

Our Contribution to Yorkshire Methodology Report

For the year ended 31 March 2023

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YorkshireWater

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Acronyms

Acronym	Description
ARFS	Annual Report and Financial Statements
APR	Annual Performance Report
BAS	Biosolids Assurance Scheme
BAME	Black, Asian, and Minority Ethnic
CHP	Combined Heat and Power
C-MeX	Customer experience measure
CO ₂ e	Carbon Dioxide equivalent
Defra	Department for Environment, Food and Rural Affairs
CPIH	Consumer Prices Index including owner occupiers' housing costs
D-MeX	Developer services experience measure
EA	Environment Agency
ENCA	Enabling a Natural Capital Approach
GHG	Greenhouse Gas
ha	Hectare
kWh	kilowatt hour
l/p/d	Litres per person per day
LTIR	Lost Time Injury Rate
MI	Megalitre
MWh	Megawatt hour
NIC	National Insurance Contributions
ONS	Office for National Statistics
ORVal	Outdoor Recreation Valuation tool
PAYE	Pay as You Earn
QALY	Quality Adjusted Life Year
RCV	Regulatory Capital Value
R&D	Research & Development
REGO	Renewable Energy Guarantees of Origin
RGGO	Renewable Gas Guarantees of Origin
ROI	Return on Investment
SROI	Social Return on Investment
SSSI	Site of Special Scientific Interest

t	Tonnes
T&D	Transmission & Distribution
TIVA	Total Impact and Value Assessment
VAT	Value Added Tax
YW	Yorkshire Water

Introduction

Context

Yorkshire Water is a water and wastewater company in the UK that delivers water, sewerage, and environmental services to over 5 million people and 120,000 businesses. This document is part of a suite of publications sharing the findings and methodology of our latest work to understand the outputs and impacts, both positive and negative, we make and manage as an organisation. The main *Our Contribution to Yorkshire* report summarises the findings of our work and is available at yorkshirewater.com/capitals.

This document provides the methodology and data sources used in our most recent assessment. It builds on Yorkshire Water's previous work and has been updated this year to reflect ongoing improvements to our assessment techniques. Aspects of the work have been reviewed by an independent third party, DNV, to verify and assure the approaches used. You can find more information on the scope of their work and their findings in their Independent Limited Assurance Report within the main *Our Contribution to Yorkshire* report and further details in Appendix 1 of this document.

What is *Our Contribution to Yorkshire*?

Our Contribution to Yorkshire is the name for our work to enhance the understanding of the impacts we have on the environment, society, and the economy, both positive and negative. This approach goes beyond traditional reporting by applying a mix of accounting, economic valuation, and sustainability techniques to quantify impacts across the six capitals, and where appropriate, to put a monetary value on those impacts.

The typical approach to 'capital' focuses on financial and manufactured assets. These assets can deliver a flow of services if they are maintained in good condition. A water treatment plant, for example, delivers a steady supply of clean water. The services provided by these assets have value both to organisations and to wider society, and this value is recorded in a typical financial account.

The six capitals approach extends this type of thinking beyond financial and manufactured capital assets to also consider natural, social, human, and intellectual capital, as defined in Figure 1. By looking at all of these assets, rather than just focusing on the traditional assets recorded in a balance sheet, a six

capitals approach can provide a much more detailed understanding of a company's performance than is captured in standard financial or operational performance reports.



Figure 1: The Six Capitals – these are the resources we rely on and that we impact, both positively and negatively, through our business activities.

The aim of this approach is to examine the impacts of Yorkshire Water across the six capitals, assessing the full range of economic, environmental, and social attributes associated with our activities. This work aims to provide a broader view of the impacts of Yorkshire Water's services and the value we contribute. It also aims to highlight opportunities where we can enhance our impact, and the inherent trade-offs that need to be considered when making decisions.

Our approach prioritises the impacts we understand to be the most significant, where they are readily measurable. However, the figures do not yet represent the full 'value' of nature, people or society. For example, while the approach covers the value to the company of colleagues' wellbeing in terms of reduced sickness rates, this does not reflect their entire wellbeing, the entirety of its importance to individuals, nor does it reflect the total scope of Yorkshire Water's business interests or responsibilities.

This is the fifth *Our Contribution to Yorkshire* report, which covers the financial year ending 31 March 2023. Previous reports are available at yorkshirewater.com/capitals. We aim to publish an annual report to allow ongoing

and comprehensive monitoring of Yorkshire Water’s contribution to the region and how it is changing over time.

Six capitals accounting approach

Our six capitals accounting approach is built around a framework of assets, outputs and impacts, following guidance from Defra and the Capitals Coalition. This considers the extent and condition of Yorkshire Water’s assets, the outputs we generate through our activities, as well as the monetary impact of those outputs across all six capitals (Figure 2).

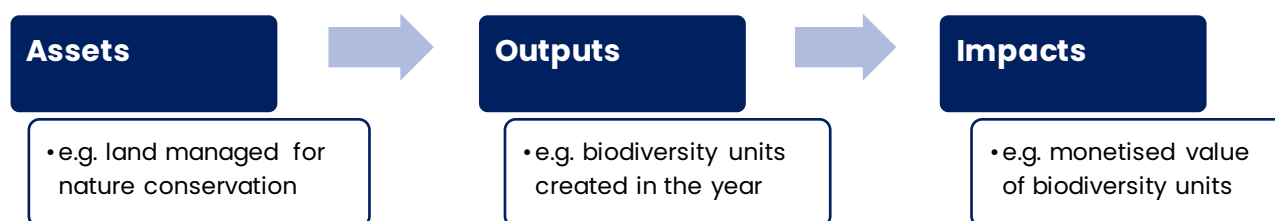


Figure 2: The assets/outputs/impacts accounting framework used in this assessment

About this methodology report

This report provides the methodology and data sources underpinning the *Our Contribution to Yorkshire 2023* assessment and report. The full set of results is published in an accompanying spreadsheet. The document is structured around the six capitals: financial, manufactured, natural, human, intellectual, and social capital. Each chapter provides the methodology and data sources used to generate results for each of the six capitals.

Framework structure

Within each of the six capitals are metrics of Yorkshire Water’s assets, outputs, and their impacts. We group metrics by themes across each capital following the structure set out in the table below. While some of our metrics may continue to evolve, this structure is expected to remain relatively stable over time.

Financial capital	
Themes	Impacts
Taxes	<ul style="list-style-type: none"> • Taxes
Salaries	<ul style="list-style-type: none"> • Salaries
Pensions	<ul style="list-style-type: none"> • Pensions
Operating profit	<ul style="list-style-type: none"> • Operating profit
Manufactured capital	
Themes	Impacts
Asset condition	<ul style="list-style-type: none"> • Change in tangible asset value
Waste use and reuse	<ul style="list-style-type: none"> • Waste to landfill • Underused resources
Renewable energy	<ul style="list-style-type: none"> • Renewable energy generated • Increased grid resilience through renewable energy exported
Natural capital	
Themes	Impacts
Water use and efficiency	<ul style="list-style-type: none"> • Water abstraction • Water leakage
Environmental water quality	<ul style="list-style-type: none"> • Change in bathing water status classifications • Length of river improved • Pollution incidents • Phosphorus released to the environment
Land and biodiversity	<ul style="list-style-type: none"> • Change in biodiversity units
Air quality and carbon	<ul style="list-style-type: none"> • NO_x and particulate matter (PM2.5) emissions • Scope 1 carbon emissions • Scope 2 carbon emissions and reductions through purchase of green electricity • Scope 3 carbon emissions and reductions through purchase of green electricity • Scope 3 carbon emissions (embedded in capital spend) • Net carbon emitted/sequestered on YW land
Human capital	
Themes	Impacts
Performance and development	<ul style="list-style-type: none"> • Colleague turnover (voluntary leavers) • Colleagues undergoing performance reviews • Wage inflation • Apprenticeships
Health, safety, and wellbeing	<ul style="list-style-type: none"> • Colleague engagement • Health and wellbeing programmes • Injuries • Sickness absence
Diversity and inclusion	<ul style="list-style-type: none"> • Gender pay gap
Intellectual capital	
Themes	Impacts
Research and development	<ul style="list-style-type: none"> • Return on R&D investment

Knowledge and learning	<ul style="list-style-type: none"> • Colleague training
Social capital	
Themes	Impacts
Trust	<ul style="list-style-type: none"> • Late payments to suppliers • Early payments to suppliers
Public health and wellbeing	<ul style="list-style-type: none"> • Health benefits of providing a public water supply compared to a private supply • Recreational visits to Yorkshire Water sites • Health benefits of recreational exercise on Yorkshire Water sites • Water delivered to customers
Vulnerability	<ul style="list-style-type: none"> • Financial support for customers
Public education	<ul style="list-style-type: none"> • Public educational programmes

Timescale

This assessment covers the period 1 April 2022 to 31 March 2023. Metrics for this period are presented with last years' metrics in the accompanying spreadsheet, and all values are presented in terms of their respective price years. This is so that the results presented in *Our Contribution to Yorkshire* are consistent with the figures presented in the APR and ARFS for any given reporting year. In light of this, there is potential for some changes in value to be caused by inflation rather than real change but, in practice, the effects of inflation are considered to be minimal over the assessment period. All spend in this report is reported on an accruals basis unless otherwise stated.

