the capital programme, and servicing its debt for the next 18 months. When considering a dividend, the Directors will consider the Business Plan, have regard to Anglian Water's purpose and reflect their duties under the Company's Articles of Association.

An assessment will be completed by the Board to determine if the payment or part payment of the dividend reflects and/or would compromise the long-term social, financial and operational commitments made to our stakeholders. Following this assessment and depending on the actual performance of Anglian Water, the Board can decide to increase or decrease any dividend payment from the base position. In assessing the dividend payment,



the Directors review the business performance forecasts (currently to the end of the AMP period of 31 March 2025) and give consideration to the potential impact of external factors in the economy and regulatory environment on the Company's forecast cash flows.

The dividend policy is also based on ensuring that there is adequate headroom in relation to all of Anglian Water's obligations to lenders, including commitments to comply with certain financial covenants. In particular, Anglian Water has committed to lenders that it will only pay dividends when key financial ratios are satisfied. Additionally, the policy sets out to ensure that key credit rating agency credit metrics required to support the capital structure as determined by the Board can be satisfied.

In its Articles of Association, the Company has committed to conduct its business and operations for the benefit of members as a whole, while delivering long-term value for its customers, the region and the communities it serves and seeking positive outcomes for the environment and society. In making decisions (including decisions in relation to dividend payments), Directors are required to act in the way that is considered most likely to promote the purpose of the Company. In doing so, Directors must have regard (among other things) to the likely consequences of any decision in the long term, the interests of the Company's employees, relationships with suppliers, customers and others, and the impact of the Company's operations on the community and the environment.

The Board will therefore consider if the payment or part payment of the dividend reflects or would be consistent with the long-term social, financial and operational commitments made to stakeholders, including customers, employees and pension fund holders. In considering this issue, the Board will have regard to the suite of Performance Commitments that the Company has made which include targets in relation to:

- Performance for customers (including, but not limited, to the customer measure of experience (CMeX) and the developer measure of experience (DMeX)).
- Operational commitments which are of importance to customers (including, but not limited to, commitments in relation to leakage, per capita consumption, water quality, interruptions to supply, and risk of low pressure).
- Wider social and environmental commitments (including, but not limited to, commitments in relation to vulnerable customers, sustainable abstraction, and community investment).

The overall amount of the Company's ordinary dividends will not exceed the free cash flow (defined as operating cash flow less interest and capital maintenance payments) generated by Anglian Water, and in practice will be limited by its current and forecast financial covenants. Special dividends may also be paid in addition to ordinary dividends, but these too are limited by specific financial covenant constraints. This policy is consistent with Condition F of the Licence. The full dividend policy is available on the Anglian Water website.

### **Accounting policy note for price control units**

In order to produce the APR and in addition to the accounting structure used for internal management reporting, we have created a separate regulatory cost structure in our financial system. This means that operating costs relating to water, wastewater and household retail price controls can largely be directly assigned. Where costs are not directly allocated to a specific price control, management has assessed an appropriate allocation in accordance with the regulatory accounting guidelines.

Capital expenditure is also largely directly attributable to price control. Where this is not possible, capital expenditure is assigned to the business unit of principal use with an appropriate recharge of depreciation charges for these shared assets made between price control segments in table 2A.

All cost allocations have been carried out in line with the guidance in RAG 2.09, with no material impact on the allocation of costs between price controls when compared to the previous year. More detail on our cost allocation processes can be found in our accounting methodology statement on our company website: [www.anglianwater.co.uk](http://www.anglianwater.co.uk).

## Revenue recognition note

The following detailed policy on revenue recognition supplements the turnover accounting policy within the statutory financial statements.

i. Occupied properties are chargeable for water and sewerage, and revenue is recognised based on services supplied. The identity of the occupier is ascertained by either contact initiated from the occupier, completion of a questionnaire sent out by the Company to the premises, a visit by a customer services representative or searches of available data. Unoccupied and unfurnished properties are vacant properties and deemed void, and therefore no billing is raised and no turnover recognised. The status of a property as vacant/void is confirmed by reading of the meter to ascertain changes in consumption, or in relation to unmeasured properties through providing a questionnaire for completion and return by any occupier, plus an inspection where considered necessary.

ii. Household and non-household charges apply to unoccupied premises in certain circumstances as set out in our Legal Charges Scheme, and revenue is recognised on these properties consistent with occupied properties. Unoccupied premises which attract charges include:

- premises which are left unoccupied for periods of time but are left with bedding, a desk or other furniture so that they may be used as a dwelling or as office or commercial premises
- premises where renovation or building work is being undertaken
- premises which are not normally regarded as being occupied such as cattle troughs and car parks
- all metered premises (furnished and unfurnished) where water is being consumed.

We classify properties as 'non-chargeable' on the basis that either:

- although the property is furnished, there is no consumption and the occupier is deceased, or the property is long term vacant (> 3 months) due to hospitalisation, admittance to a care home, imprisonment with HMPs, or the property is uninhabitable due to fire/flood; or
- the property is demolished and/or pending disconnection and removal of meter.

No charge is calculated for these premises and no bill issued. This is based on a "fairness" principle given that, whilst the property is connected, no service is provided.

Further, the following provisions are applied in respect of disconnections:

- Premises listed in Schedule 4A of the Water Industry Act 1991 (e.g. any dwelling occupied by a person as his or her only or principal home) cannot be disconnected for non-payment of charges.
- If the water supply to any premises is disconnected for any reason but we continue to provide sewerage services to those premises, the customer will be charged the appropriate sewerage tariff unless it can be demonstrated that the premises will be unoccupied for the period that the premises are disconnected, in which case there is no charge. Revenue is recognised for sewerage services up to the point we are aware the property becomes unoccupied.
- If it is subsequently found that the premises were occupied for any period when we were advised that the premises would be unoccupied, we will apply the appropriate sewerage tariff to that period, raise appropriate retrospective bills and recognise revenue at that point.
- In the event that we suspect that a property is occupied but we have no record of the occupier, we take steps to establish the identity of the occupier in order that billing can commence and revenue be recognised. 'Occupier' is defined to include any person who owns premises as set out in part (i) above, and also any person who has agreed with us to pay water supply and/or sewerage charges in respect of any premises (e.g. a Bulk Meter Agreement).



iii. Charges on income relating to debt recovery costs, which are chargeable to customers, are credited to operating costs and charged to the relevant customer account. Turnover is unaffected by these debt recovery costs. Historically, we have only sought to recover court and solicitors' fees where we have issued a County Court Claim. From 2009/10 the Legal Charges Scheme was amended to allow debt recovery agency fees to be recharged to customers.

iv. As soon as new properties are occupied and furnished or consumption is recorded, liability for water and sewerage charges commences, and revenue starts to accrue.

### **Use of social tariffs**

Anglian Water offers the LITE tariff to eligible customers. The tariff provides banded discounts of 25 per cent and 50 per cent to standard rate charges. Eligibility is based on individual financial assessment by our ExtraCare team using charges as a proportion of effective disposal income (net income after housing costs). The majority of applicants qualify for the discount of 50 per cent. Take up in the year was below the level forecast when we set charges, primarily as a consequence of the extension of furlough and other schemes that have protected income during the pandemic. When setting charges we looked to recover a cross subsidy of £12 for a dual service and £6 for a single service customer. The discount is fully funded by the customer cross subsidy, set following consultation in 2020.

To promote accessibility for vulnerable customers we offer additional practical support to a wide range of customers as part of our Priority Service register. The Priority Service register can provide support to our customers should their water stop, and we need to carry out a repair, including proactive contact and bottled water delivered to their door. We also provide additional services to help with managing their account, such as bills in alternative formats, translations services, help reading the meter, password schemes and our knock and wait service which can provide extra time for our customers to answer the door. During 2021/22 we increased the number of customers we support through our Priority Service register by over 100,000. The increase was as a result of our customer facing teams proactively responding to disclosures of vulnerability, promotional campaigns to increase awareness including newspaper, radio and pharmacy bags advertisements. We also disseminated information through our network of more than 150 partners who support those in vulnerable circumstances.

In 2021/22 we rolled out bespoke vulnerability training in partnership with the Money Advice Trust to our frontline teams, building their confidence and ability to encourage and handle sensitive disclosures. We made significant investments to our system to enhance the way in which we can capture and record vulnerability, supporting our "tell us once" approach. The changes made it quick and easy to register our customers for support and increased overall visibility of any support needs so that we can tailor our interactions and the help we provide. We also launched a number of key partnerships this year, such as our partnership with Cambridgeshire Fire & Rescue service; the initiative enabled our customers registered for Priority Services to benefit from free Safe & Well visits. We also worked closely with local government to help identify and distribute additional funding to support those most in need, as part of the Household Support Fund. Through the work we have done with councils we will distribute over £0.5 million in supporting our customers with water poverty.

### **Measured income accrual**

We highlight the following comments in respect of turnover for the year:

Appointed turnover for the year ended 31 March 2022 included a measured income accrual of £294.3 million (year ended 31 March 2021: £272.2 million). The value of billing recognised in the year ended 31 March 2022 for the prior year was £269.4 million. This has resulted in a recognition in the current year's turnover of an estimation difference for the prior year of £2.8 million (2020: £2.8 million) representing 0.2 per cent of turnover (2021: 0.2 per cent) and within acceptable tolerances for accounting estimates.