Materiality

We create many different impacts through our business activities, both positive and negative. In most cases we can understand the scale of each impact by converting it to a monetary value which reflects its importance to stakeholders, including individuals, groups of people, or society as a whole. However, we recognise that some of our largest impacts may not be perceived as highly important by all our stakeholders. Similarly, some of the impacts that matter the most to certain stakeholders will not necessarily be those with the highest monetary values.

To help us better understand and prioritise our most important impacts, this year we carried out a materiality assessment based on the views of a variety of internal and external stakeholder groups, including customers, colleagues, suppliers, and non-governmental organisations.

Our assessment extends the traditional notion of materiality – which considers how external factors translate into financial performance – by identifying material impacts created through our business activities with potential to affect one or more stakeholder groups. However, we recognise that many of our outward-facing impacts also have an effect on our performance (i.e. are doubly material). We considered an impact to be material if its monetary value was greater than ±£1m or it was rated as moderately important or higher by at least one stakeholder group. Any immaterial impacts, including those we have previously reported on, have been excluded from our reporting.

The results of our materiality assessment help ensure our reporting remains relevant and focused on our most material impacts. However, in some cases our assessment has revealed new impacts to which we cannot yet assign monetary values. In these cases, we aim to provide a narrative of our latest performance in our reporting and will work to develop new impact monetisation techniques in future.

Robustness ratings

Some of the approaches used in this report are less well developed than others. In light of this, each metric is assigned a confidence score to reflect limitations around the accuracy of the underlying methodologies and/or data sources as defined below. Robustness ratings for each metric are available in the data tables that are published in conjunction with the *Our Contribution to Yorkshire* report.

Low	Medium	High
Low confidence due to considerable uncertainty in data accuracy and reliance on extrapolations, estimations, and assumptions. Valuation methods use techniques that are at the early stages of development.	Medium confidence due to limited uncertainty in data accuracy and reliance on extrapolations, estimations, and assumptions. Valuation methods use techniques that are well-recognised but still maturing.	High confidence due to robust data that may undergo third-party assurance. Valuation methods use widely respected techniques that have matured to become commonly used by respected organisations.

Independent assurance

Yorkshire Water’s standard business processes include independent assurance of many of the metrics used in this assessment. These metrics are highlighted in the accompanying spreadsheet.

In addition, DNV provided independent limited assurance over the following metrics that were not already assured elsewhere:

- Spend on research and development (R&D)
- Percentage spend with local suppliers
- Number of new Yorkshire Water apprentices
- Number of training hours

Reporting criteria for these metrics are provided in Appendix I of this document and DNV’s independent limited assurance report can be found at the end of the main *Our Contribution to Yorkshire* report.

Key changes this year

We keep our methodology under review and make updates each year to improve our assessment techniques and ensure we continue to align with best practice in this field.

This year we have made the following key changes:

Capital	Change
All	- Added information on how we assess the materiality of our impacts
Financial	- n/a
Manufactured	- Updated calculations supporting renewable energy generation - Moved ‘Unplanned Outages’ from Social to Manufactured Capital to reflect the measure of asset health provided by this metric
Natural	- Added information on the quantity and impact of phosphorous discharged from wastewater treatment works - Removed information on income from farm tenancies and timber harvesting as our analysis indicates these are not material to stakeholders - Refined our approach to calculating the impact of emissions to air by considering emissions from all fossil fuel sources
Human	- Removed information on colleague volunteering (value to individual) as not considered to be material by stakeholders
Intellectual	- n/a
Social	- Removed information on colleague volunteering (value to society) and charitable fundraising as our analysis indicates these are not material to stakeholders

Financial capital

Financial capital assets

Assets	Unit	Definition
Regulatory capital value (RCV)	£m	The regulated valuation of Yorkshire Water as at 31 March
Credit rating (lowest of major credit reference agencies)	rating	The lowest of our ratings from Moody's Class A Issue Rating and S&P's Class A Issue Rating as at 31 March
Gearing (Regulated Yorkshire Water)	%	The ratio of covenanted net debt to the published RCV as at 31 March
Pension funds	£m	The asset value of the Kelda Group Pension Plan as at 31 March. Note this figure is not audited until later in the year and therefore may be subject to change in future.
Net debt	£m	Debt as defined by the financial covenant certificate for Yorkshire Water Finance Group less available cash
Share of debt issued in accordance with our Sustainable Finance Framework	%	The percentage of Yorkshire Water's total debt issued in accordance with our Sustainable Finance Framework

Financial capital outputs

Themes	Outputs	Unit	Definition
Taxes	Taxes	£m	Yorkshire Water's total tax contribution, comprised of: 1. taxes, duties, and rates included in operating costs and a cost to Yorkshire Water (Business rates, Employer's National Insurance Contributions (NICs), Climate Change Levy, abstraction and direct discharge licences, and fuel duty); 2. Taxes, duties, and rates included in operating costs, remitted on behalf of colleagues (Colleagues' Pay As You Earn (PAYE) and Colleagues' NICs); 3. Other taxes, duties, and rates arising from Yorkshire Water's activities and collected on behalf of HMRC (Business customer value added tax (VAT)).
Salaries	Salaries	£m	Total wages and salaries paid to people employed by Yorkshire Water
Pension contributions	Pension contributions	£m	Total pension contributions paid to people employed by Yorkshire Water
Operating profit	Operating profit	£m	Gross profit less operating expenses and exceptional expenses

Financial capital impacts

Financial capital impacts overlap directly with financial capital outputs and are therefore not repeated here.

Manufactured capital

Manufactured capital assets

Assets	Unit	Definition
Value of tangible assets	£m	Net book value of tangible assets at 31 March. Includes land and buildings, infrastructure assets, plant and equipment, and assets under construction
Water treatment works	no.	Total number of active water treatment works on 31 March as reported in APR Table 6A
Total length of water mains	km	The total length of potable water mains on 31 March as reported in APR Table 6C
Renovated, built, or relined water mains	km	Total length of potable mains relined, laid, or renewed in the year as reported in APR Table 6C
Renovated, built, or relined water mains	%	Length of renovated, built, or relined water mains as a percentage of total length of water mains on 31 March
Wastewater treatment works	no.	Total number of active wastewater (sewage) treatment works on 31 March as reported in APR Table 7D
Total length of sewers	km	Total length of "legacy" public sewers and formerly private sewers and lateral drains (s105A sewers) on 31 March as reported in APR Table 7C.
Renovated or replaced sewers	km	Length of gravity sewers rehabilitated, and rising mains replaced or structurally refurbished, as reported in APR Table 7C
Renovated or replaced sewers	%	Length of renovated or replaced sewers as a percentage of total length of sewers on 31 March
Risk of sewer flooding in a storm	%	The percentage of the region's population at risk from internal hydraulic flooding from a 1 in 50-year storm, based on modelled predictions. Performance Commitment figure reported for 'Risk of sewer flooding in a storm' in APR Table 3A
Surface water removed from the public sewer network	ha	The area of impermeable surface removed or attenuated from the public sewer network, using blue-green infrastructure solutions or surface water disconnection. Performance Commitment figure reported for 'Surface water management' in APR Table 3A
Renewable energy generation capacity	MW	Theoretical maximum capacity of Yorkshire Water's renewable energy generation assets, including electricity from combined heat and power systems, hydroelectric, wind, and solar assets. Excludes heat energy from combined heat and power systems.

Manufactured capital outputs

Theme	Outputs	Unit	Definition
Asset condition	Value of change in tangible assets over the year	£m	Change in the net book value of tangible assets between 31 March in the reporting year and 31 March in the previous reporting year
	Number of residential supply pipe repairs and renewals	no.	The number of residential supply pipe repairs and renewals carried out each year for no charge.

			Performance Commitment figure reported for 'Repairing or replacing customer owned pipes' in APR Table 3A
	Number of sewer collapses	no.	Total number of gravity sewer collapses and sewer rising main bursts as reported in APR Table 7C
	Unplanned outage	%	The temporary loss of production capacity as a percentage of total production capacity. Performance Commitment figure reported for 'Unplanned outage' in APR Table 3
Waste use and reuse	Biosolids achieving BAS accreditation	%	The percentage of overall biosolids sent to land that meet the Biosolids Assurance Scheme (BAS) accreditation. Performance Commitment figure reported for 'Quality agricultural products' in APR Table 3A
	Total waste produced	dry tonnes	The total amount of waste generated by Yorkshire Water from the following waste streams: grits, screenings, operational site skips, office waste, scrap metal, digestate, clean water sludge (when sent to landfill), asset management waste, and repair & maintenance waste.
	Waste going to landfill	dry tonnes	The amount of waste generated by Yorkshire Water sent to landfill.
	Waste diverted from landfill	%	The amount of waste generated by Yorkshire Water not sent to landfill as a percentage of total waste produced.
	Waste used for energy generation	dry tonnes	The amount of waste generated by Yorkshire Water used for energy generation.
	Value created from waste or under-used resources	£m	The environmental, social, and financial benefit, monetised, created by Yorkshire Water from resources currently under-used or classified as waste. Aligns with 'Creating Value from Waste' Performance Commitment (APR Table 3A) but reported annually rather than as a cumulative total.
	Renewable energy	Total energy use (electricity and other)	MWh
Total electricity consumed		MWh	Total electricity used by Yorkshire Water. Includes grid and self-generated electricity.
Total electricity purchased		MWh	Total electricity purchased by Yorkshire Water. Excludes self-generated electricity.
Electricity purchased from renewable sources		%	Electricity purchased by Yorkshire Water and backed by Renewable

			Energy Guarantees of Origin certificates.
	Total electricity generated (renewable)	MWh	Total electricity self-generated by Yorkshire Water from renewable sources, including biogas
	Electricity generated from renewable sources (share of total electricity consumption)	%	Total electricity self-generated by Yorkshire Water from renewable sources as a percentage of total electricity consumption.
	Total fuels consumed	MWh	Energy content of gaseous and liquid fuels used by Yorkshire Water
	Total heat consumed	MWh	Heat energy that has been self-generated by Yorkshire Water from biogas combustion
	Amount of renewable energy generated	MWh	Total amount of renewable energy generated by Yorkshire Water from sludge processing, wind, hydro, and solar
	Amount of renewable energy generated and used	MWh	Total amount of renewable energy generated and used by Yorkshire Water from sludge processing, wind, hydro, and solar
	Amount of renewable energy generated and exported	MWh	Total amount of renewable energy generated and exported by Yorkshire Water from sludge processing, wind, hydro, and solar
	Energy intensity water	kWh/MI	Ratio of energy consumption from water assets to megalitres of clean water produced (distribution input) by Yorkshire Water
	Energy intensity wastewater	kWh/MI	Ratio of energy consumption from wastewater assets to megalitres of sewage treated (flow to full treatment) by Yorkshire Water

Manufactured capital impacts

Change in tangible asset value

Change in the net book value of tangible assets between 31 March in the reporting year and 31 March in the previous reporting year.

Waste to landfill

Input	Data	Unit	Definition	Source
A.	Waste going to landfill	dry tonnes	The amount of waste generated by Yorkshire Water sent to landfill	Data collected by Yorkshire Water and our suppliers
B.	External cost of landfill waste	£/t	The external environmental and social costs associated with landfill waste,	European Commission

			including costs associated with global warming, air pollution, leachate and disamenity. Expressed as a negative figure.	(2000) 'A Study on the Economic Valuation of Environmental Externalities from Landfill Disposal and Incineration of Waste', inflated to relevant price year using CPIH
Calculations				
1	Value of waste sent to landfill = A x B			
Note that this calculation expresses the external environmental and social costs associated with waste sent to landfill. The private costs of waste disposal incurred by Yorkshire Water are not included here as they are incorporated into metrics reported under Financial Capital.				

Underused resources

The environmental, social, and financial benefit, monetised, created by Yorkshire Water from resources currently under-used or classified as waste. Aligns with 'Creating Value from Waste' Performance Commitment (APR Table 3A) but reported annually rather than as a cumulative total.

Renewable energy generated

Input	Data	Unit	Definition	Source
A.	Total heat energy generated from sludge processing (both used onsite and exported)	MWh	Heat that has been self-generated from biogas combustion by Yorkshire Water.	Data collected by Yorkshire Water and our suppliers
B.	Total electricity generated (renewable)	MWh	Total electricity self-generated by Yorkshire Water from renewable sources, including biogas	As above
C.	Energy efficiency conversion from heat to gas	%	-	Internal data based on CHP asset specifications
D.	Grid gas emissions factor	kgCO ₂ e/kWh	Emissions factor for standard natural gas received through the gas mains grid network in the UK	UK Department for Business, Energy & Industrial Strategy (2023) Greenhouse gas reporting: conversion factors
E.	Grid electricity emissions factor	kgCO ₂ e/kWh	Emissions associated with the generation of electricity at a power station	As above

F.	Grid electricity transport and distribution emissions factor	kgCO ₂ e/kWh	Emissions impact of the efficiency losses experienced in getting electricity from the power plant to the end user	As above
G.	Welfare cost of carbon	£/t CO ₂ e	The marginal cost of the impacts caused by emitting one extra tonne of greenhouse gas (carbon dioxide equivalent) on global welfare, inclusive of 'non-market' impacts on the environment and human health. Expressed as a negative figure.	Research conducted by Route2 and inflated to relevant price year using CPIH
Calculations				
1	Equivalent grid gas required for heat generation (MWh) = A x C			
2	Avoided carbon emissions from renewable heat generation (tCO ₂ e) = (1 x D) / 1,000,000			
3	Avoided carbon emissions from renewable electricity generation (tCO ₂ e) = (B x (E + F)) / 1,000,000			
4	Value of renewable energy generated = (2 + 3) x G			

Increased grid resilience through renewable energy exported

Input	Data	Unit	Definition	Source
A.	Total renewable electricity generated and exported	MWh	Total amount of electricity generated and exported by Yorkshire Water from sludge processing, wind, hydro, and solar	Data collected by Yorkshire Water and our suppliers
B.	Market value of security of electricity supply	£/kWh	The maximum price that consumers are willing to pay to be supplied with energy, and at that price they will be indifferent between being supplied and paying the price, or not being supplied and paying nothing.	Yorkshire Water (2018) TIVA - Methodology Report - based on research published in 2013 by London Economics for Ofgem and DECC which estimated the Value of Lost Load for consumers in Great Britain, inflated to relevant price year using CPIH
Calculations				
1	Value of increased grid resilience through renewable energy exported = A x B x 1000			

Natural capital

Natural capital assets

Assets	Unit	Definition
Land ownership	ha	Total area of operational and company catchment land owned by Yorkshire Water as of 31 March
Number of farm tenancies	no.	The total number of farm tenancies recorded on land owned by Yorkshire Water as of 31 March. Includes farm business tenancies, Agricultural Holdings Act tenancies, horse agreements and seasonal grazing licences. Excludes any other farm tenancy arrangement.
Total area of land under active agricultural use	ha	Total area of operational and company catchment land owned by Yorkshire Water under active agricultural use as of 31 March
Total area of land under Beyond Nature™ schemes	ha	Total area of operational and company catchment land owned by Yorkshire Water managed under Beyond Nature™ schemes as of 31 March
Total area of land conserved or enhanced	ha	The cumulative area of land conserved and enhanced in Yorkshire Water's operational area through land management and biodiversity focused projects and investments on land owned, and not owned, by Yorkshire Water. Performance commitment reported in APR Table 3.
Total area of SSSI land	ha	Total area of operational and company catchment land owned by Yorkshire Water designated as Sites of Special Scientific Interest by Natural England.
SSSIs in 'favourable'/'unfavourable recovering'/'unfavourable no change'/'unfavourable declining'/'partially destroyed' condition	%	SSSI area in 'favourable'/'unfavourable recovering'/'unfavourable no change'/'unfavourable declining'/'partially destroyed' condition as a percentage of total SSSI area on land owned by Yorkshire Water. Condition is determined by Natural England.
Percentage of surveyed sites affected by Invasive Non-Native Species	%	Percentage of surveyed Yorkshire Water operational sites affected by one or more Invasive Non-Native Species. Operational sites include raw water reservoirs, water treatment works, sewage treatment works, sludge treatment facilities, river, clean and waste pumping stations, and river intakes.
Number of colleague trained on Invasive Non-Native Species awareness	no.	Total number of Yorkshire Water colleagues trained on Biosecurity and Invasive Non-Native Species awareness via in-person or online training. Excludes colleagues who have received training but have since left the business. Excludes training provided to colleagues of partner organisations.
Number of pathways of biosecurity implementation	no.	The cumulative number of pathways of invasive species spread, where company biosecurity interventions have reduced the risk