There have been no changes to the methodology used in calculating the measured income accrual from the prior year.

### **Capitalisation policy note**

The capitalisation policy applied to the APR is consistent with that used in the statutory accounts (accounting policy 1(k) of the Annual Integrated Report), with the exception of the capitalisation of interest. This has been excluded from the APR as per the guidance in RAG 1.09, section 4.8.

### **Bad debt note**

The Group assesses impairment of trade receivables on a collective basis and where they possess shared credit risk characteristics they have been grouped; these groups are residential, non-household and developer services, and other customers.

In particular, existing or forecast adverse changes in financial or economic conditions that are expected to cause a significant decrease in the debtor's ability to meet its debt obligations is taken into account when assessing whether credit risk has increased significantly since initial recognition.

The write off policy has been consistently applied throughout 2021/22. Debt is only written off after all available economic options for collecting the debt have been exhausted and the debt has been deemed to be uncollectable or is subject to a settlement agreement or forgiveness scheme. This may be because it is unrealistic, impractical, inefficient or uneconomic to collect the debt.

Situations where this may arise and where debt may be written off are as follows:

- Where the customer has absconded and attempts to trace the customers whereabouts prove unsuccessful.
- Where the customer has died without leaving an estate or has left an insufficient estate on which to levy execution.
- Where the debt is subject to insolvency proceedings and there are insufficient funds to settle the debt.
- Where the value and/or age of debt make it uneconomic to pursue.
- Where debt becomes statute barred.

We also write off debts following a settlement arrangement on an outstanding balance and for eligible customers on our debt forgiveness scheme (Back on Track) as part of payment matching.

The debt written off in the current year was £8.3 million (2021: £9.4 million). The reason for the decrease is that less debt met the write off criteria during the year. There have been no changes to our debt write off policy during the year.

### **Sufficiency of non-financial resources**

Condition P.14 of Anglian Water's licence requires that the Company must ensure that, as far as reasonably practicable, it has available to it sufficient rights and resources other than financial resources so that if, at any time, a special administration order were to be made in relation to it, the special administrator would be able to manage the affairs, business and property of the Company in accordance with the purposes of the special administration order. The Company was in compliance with this requirement at the end of the 2021/22 financial year.

**Ring-fencing certificate**

In accordance with condition P.30 of Anglian Water's licence, the Company has published a Ring-Fencing Certificate as part of its Annual Performance Report.

## **Tax strategy for the appointed business**

We have prepared a statement on tax and transparency which can be found on our website at [www.anglianwater.co.uk](http://www.anglianwater.co.uk) and is also included within the "Fair charges, fair returns" section of our Annual Integrated Report.

## **Statement on differences between statutory and RAG definitions**

Under the RAGs the classification of certain balances within the regulatory accounts differs from that disclosed in the statutory financial statements. Where differences in values due to differences in statutory and regulatory definitions are material, these have been explained in the commentary to tables 1A, 1B, 1C and 1D.

## **Long term viability statement**

Our long term viability statement is set out on pages 22-27 of this report.

## **Return on regulatory equity (RORE)**

Differences between RORE performance in 2021/22 and base RORE set out at the last price review have been explained in the commentary to Table 1F.

## **Infrastructure charges**

The Company has provided narrative on the variance between revenues and costs arising from providing infrastructure network reinforcement for developers in its commentary to table 2K.

## **Innovation competition**

All funding has been recovered through main charges. We do not receive any royalties.

In 2021/22 we were awarded:

1. £186,900 for the Whole Life Carbon project within the Innovation in Water Challenge.
2. £11,305,688 for the Safe Smart Systems and Triple Carbon Reduction projects within the Water Breakthrough Challenge (Awarded but not received until 2022/23 due to delays in MOSL transfer process).

Delivery of these projects is now underway.

In order to minimise project risks due to inflationary pressures and supply chain issues, work commenced on the Water Breakthrough Challenge projects prior to receipt of the funds as we were made aware of the delay. This risk mitigation approach was discussed directly with Nesta and the Innovation Team at Ofwat.

Included within the commentary to table 1C is the breakdown of the cash balance which relates to the innovation competition.

Narrative disclosures on performance

## **Outcomes**

We have provided narrative on its outcome performance in the commentary to tables in section 3 of this report. The information in section 3 is consistent with the information on outcome performance which we have provided to stakeholder groups such as the Independent Challenge Group (previously the Customer Engagement Forum) during the year and with the information published in our Annual Integrated Report.

**Totex**

We have provided narrative on our totex performance in the commentary to tables in section 4 of this report. This narrative includes explanation of:

- the difference between actual and allowed totex values
- costs which we believe to be exceptional or atypical
- links between outcome performance and expenditure
- any costs categorised as disallowable for cost sharing (e.g. fines)
- recharges between business units in respect of the 'principal use' of assets.

**Retail**

We have provided narrative on any material differences between our total operating costs and retail revenues allowed in price limits in our commentary to table 2C.

**Wholesale revenues**

We have provided narrative on differences between our actual and allowed revenue under the wholesale control in our commentary to table 2M. In this commentary we explain how we have allocated any penalty related to wholesale water revenue imbalances between the water resources and water networks plus price controls.

**Current tax analysis**

Our explanation of our current tax payment is set out in the commentary to table 1A, lines 12 and 13 and 4H line 18.

## Current tax reconciliation

A reconciliation of the appointed corporation tax (credit) reported in table 1A to that resulting from applying the standard rate of tax to the profit on ordinary activities before tax as shown in table 1A is set out below.

		Notes		£m
Profit per the Annual Performance Report				-142.099

Corporation tax charged at 19%				-27
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Depreciation and amortisation				54.9
Capital Allowances		(i)		-45.5
Capital Allowance superdeductions		(ii)		-7.6
Items not taxable		(iii)		-8.3
Items not deductible for tax purposes		(iv)		2.6
Capital grants and contributions		(v)		-4.9
Pension payments				-3.4
Change in general provision movements		(vi)		-1.7
Fair value losses on financial instruments (not deductible)				21.9
Transitional adjustment		(vii)		-9.9
Wholesale losses carried forward		(viii)		14.3
Adjustments in respect of previous years		(ix)		-5.1
Current tax (credit) for the year				-19.7

The table below sets out the reconciliation between the UK corporation tax (credit) reported in Table 1A to the total current tax charge allowed in price limits.

				£m
Tax charge in price limits at 19% and in 2017/18 prices				
Retail tax allowance				2.0
Wholesale tax allowance				0.0
				2.0

Tax effect at 19% and in 2017/18 prices of:				
Decrease in profits before tax				(3.6)
Decrease in disallowable depreciation and amortisation				(2.8)
Decrease in allowable amortisation on Intangible assets				0.1
Reduction in capital allowances		(i)		24.1
Capital allowances superdeduction		(ii)		(7.0)
Increase in items not taxable		(iii)		(6.9)
Increase in items not deductible for tax purposes		(iv)		0.2

Decrease in pension deductions				1.3
Decrease in change in general provision movements		(vi)		(1.6)
Transitional adjustment		(vii)		(9.1)
Decrease in wholesale losses carried forward		(viii)		(10.4)
Other				0.1
Current tax (credit) before adjustments for previous years at 19%				(13.6)
Adjustments in respect of previous years		(ix)		(4.7)

Current tax (credit) in APR at 2017/18 prices				(18.3)
Indexation up to Outturn prices				(1.4)
Current tax (credit) in APR				(19.7)

## Notes

- i. The reduction in capital allowances reflects disclaimers made to preserve tax deductions for future years. This is offset by additional tax relief available on some expenditure, differences in the forecast opening pool balances used in the price limits, capital expenditure incurred and allocation between capital allowance pools.
- ii. The Finance Bill 2021 introduced increased tax relief for capital expenditure incurred in the period up to 31 March 2023. This superdeduction represents the 30 per cent tax relief available in excess of the actual expenditure.
- iii. The items not taxable are income from adopted assets which are included in other income and profits arising on the sale of land.
- iv. Items not deductible for tax purposes mainly consist of depreciation on assets not eligible for capital allowances and compliance fines.
- v. The capital grants and contributions are included in other income but are treated as capital grants for tax purposes and deducted from additions to the short life asset capital allowance pool.
- vi. The change in general provisions mainly represents a partial release of a bad debt provision against the effects of Covid 19.
- vii. The transitional provision relates to a revised accounting treatment of the configuration and customisation costs in a cloud computing arrangement. Rather than tax relief being available over the estimated life of the assets to which they relate, the costs are deductible in the year of expenditure.
- viii. The calculation of tax in price limits assumed that all losses would be carried forward but we have surrendered some losses to other group companies.
- ix. The adjustments in respect of prior years relates to adjustments due to the agreement of prior year tax computations.

The main rate of corporation tax will increase from 19 per cent to 25 per cent on 1 April 2023.

Tax and Transparency

We have prepared a statement on tax and transparency which can be found on our website at [www.anglianwater.co.uk](http://www.anglianwater.co.uk), and is also included within the "an open and constructive approach" section of our Annual Integrated Report.