		of that spread. Performance Commitment figure reported for 'Biosecurity implementation' in APR Table 3.
Total water available for use	Ml/day	The average volume of water available from the environment and constrained by water resources control assets. Reported in APR table 5A.
Annual rainfall as a percentage of long-term average rainfall	%	Rainfall for the Yorkshire region from 1 April to 31 March of the reporting year, expressed as a percentage of 1991-2020 average rainfall for the region, reported by the Centre for Ecology and Hydrology.
Number of bathing waters	no.	The number of designated bathing waters within Yorkshire Water's operational area for the most recent bathing season (15 May to 30 Sep), including coastal and inland bathing waters.
Number of bathing waters that exceed the minimum legal standard	no.	Number of designated bathing waters within Yorkshire Water's operational area which exceeded the European Union Bathing Water Directive requirements for the most recent bathing season (15 May to 30 Sep), as determined by Defra, including coastal and inland bathing waters. Performance Commitment figure reported for 'Bathing water quality' in APR Table 3
Share of bathing waters that exceed the minimum legal standard	%	Percentage of designated bathing waters within Yorkshire Water's operational area which exceeded the European Union Bathing Water Directive requirements for the most recent bathing season (15 May to 30 Sep), as determined by Defra, out of the total number of designated bathing waters within Yorkshire Water's operational area, including coastal and inland bathing waters.
Number of bathing waters in 'excellent'/'good'/'sufficient'/'poor'/'unassessed' condition	no.	Number of designated bathing waters within Yorkshire Water's operational area classified as 'excellent'/'good'/'sufficient'/'poor'/'unassessed' condition for the most recent bathing season (15 May to 30 Sep), as determined by Defra, including coastal and inland bathing waters.
EA environmental performance rating	out of 4 stars	Yorkshire Water's Environmental Performance Assessment star rating for the most recent calendar year
Treatment works compliance	%	The number of failing wastewater treatment sites as a percentage of the total number of discharges. Performance Commitment figure reported for 'Treatment works compliance' in APR Table 3
Land carbon stock	t C	Total carbon stored in land assets owned by Yorkshire Water (including tenants)

Natural capital outputs

Theme	Outputs	Unit	Definition
Water use and efficiency	Water abstraction	MI	Total water abstracted by Yorkshire Water as reported in APR Table 5A. Includes water from impounding reservoirs, pumped storage reservoirs, river abstractions, groundwater works, artificial recharge schemes, and aquifer storage schemes.
	Amount of water returned to the environment to maintain flows for wildlife and other users	MI	Volume of wastewater receiving treatment at sewage treatment works, and subsequently discharged to the environment, as reported in APR Table 7C
	Leakage	MI	The total amount of water lost from our water network between our water treatment works and customers' homes and businesses.
	Average water consumption per head of population	l/p/d	The annual average water consumption for people living in household properties, expressed as litres per person per day
Environmental water quality	Net change in bathing water status	no.	Net change in the number of designated bathing waters within Yorkshire Water's operational area moving to a better (positive) or worse (negative) status compared to the previous assessment.
	Length of river improved	km	Length of river improved as a consequence of regulatory and legislative drivers. Aligns with the performance commitment figure reported for 'Length of river improved' in APR Table 3 but reported on an annual rather than cumulative basis.
	Number of pollution incidents	no.	Total number of serious and minor pollution incidents (categories 1, 2 and 3) in the most recent calendar year emanating from a discharge or escape of a contaminant from a Yorkshire Water sewerage asset affecting the water environment.
	Number of Category 1/2/3 pollution incidents	no.	Total number of pollution incidents by category in the most recent calendar year emanating from a discharge or escape of a contaminant from a Yorkshire Water sewerage asset affecting the water environment.
	Phosphorus released to water environment	tonnes	Annual phosphorus load released to the water environment under permit from Yorkshire Water's wastewater treatment plants.

Land and biodiversity	Biodiversity units created	no.	Net change in biodiversity units attributable to Yorkshire Water's activities during the reporting year. Includes biodiversity units on land owned by Yorkshire Water, and also biodiversity units on land not owned by Yorkshire Water but impacted by Yorkshire Water's activities (e.g. through partnership working arrangements). Biodiversity units created through partnership work are attributed equally between the number of partners involved.
	Trees planted in year	no.	Number of new trees planted in the reporting year on Yorkshire Water land. Excludes trees planted as part of ongoing woodland maintenance activities to replace damaged trees.
Air quality and carbon	NO _x emissions	Tonnes	Total mass of NO _x emissions (reported as NO ₂ equivalent) from Yorkshire Water's combustion of diesel, petrol, gas oil and natural gas. Excludes emissions from contract partner vehicles.
	PM _{2.5} emissions	tonnes	Total mass of particulate matter emissions (as PM _{2.5}) from Yorkshire Water's combustion of diesel, petrol, gas oil and natural gas. Excludes emissions from contract partner vehicles.
	Net carbon emissions (scope 1, 2 and 3)	t CO ₂ e	Net carbon emissions arising from operational activities (scopes 1 and 2) and selected scope 3 activities in line with the Carbon Accounting Workbook (v17).
	Scope 1 carbon emissions (burning fuel, process and fugitive emissions, owned transport)	t CO ₂ e	Scope 1 direct carbon emissions by Yorkshire Water for the reporting year, as defined by the Carbon Accounting Workbook (v17)
	Scope 2 carbon emissions (grid electricity use)	t CO ₂ e	Scope 2 electricity carbon emissions by Yorkshire Water for the reporting year, as defined by the Carbon Accounting Workbook (v17)
	Scope 2 reductions in carbon emissions through purchase of green electricity	t CO ₂ e	Scope 2 carbon emissions reduced through procurement decision making in the reporting year, as defined by the Carbon Accounting Workbook (v17)
	Scope 3 carbon emissions (other business travel, outsourced activities, grid electricity T&D)	t CO ₂ e	Scope 3 carbon emissions by Yorkshire Water for the reporting year, as defined by the Carbon Accounting Workbook (v17)
	Scope 3 transmission and distribution carbon emissions reductions through purchase of green electricity	t CO ₂ e	Scope 3 carbon emissions reduced through procurement decision making in the reporting year, as

			defined by the Carbon Accounting Workbook (v17)
	Scope 3 carbon emissions (embedded in capital spend)	t CO ₂ e	Embedded carbon emissions associated with Yorkshire Water's capital expenditure
	Other offset carbon emissions from renewable energy export	t CO ₂ e	Emission reductions from renewable energy export by Yorkshire Water for the reporting year, as defined by the Carbon Accounting Workbook (v17)
	Net carbon emitted/sequestered on YW land	t CO ₂ e	Net change in carbon stocks on Yorkshire Water land as defined by land carbon model used for Yorkshire Water's 'Capital Carbon and carbon arising from owned land' performance commitment reported in APR Table 3. Positive values indicate net emissions and negative values indicate net sequestration.
	GHG emissions per million litres of water served	kg CO ₂ e/MI	Average kg CO ₂ e/MI water supplied during the reporting year using a market-based approach. Includes scope 1, 2, and some scope 3 emissions in line with the Carbon Accounting Workbook
	GHG emissions per million litres of wastewater treated	kg CO ₂ e/MI	Average kg CO ₂ e/MI of wastewater treated during the reporting year using a market-based approach. Includes scope 1, 2, and some scope 3 emissions in line with the Carbon Accounting Workbook

Natural capital impacts

Water abstraction

The volume of water we abstract from the environment is governed by abstraction licences issued by the Environment Agency. Abstraction rates are set in line with environmental carrying capacity at a rate to avoid undue pressure on freshwater environments. Therefore, where we are abstracting in line with our licences, we assume the impact on natural capital to be zero.

Water leakage

Input	Data	Unit	Definition	Source
A.	Average daily leakage	MI/day	The mean daily volume of water lost from our water network between our water treatment works and customers' homes and businesses.	Yorkshire Water APR
B.	Cost to customers per	£/MI	Value placed per MI on water lost through leakage as determined from willingness-	Yorkshire Water Service Measure

	MI lost through leakage		to-pay surveys of Yorkshire Water customers. Expressed as a negative figure.	Framework, inflated to relevant price year using CPIH
Calculations				
1	Value of water lost to leakage = A x B x 365			

Change in bathing water status classifications

Input	Data	Unit	Definition	Source
A.	Number of bathing waters increasing in quality relative to the previous year	no.	Number of designated bathing waters within Yorkshire Water's operational area that increased in quality relative to the previous year	Yorkshire Water internal data
B.	Number of bathing waters decreasing in quality relative to the previous year	no.	Number of designated bathing waters within Yorkshire Water's operational area that decreased in quality relative to the previous year	Yorkshire Water internal data
C.	Value to customers of an increase in bathing water quality	£/change in status category	Value placed by Yorkshire Water customers on an increase in bathing water quality, as derived from customer research. Expressed as a positive figure.	Yorkshire Water Service Measure Framework, inflated to relevant price year using CPIH
D.	Cost to customers of a decrease in bathing water quality	£/change in status category	Value placed by Yorkshire Water customers on a decrease in bathing water quality, as derived from customer research. Expressed as a negative figure	Yorkshire Water Service Measure Framework, inflated to relevant price year using CPIH
Calculations				
1	Net change in value = (A x C) + (B x D)			

Length of river improved

Input	Data	Unit	Definition	Source
A.	Length of river improved	km	Length of river improved as a consequence of regulatory and legislative drivers. Aligns with the performance commitment figure reported for 'Length of river improved' in APR Table 3 but reported on an annual rather than cumulative basis	Internal data
B.	Value to customers of an improvement in	£/km	Value placed by Yorkshire Water customers on an improvement in river water quality, as derived from customer research.	Yorkshire Water Service Measure Framework,

	river water quality			inflated to relevant price year using CPIH
Calculations				
1	Value of the change in river water quality = A x B			

Pollution incidents

Input	Data	Unit	Definition	Source
A.	Number of Category 1 pollution incidents	no.	Total number of serious pollution incidents (Category 1) in the previous calendar year emanating from a discharge or escape of a contaminant from a Yorkshire Water sewerage asset affecting the water environment.	Yorkshire Water APR
B.	Number of Category 2 pollution incidents	no.	Total number of serious pollution incidents (Category 2) in the previous calendar year emanating from a discharge or escape of a contaminant from a Yorkshire Water sewerage asset affecting the water environment	Yorkshire Water APR
C.	Number of Category 3 pollution incidents	no.	Total number of minor pollution incidents (Category 3) in the previous calendar year emanating from a discharge or escape of a contaminant from a Yorkshire Water sewerage asset affecting the water environment	Yorkshire Water APR
D.	Value to customers per Category 1 pollution incident	£/incident	Value placed by Yorkshire Water customers on a Category 1 pollution incident, as derived from customer research. Expressed as a negative figure.	Yorkshire Water Service Measure Framework, inflated to relevant price year using CPIH
E.	Value to customers per Category 2 pollution incident	£/incident	Value placed by Yorkshire Water customers on a Category 2 pollution incident, as derived from customer research. Expressed as a negative figure.	Yorkshire Water Service Measure Framework, inflated to relevant price year using CPIH
F.	Value to customers per Category 3 pollution incident	£/incident	Value placed by Yorkshire Water customers on a Category 3 pollution incident, as derived from customer research. Expressed as a negative figure	Yorkshire Water Service Measure Framework, inflated to relevant price year using CPIH
Calculations				

1	Value of pollution incidents = (A x D) + (B x E) + (C x F)
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Phosphorus released to environment

Input	Data	Unit	Definition	Source
A.	Phosphorus released to water environment	kg/day	Daily phosphorus load released to the water environment under permit from Yorkshire Water's wastewater treatment plants.	Internal data
B.	Economic benefit of reducing phosphorus in the water environment	£/kg	Economic benefit (median figure) of reducing phosphorus in the water environment from agricultural sources, encompassing changes in a range of ecosystem goods and services.	Defra ENCA workbook, inflated to relevant price year using CPIH
Calculations				
1	Cost of phosphorus released to the water environment = A x B x 365 x -1			
Note: for the purposes of this calculation, we assume the source of phosphorus released to the environment has no bearing on its economic cost.				

Change in biodiversity units

Input	Data	Unit	Definition	Source
A.	Net change in biodiversity units	No.	Net change in biodiversity units attributable to Yorkshire Water's activities during the reporting year. Includes biodiversity units on land owned by Yorkshire Water, and also biodiversity units on land not owned by Yorkshire Water but impacted by Yorkshire Water's activities (e.g. through partnership working arrangements). Biodiversity units created through partnership work are attributed equally between the number of partners involved.	YW internal assessment based on the Biodiversity Metric 3.0
B.	Value per biodiversity unit	£/biodiversity unit	Value per biodiversity unit	Defra (2019) 'Biodiversity net gain and local nature recovery Strategies', inflated to relevant price year using CPIH
Calculations				

1	Value of change in biodiversity = A x B
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NO_x and particulate matter (PM) emissions

Input	Data	Unit	Definition	Source
A.	Diesel NO _x emissions	t	Total mass of NO _x emissions from Yorkshire Water's diesel fuel use. Excludes emissions from contract partner vehicles.	Internal data combined with emission factors for NO _x from 'EMEP/EEA air pollutant emission inventory guidebook (2016)'
B.	Petrol NO _x emissions	t	Total mass of NO _x emissions from Yorkshire Water's petrol fuel use. Excludes emissions from contract partner vehicles.	As above
C.	Gas oil NO _x emissions	t	Total mass of NO _x emissions from Yorkshire Water's gas oil use.	As above
D.	Natural gas NO _x emissions	t	Total mass of NO _x emissions from Yorkshire Water's natural gas use.	As above
E.	NO _x damage cost	£/tonne	The monetised societal cost associated with NO _x emissions, expressed as a negative figure.	Defra (2020) 'Air quality appraisal: damage cost guidance', inflated to relevant price year using CPIH
F.	Diesel PM ₂₅ emissions	t	Total mass of PM ₂₅ emissions from Yorkshire Water's diesel fuel use. Excludes emissions from contract partner vehicles.	Internal data combined with emission factors for NO _x from 'EMEP/EEA air pollutant emission inventory guidebook (2016)'
G.	Petrol PM ₂₅ emissions	t	Total mass of PM ₂₅ emissions from Yorkshire Water's petrol fuel use. Excludes emissions from contract partner vehicles.	As above
H.	Gas oil PM ₂₅ emissions	t	Total mass of PM ₂₅ emissions from Yorkshire Water's gas oil use.	As above
I.	Natural gas PM ₂₅ emissions	t	Total mass of PM ₂₅ emissions from Yorkshire Water's natural gas use.	As above

J.	PM ₂₅ damage cost	£/tonne	The monetised societal cost associated with PM ₂₅ emissions, expressed as a negative figure.	Defra (2020) 'Air quality appraisal: damage cost guidance', inflated to relevant price year using CPIH
Calculations				
1	Value of damages associated with NO _x emissions = (A + B + C + D) x E			
2	Value of damages associated with PM ₂₅ emissions = (F + G + H + I) x J			
3	Value of damages associated with NO _x and PM ₂₅ emissions = 1 + 2			

Scope 1 carbon emissions (burning fuel, process and fugitive emissions, owned transport)

Input	Data	Unit	Definition	Source
A.	Direct emissions from burning of fossil fuels (including CHP generated onsite)	t CO _{2e}	Direct emissions from burning of fossil fuels (including CHP generated onsite)	Internal data collected and reported using the Carbon Accounting Workbook v17
B.	Process and fugitive emissions	t CO _{2e}	Process and fugitive emissions	Internal data collected and reported using the Carbon Accounting Workbook v17
C.	Transport emissions from company owned or leased vehicles	t CO _{2e}	Transport emissions from company owned or leased vehicles	Internal data collected and reported using the Carbon Accounting Workbook v17
D.	Emission reductions attributable to Renewable Gas Guarantees of Origin (RGGO)	t CO _{2e}	Emission reductions attributable to the purchase of Renewable Gas Guarantees of Origin (RGGO). Expressed as a negative figure.	Internal data collected and reported using the Carbon Accounting Workbook v17
E.	Welfare cost of carbon	£/t CO _{2e}	The marginal cost of the impacts caused by emitting one extra tonne of greenhouse gas (carbon dioxide equivalent) on global welfare, inclusive of 'non-market' impacts on the environment and human health. Expressed as a negative figure.	Research conducted by Route2 and inflated to relevant price year using CPIH
Calculations				
1	Value of scope 1 carbon emissions = (A + B + C + D) x E			

Scope 2 carbon emissions (grid electricity use) and reductions through purchase of green electricity