### **Interest**

We have provided analysis of our appointed interest expense and our appointed other interest expense in our commentary to table 1A.

### **Financial flows**

We have provided analysis of our financial flows in our commentary to table 1F.

### **Narrative on costs**

Where we have allocated costs to the 'freeform' lines in tables 4L and 4M we have provided commentary to explain them.

Where we have proportionally allocated costs between expenditure categories in tables 4L and 4M, or between enhancement and base expenditure, we have explained this in the commentary to those chapters.

In table 6A, where we have reported water treatment works that have not been used in the year but have not been decommissioned we have provided commentary to explain them.

We have explained how we have calculated population and household growth, including how we have taken account of the 2011 census, in the commentary to table 4R.

We have explained how we interpret 'structurally refurbished' in our commentary to table 7C. In the same commentary we have explained the methodology and assumptions we have used to estimate the length of rising main that has been replaced or structurally refurbished.

In our commentary to table 8A we have explained:

- the basis of its estimate of all the untreated sewage sludge produced by in-area wastewater treatment processes in the report year and which is produced as a result of treating non-appointed liquid wastes through appointed wastewater treatment assets
- how we have estimated the road distances travelled in reporting sludge inter-siting and biosolids disposal work done
- how we avoid double-counting of sludge quantities where both the incumbent and a third party service provider undertake different stages of sludge treatment, e.g. dewatering followed by lime stabilisation
- the basis of our estimate of total sewage sludge produced from non-appointed liquid waste treatment.

In our commentary to table 7D we have reported the the population equivalents served by sewage treatment works (STWs) at which the required output has been delivered primarily by an opex solution.

In our commentary to table 4R we have explained our methodology to calculate non-resident population.

### **Supply-demand balance and metering**

In our commentary to table 4L we have commented on progress in delivering long term improvements to the supply-demand balance and strategic regional water resource solutions, including explanation of any variances from our business plan and water resources management plan proposals.



In our commentary to 6C.25 we have commented on progress in delivering our internal interconnection programme, including detail of installed pipe material, length, diameter and capacity and explanation of any variances from our business plan and water resources management plan proposals.

In our commentary to table 6B we have explained any variances in reported leakage from our business plan and water resources management plan proposals.

In our commentary to table 6D we have included narrative commentary explaining the smart metering technologies we are utilising and the capabilities and benefits these provide. We also explain how the metering and leakage figures reported in table 6D relate to our business plan and water resources management plan forecasts.

### **Analysis of debt**

In our commentary to table 1E we have provided reconciliations to explain the reason for any differences between comparable lines in tables 1E and 4B. We have also provided an explanation where we have inserted a restated gearing level in line 8.

### **Common performance measures**

There is no shadow reporting of common performance measures in this year's Annual Performance Report. We have commented on our compliance with performance commitment definitions where relevant.

### **Board statement on accuracy and completeness of data and information**

Our statement is set out on pages 10-11 of this report.

### **Return on regulatory equity**

We have explained any exceptional items included in our calculation of RORE in our commentary to table 1F.

### **Financial derivatives**

We have provided information on other derivatives in table 4I and enables a full reconciliation with table 1C.

### **Social tariffs**

We have provided information on the use of social tariffs or the other forms of assistance we provide to improve affordability and accessibility for vulnerable customers in our commentary to 2N.

### **Transactions between the appointee and associate companies**

The Company's activities are regulated by the conditions of the Licence granted to the Company by the Secretary of State for the Environment. With certain exceptions, the regulatory provisions do not apply to business activities which are not connected with the carrying out of the water and sewerage function; these business activities are referred to as non-appointed business.

Non-appointed business activities include legal searches to locate utility infrastructure, domestic emergency and personal accident insurance cover, recreation services, leisure services and the provision of consultancy services. The North Tees water supply agreement to the Huntsman Petrochemical site, which is not in the Anglian Water area, has also been treated as non-appointed business.

Approximately 95 per cent of the operating costs relating to these activities is directly incurred and does not require allocation. Other relevant costs have been allocated according to time spent on these activities, volume of water supplied to customers, or in proportion to direct costs.

We also charge costs to other parts of the organisation that sit outside the regulated business. In these cases, the guidance provided by RAG5 is followed, with costs charged on an arms-length basis, either as a cost pass through or via an hourly rate.

To the best of the Directors' knowledge, all appropriate transactions with associated companies have been disclosed in notes (a) to (g) below.

#### **(a) Receivables**

Receivables totalling £1.4 million were outstanding from other Group companies at 31 March 2022 (2021: £0.1 million).

#### **(b) Payables**

An amount payable of £46.4 million was owed to Anglian Water Services Financing Plc at 31 March 2022 (2021: £23.7 million). Payables totalling £0.7 million were owed to other group companies at 31 March 2022 (2020: £1.2 million).

#### **(c) Borrowings**

Sums borrowed, including accrued indexation by the appointee from Anglian Water Services Financing Plc at 31 March 2022, are set out in full in our Annual Integrated Report, note 19, which can be found on the AWS website:

<https://www.anglianwater.co.uk/about-us/our-reports/>

#### **(d) Guarantees/securities**

The Company, as part of the Anglian Water Services Financing Group, guarantees unconditionally and irrevocably all the borrowings and derivatives of Anglian Water Services Financing Plc, which at 31 March 2022 amounted to £7,709.5 million (2021: £7,921.6 million). The borrowings of Anglian Water Services Holdings Limited and Anglian Water Services UK Parent Co Limited are also guaranteed unconditionally and irrevocably by the Company. Anglian Water Services Holdings Limited and Anglian Water Services UK Parent Co Limited had no outstanding indebtedness at 31 March 2022 (2021: £nil).

#### **(e) Supply of services**

In order to achieve economies of scale across the Anglian Water Group, some services are provided to associated companies by the appointed business. We ensure that the cost of any services provided to associated businesses are fully recovered including an element of overhead costs. There has been a slight increase in recharges from the prior year as we have moved a number of employees back into the regulated business who spend a small amount of their time on the non-regulated business activities.

Recharges by the appointee to associated companies during 2021/22:

Service Provided	Company	Turnover of Associate £m	Terms of supply	Value £m
HR, Payroll, OHS, Regulation	AWG Group Ltd	-	Actual Costs	0.354
Strategic Delivery and Commercial Assurance	AWG Group Ltd	-	Actual Costs	0.046
Strategic Delivery and Commercial Assurance	AWG Land Holdings Ltd	16.161	Actual Costs	1.574
Brand and Communication	AWG Group Ltd	-	Actual Costs	0.154
Finance	AWG Group Ltd	-	Actual Costs	0.24
IT	AWG Group Ltd	-	Actual Costs	0.136
IT	Anglian Venture Holdings Ltd	-	Actual Costs	0.066
Accommodation - Lancaster House	AWG Group Ltd	-	Actual Costs	0.121

Accommodation - Osprey House	Anglian Venture Holdings Ltd	-	Actual Costs	0.191
Land rental	Alpheus Environmental Ltd	8.135	Actual Costs	0.193
Vehicle Costs	AWG Group and Alpheus Environmental Ltd	-	Actual Costs	0.074
Tide recharge	Tide Services Ltd	6.618	Actual Costs	0.027
Total		8.135		3.177
Corporation tax group relief surrendered by the regulated business	AWG Group Limited	-	See note 1 below	13.600

The losses surrendered to AWG Group Limited are provided for at a rate of 19 per cent. AWS already has a liability to pay for losses surrendered to it in earlier years. There is an agreement that AWS will not have to pay for these losses until it receives the benefit of the capital allowances that were disclaimed in order to generate the taxable profits against which the surrendered losses could be utilised. The losses incurred this year will reduce the liability for prior years and so will give rise to lower payments to other group companies in future years.

## Recharges by associated companies to the appointee during 2021/22:

Nature of transaction	Company	Turnover of associated Co £m	Terms of supply	Value £m
Directors' costs	AWG Group	-	Time apportioned	0.0603
CEO costs	AWG Group	-	Time apportioned	1.1226
CFO	AWG Group	-	Time apportioned	0.7306
Treasury services	AWG Group	-	Time apportioned	0.7873
IS services	AWG Group	-	Time apportioned	0.3183
Corporate Affairs services	AWG Group	-	Time apportioned	0.1889
Health and Safety services	AWG Group	-	Time apportioned	0.3508
Legal services	AWG Group	-	Time apportioned	0.2899
HR services	AWG Group	-	Time apportioned	0.3176
Property services	AWG Group	-	Time apportioned	0.0460
Strategy and Risk	AWG Group	-	Time apportioned	0.2291
Internal audit services	AWG Group	-	Direct	0.3824
Insurance administration	AWG Group	-	Negotiated	0.4364
Group Life Assurance	AWG Group	-	Pass through	0.6322
Income Protection costs	AWG Group	-	Pass through	1.7652
Taxation services	AWG Group	-	Direct	0.2903
External audit services	AWG Group	-	Direct	0.2507
Pension admin, advice and audit	AWG Group	-	Pass through	-
Miscellaneous items	AWG Group	-	Pass through	0.0638
Office accommodation - Lancaster House	Ambury Developments Ltd	8.928	Other market testing	0.1067
Office accommodation - Lancaster House	OHL Piper Ltd	1.397	Other market testing	0.3970
Bulk purchase of water	Ardleigh reservoir committee	1.584	Actual costs	1.0208
			Total	<b>9.787</b>

Services provided by the non-appointed business:

Service provided by the non-appointed business	Basis of recharge made by the appointed business	Value of the recharge made by the appointed business (£m)
Treatment of tankered waste	Recharge to non-appointed is based on full cost including fixed and variable costs, depreciation and financing	3.745
Others	Key activates include mapping and data services, recreation facilities and wind turbines. The recharges made to the non-appointed business have been delivered on a bottom-up basis to include recovery of the fixed and variable costs along with an appropriate share of the depreciation and financing costs. A positive margin is made on this activity. Approximately £1.4 million of the reported costs are related to depreciation and financing recharges.	11.782
Total non-appointed operating costs		15.526

#### **(f) Omissions of rights**

No material omissions took place during the year.

#### **(g) Waivers**

There were no material waivers during the year.

#### **Conduct of the appointed business**

Condition P of Anglian Water's licence requires that the company meets the objectives on Board Leadership, Transparency and Governance (BLTG) which are also set out in Condition P. The company has adopted the BLTG principles into its Corporate Governance Code. Its Corporate Governance report is in its Annual Integrated Report.

Ofwat's Principles on BLTG require that the Board submits an annual statement which sets out how the company has set its aspirations and performed for all those it serves. This statement is included in pages 14-21 of this APR.

## Data Assurance Summary

### Introduction

We understand that customers and other stakeholders want information about our performance and that the information needs to be accessible and understandable. We are committed to providing information that is reliable and can be trusted.

Our overall approach to assurance is set out in *Our Assurance Framework* which can be viewed on the Anglian Water website. This submission has been completed within that framework.

### General assurance processes

We have a company wide Business Management System (BMS) that is certified to the ISO 9001 quality management systems standard, whose scope includes the processes for ensuring the collection and storage of reliable performance data. We have established processes and procedures that we adopt when compiling performance data for publication into the public domain:

- Roles and responsibilities are established, including the allocation of named data providers for each line of data
- Methodologies for compiling data are documented in procedures if necessary
- Draft data and commentaries are reviewed by individuals (including senior managers), who are independent of the processes being reviewed
- Final data and commentaries are signed off by the individuals who are assigned by the risk assessment rating determined for each individual line
- Data may be subject to review by our third party assurance provider, Jacobs, or our independent financial auditors, Deloitte. Our use of third parties as part of the assurance process is informed by our assessment of risks to data quality.

### Specific assurance processes for 2021/22 performance information

As described in *Our Assurance Framework*, central to our assurance process is our assessment of the risk of data error for each piece of reported data. In consultation with our assurance provider, Jacobs, we amended the risk assessment questions and scoring metrics for 2021/22 and completed process risk and control (PRC) documents for the higher risk lines. This ensures that our regulatory risk assessment process places a greater focus on where risks sit within the data production and reporting processes. We met with all line providers to apply the revised risk assessment to ensure our new risk ratings are accurate.

### Annual Performance Report (APR) Non-financial data

Our assurance programme for non-financial aspects of our APR comprised three stages this year.

### Review of the risk assessment scores

We asked Jacobs to review the ratings we had determined against our revised risk assessment framework and consider whether the answers to the risk assessment questions align with their knowledge of our processes, and whether the potential impact of risks has been appropriately represented in the risk rating score.

## Review and Development of PRC documents

At the start of the year, in conjunction with our line providers, Jacobs reviewed 16 existing process risk and control (PRC) documents. Four new PRC documents were created across eight data lines. The PRC framework is a structured approach which requires us to

- Set out each step in the data collection process
- For each step, identify the risks to data quality
- For each risk, identify the controls in place as mitigation and the strength of those controls.

The PRC documents allow us to identify the highest areas of risk in the process and target areas of focus for the year-end audits. It also shows us where we may need to strengthen our controls.

## Year-end assurance

### Internal assurance reviews

All data and commentary for the APR were reviewed by a colleague who is independent of the team and process which generates the information. These reviews allow us to sense-check to draft submission, understand the reasons for material variances from prior years and apply cross-checks to information in other parts of the Return.

### External assurance reviews

As described above, external reviews were commissioned for a subset of non-financial APR lines, selected according to their risk ratings. Most reviews were conducted by Jacobs, though we used other specialist auditors in specific areas (see table below). The standard terms of reference of these reviews were to:

- Review the company's methodologies and procedures for identifying, analysing and recording data and, on a sample basis, test the application of those methodologies and procedures.
- Provide an opinion on the adequacy of the methodologies and procedures adopted by the company to provide reliable information.
- Alert the company to any material areas of concern or weakness observed.
- Review progress against issues raised in the last audit.
- Review whether the APR procedures and any associated local procedures / work instructions are current, accurate and appropriate.
- Check that data stated in the tables is supported by audit trails which are reliable, accurate and complete.
- Check that suitable commentary is provided which explains performance.
- Confirm that changes from previous submissions have been adequately explained.
- Seek understanding of the upstream processes which generate data and the controls in place for ensuring the reliability of those data. Test where possible.
- Where applicable, the auditor should focus on the identified targeted areas that are set out in the Process Risk & Control (PRC) document.
- Where applicable, the audit should provide an opinion on the way that risk is described within the PRC document.

The reviews were carried out between April and June 2022. The results of each review were documented in summary audit reports, including information about the tests applied and the results, along with details of recommendations for longer term improvements. Any outstanding data issues were addressed prior to finalising the data.

A summary of the findings of Jacobs' reviews is set out in their Technical Assurance Executive Summary. A summary of all the year-end assurance reviews and their key findings is listed in the Appendix.

Due to a conflict of interest on the Strategic Pipeline Alliance (SPA), Jacobs did not conduct the audit for 3A.13 - Internal interconnection delivery. This audit was completed by Aqua Consultants in May 2022 and the standard terms of reference were provided.

#### Director sign-off

As set out in *Our Assurance Framework*, the sign-off protocols which form part of our assurance process are based on our data quality risk assessment. All APR data lines are approved by the nominated 'line approver', who is a different individual from the one who provided the data. Further sign-off is required for higher risk data lines by the Head of Business Unit (for lines rated as Medium risk) or Management Board Director (where the rating is High or Critical). These protocols were all applied to the 2021/22 APR.

At the AWS Board on 25 May 2022 the Board delegated authority to certain directors to approve the final versions of the APR including all disclosures. Final drafts of the APR were approved by the company's Executive Directors on 13 July 2022.

#### **APR Financial data**

Our Regulatory Accounts have been prepared in accordance with the Regulatory Accounting Guidelines issued by Ofwat. In accordance with our plan, they were subject to review by the company's independent financial auditors, Deloitte, to ensure compliance with Condition F of the Instrument of Appointment as a water and sewerage undertaker under the Water Industry Act 1991.

The review took the following form:

- Audit of APR Tables 1A-1E, lines 1F.1 to 1F.3, 1F.5 to 1F.8, 1F.12 to 1F.14, 1F.21 to 1F.22 and 1F.24 to 1F.26 of the statement of financial flows (table 1F) and 2A-2O. Deloitte's audit was conducted in accordance with International Standards on Auditing (UK) issued by the Financial Reporting Council, and included such tests of transactions and of the existence, ownership and valuation of assets and liabilities as they considered necessary. Deloitte planned and performed their audit to be able to provide reasonable assurance that the regulatory accounting statements are free from material misstatement and are properly prepared in accordance with Regulatory Licence Condition F.
- In line with the approach last year, in order to provide more robust assurance, Deloitte conducted audits on the financial data in tables 4D, 4E, 4F, 4H (excluding line 5), 4I, 4J and 4K.
- It is important to us that our Annual Performance Report (APR) to Ofwat is completed accurately and in line with the guidance provided (Ofwat Guidance RAG 4.10). We have obtained assurance over the majority of the values to be submitted which includes an opinion from Deloitte, our external auditors, of certain financial values. However, Deloitte have identified certain data within Table 1F (Financial Flows) that they consider to be outside the scope of their opinion. We have therefore requested they perform a series of agreed upon procedures over these remaining values to confirm the values entered into the prescribed fields of the Table 1F have been accurately drawn from the relevant data source.

Our auditor has provided its audit opinion that our Regulatory Accounting Statements have been prepared in all material respects, in accordance with Condition F, the Regulatory Accounting Guidelines as issued by Ofwat, and the accounting policies. The full audit opinion is included in our APR.

The first line of defence against data error lies in the processes that we follow to prepare our regulatory accounts tables. The following table reports the risks we have identified around our processes that could, without controls, result in mis-statement in our APR. It also shows the controls we have implemented for 2021/22 reporting.



**Feedback**

We welcome feedback from stakeholders on all aspects of our performance reporting. You can contact us in any of the following ways:

- email: [Stakeholderfeedback@anglianwater.co.uk](mailto:Stakeholderfeedback@anglianwater.co.uk)
- call: 03457 91 91 55

We undertake to share the feedback we receive and explain how we have responded to it.