Input	Data	Unit	Definition	Source
A.	Total emissions arising from grid electricity used by company (including CHP electricity purchased)	t CO ₂ e	Total emissions arising from grid electricity used by company (including CHP electricity purchased)	Internal data collected and reported using the Carbon Accounting Workbook v17
B.	Welfare cost of carbon	£/t CO ₂ e	The marginal cost of the impacts caused by emitting one extra tonne of greenhouse gas (carbon dioxide equivalent) on global welfare, inclusive of 'non-market' impacts on the environment and human health. Expressed as a negative figure.	Research conducted by Route2 and inflated to relevant price year using CPIH
C.	Percentage of green electricity purchased	%	Percentage of grid electricity emissions covered by REGO certificates by Yorkshire Water for the reporting year	Internal data
Calculations				
1	Value of scope 2 carbon emissions = A x B			
2	Value of reductions in scope 2 carbon emissions through purchase of green electricity = A x B x C x -1			

Scope 3 carbon emissions (other business travel, outsourced activities, grid electricity T&D)

Input	Data	Unit	Definition	Source
A.	Emissions from business travel on public transport and private vehicles used for company business	t CO ₂ e	Emissions from business travel on public transport and private vehicles used for company business	Internal data collected and reported using the Carbon Accounting Workbook v17
B.	Emissions from outsourced activities (if not included in Scope 1 or 2) Energy and other	t CO ₂ e	Emissions from outsourced activities (if not included in Scope 1 or 2) Energy and other	Internal data collected and reported using the Carbon Accounting Workbook v17
C.	Transmission and distribution emissions from	t CO ₂ e	Transmission and distribution emissions from total grid electricity used by	Internal data collected and reported using the

	total grid electricity used by company (including CHP electricity purchased)		company (including CHP electricity purchased)	Carbon Accounting Workbook v17
D.	Welfare cost of carbon	£/t CO ₂ e	The marginal cost of the impacts caused by emitting one extra tonne of greenhouse gas (carbon dioxide equivalent) on global welfare, inclusive of 'non-market' impacts on the environment and human health. Expressed as a negative figure.	Research conducted by Route2 and inflated to relevant price year using CPIH
Calculations				
1	Value of scope 3 carbon emissions = (A + B + C) x D			

Scope 3 transmission and distribution carbon emissions reductions through purchase of green electricity

Input	Data	Unit	Definition	Source
A.	Transmission and distribution emissions from total grid electricity used by company (including CHP electricity purchased)	t CO ₂ e	Transmission and distribution emissions from total grid electricity used by company (including CHP electricity purchased)	Internal data collected and reported using the Carbon Accounting Workbook v17
B.	Welfare cost of carbon	£/t CO ₂ e	The marginal cost of the impacts caused by emitting one extra tonne of greenhouse gas (carbon dioxide equivalent) on global welfare, inclusive of 'non-market' impacts on the environment and human health. Expressed as a negative figure.	Research conducted by Route2 and inflated to relevant price year using CPIH
C.	Percentage of green electricity purchased	%	Percentage of grid electricity emissions covered by REGO certificates by Yorkshire Water for the reporting year	Internal data
Calculations				
1	Value of reductions in scope 3 T&D carbon emissions through purchase of green electricity = A x B x C x -1			

Scope 3 carbon emissions (embedded in capital spend)

Input	Data	Unit	Definition	Source
A.	Emissions embedded per £ of capital	t CO ₂ e/£	Carbon emissions embedded in capital investment activity per pound spent	Internal cost and carbon models

	investment activity			
B.	Capital investment	£	Capital investment made by Yorkshire Water in the reporting year	ARFS
C.	Welfare cost of carbon	£/t CO ₂ e	The marginal cost of the impacts caused by emitting one extra tonne of greenhouse gas (carbon dioxide equivalent) on global welfare, inclusive of 'non-market' impacts on the environment and human health. Expressed as a negative figure.	Research conducted by Route2 and inflated to relevant price year using CPIH
Calculations				
1	Value of scope 3 carbon emissions embedded in capital spend = A x B x C			

Net carbon emitted/sequestered on YW land

Input	Data	Unit	Definition	Source
A.	Carbon emitted/sequestered on YW land	t CO ₂ e	Total change in carbon stocks on Yorkshire Water land. Positive values indicate net emissions and negative values indicate net sequestration.	Internal data based on a land carbon model developed by UK Water Industry Research
B.	Welfare cost of carbon	£/t CO ₂ e	The marginal cost of the impacts caused by emitting one extra tonne of greenhouse gas (carbon dioxide equivalent) on global welfare, inclusive of 'non-market' impacts on the environment and human health. Expressed as a negative figure.	Research conducted by Route2 and inflated to relevant price year using CPIH
Calculations				
1	Value of carbon emitted/sequestered on YW land = A x B			

Human capital

Human capital assets

Assets	Unit	Definition
Total number of colleagues	no.	Total number of Yorkshire Water colleagues employed on 31 March
Senior managers	no.	Total number of Yorkshire Water senior managers (Bands 1 and 2) employed on 31 March
Statutory directors	no.	Total number of Yorkshire Water statutory directors employed on 31 March
Percentage of colleagues female	%	Female (ciswomen and transwomen) Yorkshire Water colleagues as a percentage of the total number of colleagues, on 31 March
Percentage of statutory directors female	%	Female (ciswomen and transwomen) Yorkshire Water statutory directors as a percentage of the total number of statutory directors, on 31 March
Percentage of senior managers female	%	Female (ciswomen and transwomen) Yorkshire Water senior managers (Bands 1 and 2) as a percentage of the total number of senior managers, on 31 March
Percentage of colleagues BAME	%	Yorkshire Water colleagues identifying as Black, Asian and minority ethnic (BAME) as a percentage of the total number of colleagues, on 31 March
Percentage of senior managers BAME	%	Yorkshire Water senior managers (Bands 1 and 2) identifying as Black, Asian and minority ethnic (BAME) as a percentage of the total number of colleagues, on 31 March
Percentage of statutory directors BAME	%	Yorkshire Water statutory directors identifying as Black, Asian and minority ethnic (BAME) as a percentage of the total number of colleagues, on 31 March
Colleague engagement score	%	Colleague engagement score based on the results of the most recent company-wide engagement survey
Gender pay gap (mean hourly rate)	%	Mean gender pay gap based on hourly rates of pay for full-pay relevant colleagues (defined by the Government Equalities Office) at the snapshot date of 5 April in the reporting year, expressed as a percentage. A negative value indicates a favourable outcome for female colleagues.
Percentage of colleagues receiving a real living wage	%	Percentage of Yorkshire Water colleagues (excluding apprentices) receiving a real living wage as defined by the Living Wage Foundation, as checked within the last quarter of the reporting year.

Human capital outputs

Theme	Outputs	Unit	Definition
Performance and development	Wage inflation / deflation	%	Annual change in mean colleague employment cost (including salary, employer National Insurance Contribution, and employer pension contribution), expressed as a percentage against inflation or deflation of the economy based on

			annual CPIH from the Office of National Statistics.
	Colleague turnover rate	%	Number of Yorkshire Water colleagues leaving the business, either voluntarily or involuntarily, as a percentage of the total number of colleagues (monthly average).
	Number of new Yorkshire Water apprentices	no.	See reporting criteria for 'Number of new Yorkshire Water apprentices' in final section of this document.
	Colleagues receiving a pay uplift to meet increases in the living wage	no.	Number of Yorkshire Water colleagues receiving an additional pay award to ensure their salary met or exceeded a real living wage as defined by the Living Wage Foundation
	External hires	no.	Number of Yorkshire Water colleagues beginning employment that were not already employed by Yorkshire Water.
Health, safety, and wellbeing	Lost days avoided through colleague engagement	no.	Number of avoided days lost to colleague absenteeism (not being at work) and presenteeism (being at work but not being productive) as compared to a reference value for avoided days lost for a fully engaged model colleague.
	Spend on health / wellbeing benefit programmes	£	Total spend on health and wellbeing benefit programmes. Includes costs of direct investment in wellbeing programmes, employment cost of hours spent in wellbeing programmes, and costs of healthcare programmes.
	Lost Time Injury Rate (LTIR)	rate	The number of hours lost to work-related injuries with more than one day of lost work per 100,000 hours worked by Yorkshire Water colleagues (including overtime and sickness hours)
	Sickness absence rate	%	The percentage of working hours lost because of sickness or injury reported by Yorkshire Water colleagues. Excludes periods where colleagues tested positive for Covid-19 but were able to continue working from home.