## Appendix: Summary of assurance reviews carried out in 2021/22

The tables below shows the assurance activities carried out during 2021/22. All of our audits were carried out at year-end by our external assurance provider Jacobs.

Auditor	Table numbers	Topic	Comments
Achilles	3A	Carbon	No material issues.
Jacobs	3A	Percentage of population supplied by a single supply system	No material issues.
Aqua	3A	Internal Interconnectors	Recommendation to investigate and if appropriate apply measures that will mitigate against cost rises and potential delays.
Jacobs	3A	Cyber Security	Assessed that risk assessment follows best practice and agreed that risk categories assigned appear appropriate. No action plan obligations completed.
Jacobs	3E	Helping those struggling to pay	No material issues.
Jacobs	3E	Community investment	No material issues.
Jacobs	3A, 3F, 6B, 6D	Leakage/Water balance information	No material issues.
Jacobs	5A	Abstraction	No material issues.
Jacobs	3B, 3G	Sewer flooding	No material issues.
Jacobs	4Q, 4R	New connections	Commentary to include specifics on calculation.
Jacobs	8C	Liquor costs	Recommendation made for improving the estimation of volumes.
Jacobs	6C, 7C	Length of mains and sewers	All steps in the new scripted process for water mains were reviewed with a number of non-material observations and recommendations for improvement.
Jacobs	3A, 3F	Interruptions to Supply (I2S)	No material issues.
Jacobs	8C	Bioresources energy	No material issues.
Jacobs	4R, 5A, 6A, 6D	Raw water, resident population and supply demand	No material issues.
Jacobs	3A, 3E, 3F, 6C	Water mains	No material issues.
Jacobs	7B, 7C, 7D, 7E	Consents, overflows & flow monitoring	Procedure to be updated to reflect APR 2022 queries.
Jacobs	7D, 7E	Environmental outputs	No material issues.
Jacobs		Smart metering delivery	Procedure document updated following the audit.
Jacobs	3E, 3I	Flooding resilience	Recommendation to check that the APR22 results for aggregated models match those for APR21 when respective separate models are summed.
Jacobs	4R	Business customers and properties	No material issues.
Jacobs	5A, 6A, 6B, 7E, 8C	Energy	No material issues.

## Independent Auditors' Report

### Independent Auditor's report to the Water Services Regulation Authority (the WSRA) and the Directors of Anglian Water Services Limited

#### Opinion

We have audited the sections of Anglian Water Services Limited's ("the Company") Annual Performance Report for the year ended 31 March 2022 ("the Regulatory Accounting Statements") which comprise:

- the regulatory financial reporting tables comprising the income statement (table 1A), the statement of comprehensive income (table 1B), the statement of financial position (table 1C), the statement of cash flows (table 1D), the net debt analysis (table 1E), Lines 1F.1 to 1F.3, 1F.5 to 1F.8, 1F.12 to 1F.14, 1F.21 to 1F.22 and 1F.24 to 1F.26 of the statement of financial flows (table 1F); and
- the regulatory price review and other segmental reporting tables comprising the segmental income statement (table 2A), the totex analysis for wholesale water and wastewater (table 2B), the operating cost analysis for retail (table 2C), the historical cost analysis of tangible fixed assets for wholesale and retail (table 2D), the analysis of grants and contributions (table 2E), household revenues by customer type (table 2F), the non-household water revenues by customer type (table 2G), the non-household wastewater revenues by customer type (table 2H), the revenue analysis & wholesale control reconciliation (table 2I), the infrastructure network reinforcement (table 2J), the infrastructure charges reconciliation (table 2K), the analysis of land sales (table 2L), the revenue reconciliation for wholesale (table 2M), residential retail social tariffs (table 2N) and historic cost analysis of intangible fixed assets (table 2O); and
- the wholesale totex analysis – water (table 4D), the wholesale totex analysis – wastewater (table 4E), the financial metrics (table 4H excluding line 5), the Financial derivatives (table 4I), the Base expenditure analysis – water resources and water network + (table 4J), the Base expenditure analysis – wastewater network + and bioresources (Table 4K).

We have not audited lines 1F.4, 1F.9 to 1F.11, 1F.15 to 1F.20 and 1F.23 of the statement of financial flows (table 1F), the Outcome performance table (tables 3A to 3I) or the additional regulatory information in tables 4A to 4C, 4F to 4G, 4L to 4U, 5A to 5B, 6A to 6F, 7A to 7F, 8A to 8D, 9A, 10A to 10E and 11A.

In our opinion, Anglian Water Services Limited's Regulatory Accounting Statements have been prepared, in all material aspects, in accordance with Condition F, the Regulatory Accounting Guidelines issued by the WSRA (RAG 1.09, RAG 2.09, RAG 3.13, RAG 4.10 and RAG 5.07) and the accounting policies (including the Company's published accounting methodology statement(s), as defined in RAG 3.13, appendix 2), and available on the Company website at <https://www.anglianwater.co.uk/about-us/our-reports/> as set out in the notes to the Annual Performance Report.

#### Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ("ISAs (UK)"), including ISA (UK) 800, and applicable law, except as stated in the section on Auditors' responsibilities for the audit of the Regulatory Accounting Statements below, and having regard to the guidance contained in ICAEW Technical Release Tech 02/16 AAF 'Reporting to Regulators on Regulatory Accounts' issued by the Institute of Chartered Accountants in England & Wales.

Our responsibilities under ISAs (UK) are further described in the Auditors' responsibilities for the audit of the Regulatory Accounting Statements within the Annual Performance Report section of our report. We are independent of the Company in accordance with the ethical requirements that are relevant to our audit, including the Financial Reporting Council's

(FRC's) Ethical Standard as applied to public interest entities, and we have fulfilled our ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

### **Emphasis of matter – special purpose basis of preparation**

We draw attention to the fact that the Regulatory Accounting Statements have been prepared in accordance with a special purpose framework, Condition F, the Regulatory Accounting Guidelines, the accounting policies (including the Company's published accounting methodology statement(s), as defined in RAG 3.13, appendix 2) set out in the statement of accounting policies and under the historical cost convention. The nature, form and content of the Regulatory Accounting Statements are determined by the WSRA. As a result, the Regulatory Accounting Statements may not be suitable for another purpose. It is not appropriate for us to assess whether the nature of the information being reported upon is suitable or appropriate for the WSRA's purposes. Accordingly we make no such assessment. In addition, we are not required to assess whether the methods of cost allocation set out in the accounting methodology statement are appropriate to the circumstances of the Company or whether they meet the requirements of the WSRA.

The Regulatory Accounting Statements are separate from the statutory financial statements of the Company and have not been prepared under the basis of international accounting standards in conformity with the requirements of the Companies Act 2006 ("UK IASs"). Financial information other than that prepared on the basis of UK IASs does not necessarily represent a true and fair view of the financial performance or financial position of a Company as shown in statutory financial statements prepared in accordance with the Companies Act 2006.

The Regulatory Accounting Statements on pages 42 to 172 have been drawn up in accordance with Regulatory Accounting Guidelines with a number of departures from IASs. A summary of the effect of these departures in the Company's statutory financial statements is included in the tables within section 1.

Our opinion is not modified in respect of this matter.

### **Conclusions relating to going concern**

In auditing the Regulatory Accounting Statements, we have concluded that the directors' use of the going concern basis of accounting in the preparation of the Regulatory Accounting Statements is appropriate.

Our evaluation of the directors' assessment of the company's ability to continue to adopt the going concern basis of accounting included:

- Understanding management's process to model the impact of going concern and agreeing relevant data points in the model to supporting documentation;
- Assessing the sophistication of the model used to prepare the forecasts, testing of the clerical accuracy of those forecasts and assessing the historical accuracy of forecasts prepared by management;
- Assessing the assumptions used in establishing management's base case, including comparison of key assumptions to independent data sources where relevant;
- Evaluating liquidity, including in the scenario where future financing is restricted;
- Evaluating the external financing to establish and assess the covenant requirements attached to this financing;
- Assessing the amount of headroom in the forecasts (cash and covenants); and
- Evaluating the sensitivity analysis prepared by management.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the company's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

Our responsibilities and the responsibilities of the directors with respect to going concern are described in the relevant sections of this report.

### **Other information**

The other information comprises all of the information in the Annual Performance Report other than the Regulatory Accounting Statements and our auditors' report thereon. The directors are responsible for the other information. Our opinion on the Regulatory Accounting Statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the Regulatory Accounting Statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the Regulatory Accounting Statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If we identify an apparent material inconsistency or material misstatement, we are required to perform procedures to conclude whether there is a material misstatement of the Regulatory Accounting Statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of the other information, we are required to report that fact.

We have nothing to report based on these responsibilities.

### **Responsibilities of the Directors for the Annual Performance Report**

As explained more fully in the Statement of Directors' Responsibilities set out on page 28, the directors are responsible for the preparation of the Annual Performance Report in accordance with the Regulatory Accounting Guidelines issued by the WSRA and the Company's accounting policies (including the Company's published accounting methodology statement(s), as defined in RAG 3.13, appendix 2).

The directors are also responsible for such internal control as they determine is necessary to enable the preparation of the Annual Performance Report that is free from material misstatement, whether due to fraud or error.

In preparing the Annual Performance Report, the directors are responsible for assessing the Company's ability to continue as a going concern, disclosing as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the Company or to cease operations, or have no realistic alternative but to do so.

**Auditors' responsibilities for the Audit of the Regulatory Accounting Statements within the Annual Performance Report**

Our objectives are to obtain reasonable assurance about whether the Regulatory Accounting Statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the Regulatory Accounting Statements.

Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect material misstatements in respect of irregularities, including fraud. The extent to which our procedures are capable of detecting irregularities, including fraud, is detailed below.

We considered the nature of the company's industry and its control environment, and reviewed the company's documentation of their policies and procedures relating to fraud and compliance with laws and regulations. We also enquired of management about their own identification and assessment of the risks of irregularities.

We obtained an understanding of the legal and regulatory frameworks that the company operates in, and identified the key laws and regulations that:

- had a direct effect on the determination of material amounts and disclosures in the Regulatory Accounting Statements. These included Regulatory Accounting Guidelines as issued by the WRSAs, UK Companies Act, pensions legislation and tax legislation; and
- do not have a direct effect on the Regulatory Accounting Statements but compliance with which may be fundamental to the company's ability to operate or to avoid a material penalty. These included the company's operating licence, regulatory solvency requirements and environmental regulations.

In common with all audits under ISAs (UK), we are also required to perform specific procedures to respond to the risk of management override. In addressing the risk of fraud through management override of controls, we tested the appropriateness of journal entries and other adjustments; assessed whether the judgements made in making accounting estimates are indicative of a potential bias; and evaluated the business rationale of any significant transactions that are unusual or outside the normal course of business.

In addition to the above, our procedures to respond to the risks identified included the following:

- reviewing financial statement disclosures by testing to supporting documentation to assess compliance with provisions of relevant laws and regulations described as having a direct effect on the financial statements;
- performing analytical procedures to identify any unusual or unexpected relationships that may indicate risks of material misstatement due to fraud;
- enquiring of management and in-house legal counsel concerning actual and potential litigation and claims, and instances of non-compliance with laws and regulations; and
- reading minutes of meetings of those charged with governance and reviewing any correspondence with HMRC and WRSAs.

A further description of our responsibilities for the audit of the Regulatory Accounting Statements is located on the Financial Reporting Council's website at [www.frc.org.uk/auditorsresponsibilities](http://www.frc.org.uk/auditorsresponsibilities). This description forms part of our auditor's report.

## **Use of this report**

This report is made, on terms that have been agreed, solely to the Company and the WRSAs in order to meet the requirements of Condition F of the Instrument of Appointment granted by the Secretary of State for the Environment to the Company as a water and sewage undertaker under the Water Industry Act 1991 ("Condition F"). Our audit work has been undertaken so that we might state to the Company and the WRSAs those matters that we have agreed to state to them in our report, in order (a) to assist the Company to meet its obligation under Condition F to procure such a report and (b) to facilitate the carrying out by the WRSAs of its regulatory functions, and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Company and the WRSAs, for our audit work, for this report or for the opinions we have formed.

Our opinion on the Regulatory Accounting Statements is separate from our opinion on the statutory financial statements of the Company for the year ended 31 March 2022 on which we reported on 15 June 2022, which are prepared for a different purpose. Our audit report in relation to the statutory financial statements of the Company (our "Statutory audit") was made solely to the Company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our Statutory audit work was undertaken so that we might

state to the Company's members those matters we are required to state to them in a statutory audit report and for no other purpose. In these circumstances, to the fullest extent permitted by law, we do not accept or assume responsibility for any other purpose or to any other person to whom our Statutory audit report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

**Deloitte LLP**

London, United Kingdom

13 July 2022

## Technical Assurance Executive Summary

### Terms of Reference and Assurance Approach

**1** Anglian Water Services Limited ('Anglian Water') commissioned Jacobs UK Ltd to provide independent technical assurance on selected non-financial data tables/lines for its 2022 Annual Performance Report (APR). This information is part of Anglian Water's APR which Ofwat requires all companies to publish by July 2022. The APR is a collection of data and commentary relating to Anglian Water's performance in defined areas, including the Performance Commitments (PCs) for 2021/22. Anglian Water's PCs are defined in Ofwat's PR19 Final Determination.

### Risk Assessment

The Economic Regulation team in Anglian Water updated the regulatory risk assessment process to be able to place a greater focus on where risks sit within the data production and reporting processes for APR22. In October 2021, the team shared the revised approach with the Jacobs Assurance team and sought our feedback on the nature of the risk assessment questions that are now being used. Anglian applied this this updated risk assessment process to its regulatory reporting processes and completed some 80 assessment meetings with data providers and data owners, covering 479 APR lines. This produced a new risk profile which was shared with us in December 2021.

Anglian Water requested Jacobs to carry out a desktop review of the risk assessment scores for 74 data lines to sense check them against the context for the lines and our auditors' knowledge of Anglian's processes and procedures. In addition, we were asked to review the Process, Risks & Controls (PRC) assessment for 16 PCs and develop new PRC assessments for 8 PCs that didn't have one. This work was completed in March 2022 where we made a number of recommendations which have been factored into the data lines we were requested to assure.

We complete a total of 17 external audits in May and June 2022. All audits took place remotely using MS Teams except for the leakage data audit. We had access to most corporate systems. Where this was occasionally limited because of remote working, Anglian's teams provided screenshot evidence following the audit. Our audits included information for the Hartlepool region.

The purpose of the year end audit was to provide assurance that the processes and systems of control for generating data included in the Company's APR are adequate and that the resulting data can be reliably used for describing performance and managing the business. Anglian Water issued Terms of Reference for the scope of assurance work which required us to:

- Review the company's methodologies and procedures for identifying, analysing and recording data and, on a sample basis, test the application of those methodologies and procedures.
- Provide an opinion on the adequacy of the methodologies and procedures adopted by the company to provide reliable information.
- Alert the company to any material areas of concern or weakness observed.
- Review progress against issues raised in the last audit.
- Review whether the APR procedures and any associated local procedures / work instructions are current, accurate and appropriate.
- Check that data stated in the tables is supported by audit trails which are reliable, accurate and complete.
- Check that suitable commentary is provided which explains performance.
- Confirm that changes from previous submissions have been adequately explained.
- Seek understanding of the upstream processes which generate data and the controls in place for ensuring the reliability of those data. Test where possible.



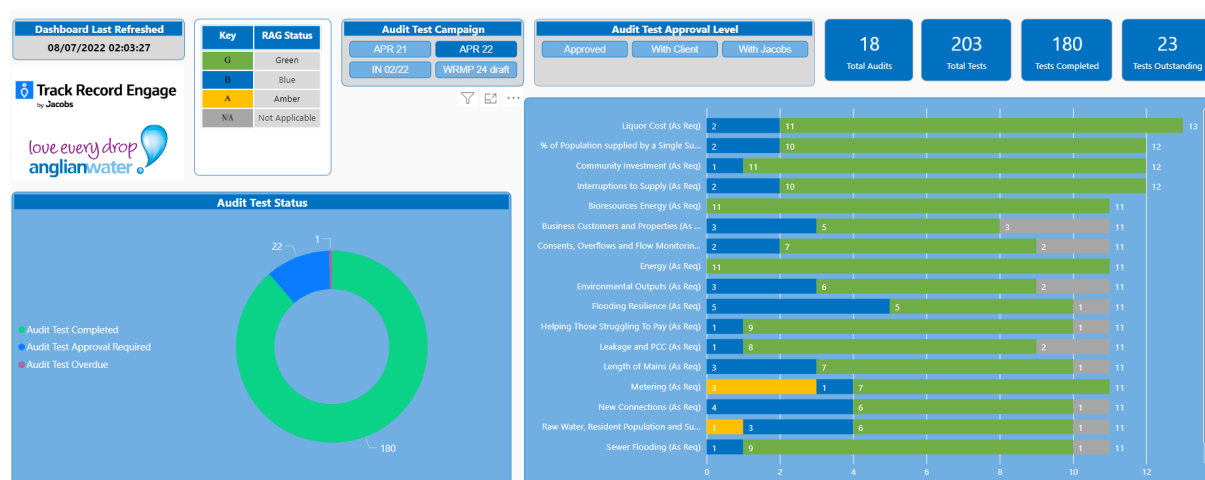
The technical assurance team comprised technical and operational specialists led by the Assurance Director. We used risk-based samples to trace data to source.

## Track Record

Audit results have been documented using Jacobs' Track Record system which is our online audit database which stores audit results, summarises the issues identified and enables Anglian and Jacobs to track progress of the audit programme through Power BI dashboards. Track Record has been implemented for the first time this year and contains APR21 and APR22 audit findings. Our audit findings are RAG rated as:

Material concerns (Red), Minor concerns (Amber), No concerns (Green) and, Non-material observations/recommendations (Blue).

A summary of the Track Record Power BI dashboard for APR22 as of 8<sup>th</sup> July 2022 is below.