Human capital impacts

Colleague turnover (voluntary leavers)

Input	Data	Unit	Definition	Source
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A.	Number of voluntary leavers	no.	Number of Yorkshire Water colleagues leaving the business voluntarily.	Internal data
B.	Average recruitment time	months	Mean number of months required to recruit a new colleague	Internal data
C.	Direct replacement cost	%	Cost of replacing a voluntary leaver as a percentage of annual salary	Yorkshire Water (2018) TIVA – Methodology Report, based on Bliss et al. (2016) The Business Cost and Impact of Colleague Turnover
D.	Lost productivity cost for voluntary leavers	%	Cost of lost productivity associated with a voluntary leaver as a percentage of annual salary	As above
E.	Average annual employment cost per colleague	£	Mean colleague employment cost (including salary, employer National Insurance Contribution, and employer pension contribution)	Internal data
Calculations				
1	Lost productivity cost (during recruitment) = $B \times (E/12) \times A$			
2	Lost productivity cost (new colleagues getting up to speed) = $D \times E \times A$			
3	Hiring & training cost for replacement colleagues (direct replacement cost) = $C \times E \times A$			
4	Value lost from lost productivity and replacement of voluntary leavers = $(1 + 2 + 3) \times -1$			

Colleagues undergoing performance reviews

Input	Data	Unit	Definition	Source
A.	Colleague turnover costs	£	Costs associated with colleague turnover	Sum of 1, 2, and 3 from Colleague turnover (voluntary leavers), above
B.	Percentage of colleagues subject to performance reviews	%	Percentage of colleagues undergoing one or more management performance reviews in the reporting year	Internal data
C.	Average employment cost per colleague	£	Mean employment cost per colleague (including salary, employer National Insurance Contribution, and employer pension contribution)	Data from ARFS
D.	Turnover reduction due to performance reviews	%	Percentage reduction in colleague turnover due to performance reviews	Yorkshire Water (2018) TIVA – Methodology Report, based on Asplund & Blacksmith (2011) The Secret of Higher Performance

E.	Increase in productivity due to performance reviews	%	Percentage increase in colleague productivity due to performance reviews	Yorkshire Water (2018) TIVA – Methodology Report, based on research gathered from multiple studies
Calculations				
1	Avoided turnover costs = A x B x D			
2	Avoided productivity costs = B x C x E			
3	Total value of colleagues undergoing performance reviews = 1 + 2			

Wage inflation

Input	Data	Unit	Definition	Source
A.	Last year's employment cost per colleague	£	Mean colleague employment cost (including salary, employer National Insurance Contribution, and employer pension contribution) for the previous reporting year	Based on data from ARFS for previous year
B.	This year's employment cost per colleague	£	Mean colleague employment cost (including salary, employer National Insurance Contribution, and employer pension contribution) for the current reporting year	Based on data from ARFS for current year
C.	Inflation (+) or deflation (-) of economy	%	CPIH annual rate of inflation	Office for National Statistics
D.	Total employment costs	£	Total employment costs for all colleagues (including salaries, employer National Insurance Contributions, and employer pension contributions) for the current reporting year	Based on data from ARFS for current year
Calculations				
1	Percentage increase or decrease in employment cost = $((\mathbf{B} - \mathbf{A}) / \mathbf{A}) \times 100$			
2	Change in wages relative to inflation = 1 - C			
3	Value of change in income due to wage inflation = 2 x D			

Apprenticeships

Input	Data	Unit	Definition	Source
A.	Number of new Yorkshire Water apprentices	no.	See reporting criteria for 'Number of new Yorkshire Water apprentices' in final section of this document	Internal data

B.	Annual apprentice employment cost	£/apprentice	Mean annual employment cost per newly hired apprentice. Includes costs of salaries (excluding on-costs), vehicles (purchasing and running costs), personal protective equipment, training, IT equipment, phones, and additional activities. Excludes employment costs of existing colleagues accessing apprentice levy funds.	Internal data
C.	Social Return on Investment (SROI) on apprenticeship programmes	%	The value of social, environmental, and economic outcomes, expressed as a percentage of the cost of an intervention	Yorkshire Water (2018) TIVA – Methodology Report, based on Route2 research
D.	Total colleague hours spent administering the apprenticeship programme	hrs	Total colleague hours spent administering Yorkshire Water's apprenticeship programme within the reporting year. Includes resourcing, development programme design, development programme delivery, inductions, and interaction with training providers	Internal data
E.	Total direct costs required to run the apprenticeship programme	£	Total direct costs required to run the apprenticeship programme incurred within the reporting year. Includes costs for interviewers, trainers, apprentice leads, line managers, expenses, and qualifications. Excludes any costs captured in B or (D x F)	Internal data
F.	Average hourly employment cost per colleague	£/hr	Mean colleague employment cost per hour (including salary, employer National Insurance Contribution, and employer pension contribution)	Internal data
Calculations				
1	Total investment in the apprenticeship programme administration = (D x F) + E			
2	Total investment in apprentice colleague = A x B			
3	Value of social return on investment from new apprenticeships = ((1 + 2) x C) – (1 + 2)			

Colleague engagement

Input	Data	Unit	Definition	Source
A.	Colleague engagement score	%	Colleague engagement score based on the results of the most recent company-wide engagement survey	ARFS
B.	Benchmark of colleagues classified as 'engaged'	%	Benchmark of colleagues classified as 'engaged' for the energy and utilities sector	Colleague engagement survey provider
C.	Avoided days lost per colleague to absenteeism and presenteeism due to engagement	days	Avoided days lost per colleague to absenteeism and presenteeism due to engagement	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations, based on Willis Towers Watson (2012) Global Workforce Study
D.	Total number of colleagues	no.	Total number of Yorkshire Water colleagues employed on 31 March	ARFS
E.	Total cost of sickness absence	£	Total cost associated with all Yorkshire Water colleague sickness absence episodes, including costs associated with lost productivity, individual financial and non-financial costs, and government treatment costs.	See 'Sick days' below
F.	Number of days lost to sickness	no.	Total number of days of sick leave (including part days) reported by Yorkshire Water colleagues within the reporting year. Excludes days where colleagues tested positive for Covid-19 but were able to continue working from home.	Internal data
Calculations				
1	Total lost days avoided through colleague engagement = $(C \times (1 - (1 - A) / (1 - B))) \times D$			
2	Value of lost days avoided through colleague engagement = $(E / F) \times 1$			
Note: Given that not all colleagues participate to engagement surveys, we assume that the score from colleagues who did participate (input A) is representative of all colleagues. In addition, the benchmark engagement score (input B) is reflective of the expected participation rate within the energy and utilities sector.				

Health and wellbeing programmes

Input	Data	Unit	Definition	Source
A.	Average hourly employment cost	£/hr	Mean hourly employment cost per colleague	Internal data
B.	Total direct investment in defined wellbeing programmes	£	Total direct investment in defined wellbeing programmes organised by the Occupational Health team within the reporting year.	Internal data
C.	Colleague uptake of wellbeing programmes	no.	Total number of colleagues participating in one or more wellbeing programmes organised by the Occupational Health team within the reporting year.	Internal data
D.	Paid hours spent per colleague in wellbeing programmes	hrs/pers.	Total number of paid hours spent by colleagues participating in one or more wellbeing programmes organised by the Occupational Health team within the reporting year.	Internal data
E.	Return on Investment (ROI) in wellbeing programmes	%	Return on investment for spending on wellbeing programmes	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Rand Corp. (2014) Do Workplace Wellness Programs Save Employers money?
F.	Individual non-financial gain from a wellbeing programme	£	The annual Individual non-financial gain from a wellbeing programme, expressed as a monetary value	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on DCMS (2014) Quantifying and Valuing the Wellbeing Impacts of Culture and Sport, inflated to relevant price year using CPIH
G.	Spending on health care programmes	£	Total spending on health care programmes for Yorkshire Water colleagues within the reporting year. Includes costs of counselling, physio, occupational health physician, psychiatric assessments, eye care vouchers, Slimming World vouchers, private hospital appointments and scans,	Internal data

			speech therapy, dyslexia therapy, operations, and nutritional therapy.	
H.	ROI for health care programmes	%	Return on investment for spending on health care programmes	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Berry et. al. (2010) What's the hard return on colleague wellness programmes? Inflated to relevant price year using CPIH
Calculations				
1	Total hours of colleague participation in defined wellbeing programmes = C x D			
2	Employment cost of hours spent in defined wellbeing programmes = I x A			
3	Return on Investment for colleague participation in wellbeing programmes = (B + 2 x E) – (B + 2)			
4	Non-financial benefit of wellbeing programmes to individuals = C x F			
5	Net benefit of wellbeing programmes = 3 + 4			
6	Net benefit of health programme = (G x H) – G			
7	Total value created through health and wellbeing programmes = 5 + 6			