## Audit Opinion and Conclusion

Based on sample checks, we are satisfied that for the Ofwat APR data lines and PCs we were asked to assure, there are no material issues with the reported information. We have made observations detailed in Key Findings (identified as 'Amber' and 'Blue'). We have highlighted a number of non-material observations and recommendations for Anglian Water's consideration. These are either work in progress by Anglian Water or opportunities to improve processes to provide further confidence in resulting data for the Company to consider.

We noted several areas of good practice or improvements that have been made in the year following investments made by the Company. We noted a small number of methodologies require updating, and some reliance on manual processes could be automated eliminating the potential for human error. The minor concerns with Liquor costs and mains lengths identified at APR21 have been resolved.

We confirm the APR metrics provide a fair and reasonable account of Anglian Water's performance during 2021/22 and confirm the outturn of year 2 of AMP7 for those PCs we were asked to assure.

We provided a draft of this report on 8<sup>th</sup> June 2022. Since then, Anglian Water has provided updates to the items we identified as 'amber' which we have included in our key findings below.

G D Hindley, Assurance Director

Jacobs UK Ltd

06 July 2022

## Key Findings to note

We identified some issues to which we have alerted the Company at audit and included in the Summary Audit Reports we provided. Key items of note, including exceptional performance, are detailed below. We did not identify other residual material risks or concerns, about which the Company is not already aware. Our detailed findings for all audits and audit tests are recorded in Track Record.

Audit RAG Key: ● No concerns; ● Minor concerns; ● Material concerns; ● Non-material observations/recommendations

Performance Commitment / APR data table	ANH risk rating	Audit RAG	Summary findings by exception and/or good performance
PC Leakage/water balance information Tables 3A, 3F, 6B, 6D	Critical	Green	Anglian Water's PC for year 2 of AMP7 is a 5.6% reduction in the three-year average leakage 2019/20 baseline level (194.1 MI/d), giving a year 2 target of 183.2 MI/d. We confirmed the three-year average leakage outturn for 2021/22 as 183.3 MI/d which outperforms the PC as a 6.1% reduction, attracting a reward. This is a good outcome considering the tighter target compared to year 1 (1.4% reduction against the baseline) with Anglian achieving a larger net reduction against the target (0.3 MI/d in year 1, 0.9 l/d in year 2). Smart meter data was used to provide more accurate accounting of higher domestic winter use caused by Covid-19 with many people now working from home, either partially or permanently. Anglian's leakage reporting methodology is well established and we confirmed it continues to be diligently followed.
PC Interruptions to Supply (I2S) Tables 3A, 3F	High, Critical (data lines vary in risk rating)	Green	We confirmed performance of 9 minutes 48 seconds per property which does not meet the PC target of 6 mins 08 secs per property. We did not identify any underlying cause of the failure but note that Anglian experienced a greater number of smaller interruption events compared to previous years. The I2S investigation process is being diligently followed and has produced an accurate performance for the year. All events were traceable in Operational Log which we note is being replaced in the current year with Event Management Tool. The I2S verification procedure will require updating to reflect this change, however it was current for the 2021/22 report year. All events we sampled from information sources outside of Anglian Water (press reports) were found in Operational Log. Anglian had warned customers in Pinchbeck about a period of mains flushing over a number of nights which could potentially cause I2S. A number of customer contacts about low pressure were found in SAP, however there were no reports of I2S which was confirmed with no records in Operational Log. The planned work was successfully traced through SAP and the Impact Plan was found, demonstrating Anglian's processes are robust and being followed.
PC % of population supplied by a single supply system	Low	Green	The methodology follows the AMP6 process since this is a continuation of schemes implemented in AMP6. The methodology has been updated to reflect the AMP7 baseline. No schemes have been delivered in the year. This means the PC target for year 2 (21.8% of population supplied by a single supply system) has not been met since the outturn from year 1 (22.8%) has been carried forward). This PC is closely linked to the Interconnectors schemes. No schemes will be delivered until Year 5 of AMP7. The Interconnectors schemes are taking overriding precedence due to the WINEP performance commitments. All single supply schemes have been aligned to the interconnectors project.
Liquor costs Table 8C	Critical	Green	All concerns identified in APR21 have been satisfactorily resolved. The data is largely derived from robust sources and calculations follow the guidance.
		Blue	We made recommendations as below which the team is investigating: <ul style="list-style-type: none"> <li>Estimates of volumes could be improved. They are currently based on a mass balance from measured weight and assumptions on input dry solids. 3% dry solids is a reasonable assumption but a small percentage point difference could materially affect the load.</li> <li>The calculation workbook contains an average of the liquor load percentage. This is not used in reporting the line, but it is an incorrect way to calculate the global liquor load percentage. To avoid confusion, we recommend either removing the calculation or correcting it by calculating it based on the sum of the liquor and wastewater loads across all sites, not as an average of site liquor load percentages.</li> </ul>
PC Community Investment Table 3E	High	Green	Anglian Water has worked with B4SI to agree criteria for inclusion in this measure (e.g. charitable and voluntary investment only) and it was explained how only projects that meet this are included. These projects are a mixture of long-term programmes and ad-hoc requests and we are

			satisfied that all suitable projects have been considered. We reviewed all processing steps from compilation of data through to the reported figure. Totals for each of the programmes are supported by detailed breakdowns e.g. Community Education Programme total is split by types of engagement and also by school. The totals in these spreadsheets reconcile with the reported figure. Audit trails are clear, well-documented and easy to follow. We consider the information to be accurate and reliable. Anglian has achieved a 137.5% increase on the 2020/21 performance in the number of people that have been directly reached or supported by investment from Anglian Water and its Alliances. The reason for the large variance is documented in the commentary as a combination of Covid restrictions easing and increased online delivery. The target for 2021/22 is a 1% increase compared to 2020/21 and hence the ODI has been achieved.
Consents, overflows & flow monitoring Tables 7B, 7C, 7D, 7E	Reputational	Green	Data was traced back to corporate systems and audited by sample. There are sufficient controls on ensuring the data in corporate systems are reliable, and there are multiple checks.
		Blue	The procedures documentation requires updating to reflect APR22 database queries, however beyond that, the procedures are adequate.
Flooding resilience Tables 3E, 3I	High	Green	Anglian has a clear process for calculating this metric, modelling all catchments and not excluding any catchments at stage 1. This is a more stretching method than required by Ofwat's guidance.
		Blue	Anglian's occupancy data was unavailable for 2022 and so data for 2021 was used at audit. Anglian anticipates updating the data to use 2022 occupancy in the formal APR22 submission. We recommend Anglian checks that the APR22 results for aggregated models match those for APR21 when respective separate models are summed. This will provide a sense check to confirm that the results for the aggregated model are similar to those of the respective separate models allowing for dataset changes.
PC Smart metering delivery	Medium	Amber	A formal methodology was not available for the audit, although we were assured that the process is straight forward. However, during our data checks, we found 882 meters which were classed as 'Dumb' but should have been classed as 'Smart'. In order for these to be classified, the team stated a manual correction step was required as the majority of the processing is done in an access database. This was corrected during audit and the Smart / dumb meter splits were updated in the data table. All numbers were traceable. We recommend adding this manual step into the methodology, however we haven't seen the methodology so are unable to confirm whether this is complete.
		Green	Update 30/06/22: Since the audit we have seen the methodology which is appropriate. We confirmed the procedure has been updated to address the points identified at audit.
New connections Tables 4Q, 4R	Low, Medium, High (data lines vary in risk rating)	Blue	The methodology appears sound, except that data corrections had taken place after this year's figures had initially been calculated. This led to a need to update the figures during the audit. This is a live connection to the data lake hence the as-stated numbers couldn't be verified as data had been updated in the meantime. The methodology is a summary of the process used to create the data that is used for these APR Lines. Whilst this gives an overall approach, it is not clear where data comes from especially when referring to PowerBI. We recommend updating the methodology to provide screenshots of the PowerBI tabs.
		Amber	There were additional connections that were identified last year as part of the audit but weren't included. Anglian Water has included the understated new connections in the APR22 figures (1,429 connections). We recommend that the new connections identified last year are restated as part of last year's figures. We note that this could have a ripple effect on other measures where the number of total connections is used as a denominator. We recommend that these potential effects are considered.
		Green	Update 30/06/2022: The Company has set out its approach clearly in its commentary
Length of mains and sewers Tables 6C, 7C	Medium, High, Critical (data lines vary in risk rating)	Green	Anglian has implemented a new process for calculating the reported numbers for both length of mains and length of sewers. The new process is more automated, removing many of the manual steps that were required in the old process. We support the changes that have been made, which improve both the repeatability of the process and the transparency. Anglian confirmed that the old and new processes have been run in parallel to check that there is consistency in the results. We checked the outputs for the length of main by diameter band and confirmed the results are consistent. Similarly for sewers, we confirmed the numbers are consistent

			between old and new methods for foul, surface and combined sewer lengths.
		Blue	We reviewed all steps in the new scripted process for water mains and made a number of non-material observations and recommendations for improvement. These are fully detailed in our audit findings on Track Record. Of note, on review of the PR24 data analysis, we identified that the "Infill by material" average for ductile iron is 1953 (which is assigned to any DI pipes without a known age), however, DI pipes came into service in the UK around 1961. The sense check completed as part of this reporting does mitigate the issue by correcting the year laid to the mean year from the sense check. However, it would be better to correct the PR24 data rather than assigning the mean year from the sense check. We have not reviewed all aspects of the PR24 data but based on this DI issue, the year laid analysis conducted by the PR24 team should be challenged. Similarly for sewers we reviewed all steps in the new scripted process for sewers and made a non-material recommendation that the source data is updated to reflect the Yearbook 2012 classifications. This applies to approximately 1,000 km of sewers.
Raw Water, Resident Population and Supply Demand Tables 4R, 5A, 6A, 6D	No material concern, Low, Medium, High (data lines vary in risk rating)	Green	The documented procedure for generating the relevant data lines was comprehensive. We reviewed the spreadsheet and confirmed that the numbers in the calculations are consistent with the reported numbers.
		Amber	Table 4R, lines 30, 31 and 32, requires household population to be split between "resident" and "non-resident" populations. Currently, the auditee populates the "non-resident" column with business population. However, the overall line definition is for "Household" population and so our understanding is that the "not resident" column should contain tourist and holiday population which is consistent with the definition of "non-resident" used for line 4R.29 (referenced as 4R.27 in RAG 4.10).
		Green	Update 30/06/2022: Since the audit Anglian has responded to our observation and that the reported numbers are now holiday population rather than business population.

## Glossary

**Annual Integrated Report (AIR)** - report by the Company on the year's activities. Includes the strategic report, corporate governance report, remuneration report and the statutory accounts

**Annual Performance Report (APR)** – report produced by the Company for regulatory reporting purposes, in accordance with the Regulatory Accounting Guidelines.

**Appointed business** – the appointed business comprises the regulated activities of the Company which are activities necessary in order for a company to fulfil the function and duties of a water and sewerage undertaker under the Water Industry Act 1991.

**Arm's-length trading** – arm's-length trading is where the Company treats the associate companies on the same basis as external third parties.

**Asset Management Plan (AMP)** – a plan agreed with Ofwat on a five-yearly basis for the management of water and wastewater assets. The plan runs for a five-year period. AMP6 covered April 2015 to March 2020 and AMP7 covers April 2020 to March 2025.

**Associate company** – whereas Anglian Water Services (AWS) Limited is the regulated company within the AWG group, the group also contains other companies ('associates') which are not regulated by Ofwat. The Licence requires that AWS is ring-fenced from these associates and that all transactions between them are disclosed.

**Carbon Reduce Scheme (formerly CEMARS - Certified Emissions Measurement and Reduction Scheme)** - the methodology for producing an organisational carbon footprint is aligned with the internationally recognised Greenhouse Gas Protocol for corporate accounting and reporting.

**CMOS (Central Market Operating System)** - CMOS is the core IT system which underpins MOSL's role in the water retail market. CMOS manages all the electronic transactions involved in switching customers and provides usage and settlement data that is used in the billing process.

**Competition and Markets Authority (CMA)** - the non-ministerial department which works to promote competition and the fair conduct of markets for the benefit of consumers. In the event that a water company rejects Ofwat's determination at a price review the CMA conducts a re-determination.

**Competitively Appointed Provider (CAP)** - the firm appointed to deliver a scheme under the DPC regime.

**Consumer Price Index including owner occupied housing costs (CPIH)** - compiled and published monthly by the Office of National Statistics, this is a measure of consumer inflation which includes a measure of the owner occupied housing costs (costs that are associated with owning, maintaining and living in one's home) and council tax. Anglian Water's allowed revenues can be raised annually by the value of CPIH.

**Direct Procurement for Customers (DPC)** - individual very large construction schemes, which previously would have been delivered by the water undertaker by default, can be designated by Ofwat to be delivered by a competitively appointed provider instead.

**Final Determination (FD)** – this is the conclusion of discussions on the scale and content of the Asset Management Plan for the forthcoming five-year period. It is accompanied by a determination of the allowable 'K' factor for the forthcoming five-year period.

**K factor** – the annual charge, set by Ofwat, in revenue that companies in the water industry can make. The amount by which a company can increase (or must decrease) its charges is controlled by the price limit formula  $CPIH + \text{or} - 'K'$ . 'K' is a number determined by Ofwat for each company, usually at a price review, for each year to reflect what it needs above

or below inflation in order to finance the provision of services to customers, and is subject to adjustment mechanisms to reflect prior year revenue recovery and in-period performance commitments.

**Licence** – the Instrument of Appointment dated August 1989 under Sections 11 and 14 of the Water Act 1989 (as in effect on 1 August 1989) under which the Secretary of State for the Environment appointed Anglian Water Services Limited as a water and sewerage undertaker under the Act for the areas described in the Instrument of Appointment, as modified or amended from time to time.

**MOSL (Market Operating Services Limited)** - MOSL is the not-for-profit company which operates the business water market which opened on 1 April 2017.

**Non-appointed business** – the non-appointed business activities of the Company are activities for which the Company as a water and sewerage undertaker is not a monopoly supplier (for example, the sale of laboratory services to an external organisation) or involves the optional use of an asset owned by the Company (for example, the use of underground assets for cable television).

**Ofwat** – the name used to refer to the Water Services Regulation Authority (WSRA). The WSRA acts as the economic regulator of the water industry.

**Outcome Delivery Incentives (ODIs)** – financial incentives which reward companies for outperforming their performance commitment levels and penalises them for under-performing.

**Performance commitment** - a measure chosen to track the delivery of outcomes which customers have told us are valued by them

**Performance Commitment Level (PCL)** – the standard of performance that we expect to deliver against each performance commitment. Typically, though not always, there will be a separate PCL for each year of the price control period.

**Periodic Review** – the price determination process undertaken by Ofwat every five years. Each water and sewerage undertaker submits an Business Plan covering the five-year period for which Ofwat will determine allowed revenues.

**Price Control Units** – at the 2019 price review, Ofwat introduced separate price controls for water resources, water network plus (water treatment and treated water distribution), wastewater network plus (waste water collection and treatment), bioresources, retail household and retail non-household.

**Regulatory Accounting Guidelines (RAGs)** – the accounting guidelines for the APR issued, and amended from time to time, by Ofwat.

**Regulatory Capital Value (RCV)** – the capital base used in setting price limits and the value of the appointed business that earns a return on investment. It represents the initial market value (200-day average), including debt, at privatisation, plus subsequent net new capital expenditure including new obligations imposed since 1989. The capital value is calculated using the Ofwat methodology.

**Retail Price Index (RPI)** – the RPI is compiled and published monthly by the Office for National Statistics. RPI is an average measure of change in the prices of goods and services bought for the purpose of consumption by the vast majority of households in the United Kingdom. From 1 April 2020 50% of Anglian Water's RCV is indexed to the RPI, with the balance indexed to CPIH.

**Retail services** – the elements of the business responsible for direct contact with customers e.g. the contact centre, billing and reading meters. From April 2017, following the opening of the non-household market, business customers became able to choose their retail supplier. Anglian Water's appointed business exited all non-household market activities.



**Section 24 Sewers** - In England there is a category distinction between sewers built before or after 1937. Sewers dating from after 1937, and that only serve your own home (albeit that the drain line crosses somebody else's land) are "private" or "lateral drains". On the other hand if your house was constructed before 1st October 1937 and your drains are shared, serving two or more homes, then that drain line is a "public" sewer (a "section 24 sewer").

**Third-party contributions since 1989/90** – grants and third-party contributions received in respect of infrastructure assets and any deferred income relating to grants and third-party contributions for non-infrastructure assets.

**Totex** – total expenditure comprising operational expenditure (opex) and capital expenditure (capex).

**Transferred private sewers** - On 1 October 2011 all privately owned sewers and lateral drains which drained to existing public sewers as at 1 July 2011 became the responsibility of the sewerage undertaker. This covered foul, surface water or combined sewers, and any drains serving individual properties, which are outside the curtilage of the property they serve, connect to the public sewerage system and were previously the responsibility of homeowners. In the second tranche of this programme all privately owned pumping stations serving more than one property and their associated rising mains transferred to the sewerage undertaker on 1 October 2016.

**UKWIR (UK Water Industry Research)** - the body which facilitates, manages and delivers a strategic programme of research projects for its members, the water companies of the UK and Ireland, to address the key challenges they face

**Water and Sewerage Company (WaSC)** – a company responsible for the provision of both water and sewerage services.

**Water only company (WOC)** - a company responsible for the provision of water services only.

**Water recycling** - to promote public understanding of the water cycle and encourage stakeholders to value water appropriately, we use this term to describe our waste water or sewerage service.

**Water Recycling Centre (WRC)** - we use this term, rather than sewage treatment works, to describe the facilities which return used water to a condition where it can safely be discharged to environmental waters.

**Water Treatment Works (WTW)** - operational site where raw water from the environment is made potable.

**Wholesale services** – the elements of the business responsible for the abstraction, treatment and distribution of water and the collection, treatment and disposal of sewage and sludge.

**Working capital** – the aggregate of stocks, trade debtors and trade creditors.