Injuries

Input	Data	Unit	Definition	Source
A.	Number of minor Injuries	no.	The number of injuries requiring first aid or medical treatment sustained by Yorkshire Water colleagues in the reporting year that did not impact the colleagues' ability to return to work the following day	Internal data
B.	Number of major Injuries	no.	The number of injuries sustained by Yorkshire Water colleagues in the reporting year that resulted in the colleague being unable to return to work for a duration of one day or more	Internal data
C.	Minor injury value lost	£	Monetised value of minor injury, including financial and non-financial costs to individual, company, and	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based

			government, expressed as a negative figure.	on UK Health and Safety Executive (2015/16), inflated to relevant price year using CPIH
D.	Major injury value lost	£	Monetised value of major injury, including financial and non-financial costs to individual, company, and government, expressed as a negative figure.	As above
Calculations				
1	Total value lost through injuries = (A x C) + (B x D)			

Sickness absence

Input	Data	Unit	Definition	Source
A.	Number of sick days	no.	Total number of days of sick leave (including part days) reported by Yorkshire Water colleagues within the reporting year. Excludes days where colleagues tested positive for Covid-19 but were able to continue working from home.	Internal data
B.	Average daily employment cost per colleague	£/day	Mean daily employment cost per colleague	Internal data
C.	Medical treatment cost per minor illness (minor)	£	-	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on The Guardian (2016) How much have I cost the NHS? Inflated to relevant price year using CPIH
D.	Medical treatment cost per Musculoskeletal problem (minor)	£	-	As above
E.	Medical treatment cost per 'Other' illness (minor)	£	-	As above
F.	Medical treatment cost per episode of Stress, depression, or anxiety (minor)	£	-	As above

G.	Medical treatment cost per episode of Gastrointestinal problem (minor)	£	-	As above
H.	Medical treatment cost per eye/ear/nose/mouth/dental problem (minor)	£	-	As above
I.	Medical treatment cost per respiratory condition (minor)	£	-	As above
J.	Medical treatment cost per headache or migraine (minor)	£	-	As above
K.	Medical treatment cost per genito-urinary problem (minor)	£	-	As above
L.	Medical treatment cost per heart, blood pressure, or circulation problem (major)	£	-	As above
M.	Medical treatment cost per episode of a serious mental health problem (major)	£	-	As above
N.	Number of sickness episodes per minor illness (minor)	no.	-	Internal data
O.	Number of sickness episodes per Musculoskeletal problem (minor)	no.	-	As above
P.	Number of sickness episodes per 'Other' illness (minor)	no.	-	As above
Q.	Number of sickness episodes per episode of Stress, depression, or anxiety (minor)	no.	-	As above
R.	Number of sickness episodes per episode of Gastrointestinal problem (minor)	no.	-	As above
S.	Number of sickness episodes per eye/ear/nose/mouth/dental problem (minor)	no.	-	As above
T.	Number of sickness episodes per respiratory condition (minor)	no.	-	As above

U.	Number of sickness episodes per headache or migraine (minor)	no.	-	As above
V.	Number of sickness episodes per genito-urinary problem (minor)	no.	-	As above
W.	Number of sickness episodes per heart, blood pressure, or circulation problem (major)	no.	-	As above
X.	Number of sickness episodes per episode of a serious mental health problem (major)	no.	-	As above
Y.	Individual non-financial cost (minor illness)	£	-	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on UK Health and Safety Executive (2015/16), inflated to relevant price year using CPIH
Z.	Individual non-financial cost (major illness)	£	-	As above
AA.	Individual financial cost (minor illness)	£	-	As above
AB.	Individual financial cost (major illness)	£	-	As above
Calculations				
1	Number of minor sickness episodes = SUM(N:V)			
2	Number of major sickness episodes = SUM(W:X)			
3	Cost of lost days productivity = A x B			
4	Individual non-financial costs of a minor illness = 1 x Y			
5	Individual non-financial costs of a major illness = 2 x Z			
6	Individual financial costs of a minor illness = 1 x AA			
7	Individual financial costs of a major illness = 2 x AB			
8	Government cost of treatment = SUMPRODUCT(C:M, N:X)			
9	Total value lost through sickness episodes = (3 + 4 + 5 + 6 + 7 + 8) x -1			

Gender pay gap

Input	Data	Unit	Definition	Source
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A.	Average salary per colleague	£	Mean annual salary paid per Yorkshire Water colleague	Internal data
B.	Gender pay gap	%	Mean gender pay gap based on hourly rates of pay for full-pay relevant colleagues (defined by the Government Equalities Office) at the snapshot date of 5 April in the reporting year, expressed as a percentage. A negative value indicates a favourable outcome for female colleagues.	Internal data
C.	Number of female colleagues	no.	Sum of ciswomen and transwomen employed by YW	Internal data
Calculations				
1	Total lost value to female colleagues = IF((A x B x C x -1) > 0, 0, A x B x C x -1)			

Intellectual capital

Intellectual capital assets

Assets	Unit	Definition
Number of solutions delivered in partnership with others	no.	The number of partnership projects delivered by Yorkshire Water in partnership with independent agencies, organisations, or individuals in the reporting year. Aligns with AMP7 Performance Commitment 'Working with others' reported in APR Table 3 but does not represent all of Yorkshire Water's partnerships.

Intellectual capital outputs

Theme	Outputs	Unit	Definition
Research and development	Spend on research and development (R&D)	£m	See reporting criteria for 'Spend on research and development (R&D)' in Appendix 1 of this document.
Knowledge and learning	Total colleague hours spent on training	hrs	See reporting criteria for 'Total colleague hours spent on training' in final section of this document

Intellectual capital impacts

Return on R&D investment

Input	Data	Unit	Definition	Source
A.	Spend on research & development (R&D)	£	See reporting criteria for 'Spend on research and development (R&D)' in final section of this document	Internal data
B.	ROI for R&D	%	Return on R&D investment multiplier	Internal data
Calculations				
1	Value from return on R&D investment = (A x B) - A			

Colleague training

Input	Data	Unit	Definition	Source
A.	Diversity programmes - direct spend	£	Total spend on diversity programmes for Yorkshire Water colleagues during the reporting year. Includes BAME and Women in Leadership programmes.	Internal data

B.	Efficiency skills - direct spend	£	Total spend on efficiency skills for Yorkshire Water colleagues during the reporting year.	Internal data
C.	Health and safety - direct spend	£	Total spend on health and safety training for Yorkshire Water colleagues during the reporting year.	Internal data
D.	New colleague - direct spend	£	Total spend on new colleague training for Yorkshire Water colleagues during the reporting year.	Internal data
E.	Professional skills - direct spend	£	Total spend on professional skills training for Yorkshire Water colleagues during the reporting year.	Internal data
F.	Soft skills - direct spend	£	Total spend on soft skills training for Yorkshire Water colleagues during the reporting year.	Internal data
G.	Leadership skills - direct spend	£	Total spend on leadership skills training for Yorkshire Water colleagues during the reporting year. Excludes BAME and Women in Leadership programmes.	Internal data
H.	Diversity programmes - total hours	hr	Total Yorkshire Water colleague hours spent on diversity programme training during the reporting year.	Internal data
I.	Efficiency skills - total hours	hr	Total Yorkshire Water colleague hours spent on efficiency skills during the reporting year.	Internal data
J.	Health and safety - total hours	hr	Total Yorkshire Water colleague hours spent on health and safety training during the reporting year.	Internal data
K.	New colleague - total hours	hr	Total Yorkshire Water colleague hours spent on new colleague training during the reporting year.	Internal data
L.	Professional skills - total hours	hr	Total Yorkshire Water colleague hours spent on professional skills training during the reporting year.	Internal data
M.	Soft skills - total hours	hr	Total Yorkshire Water colleague hours spent on soft skills training during the reporting year.	Internal data
N.	Leadership skills - total hours	hr	Total Yorkshire Water colleague hours spent on leadership skills training during the reporting year.	Internal data
O.	Mean hourly employment cost per colleague	£/hr	Mean hourly employment cost per colleague	Internal data

P.	Diversity programmes – ROI	%	-	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Route2 research
Q.	Efficiency skills – ROI	%	-	As above
R.	Health and safety – ROI	%	-	As above
S.	New colleague – ROI	%	-	As above
T.	Professional skills – ROI	%	-	As above
U.	Soft skills – ROI	%	-	As above
V.	Leadership skills – ROI	%	-	As above
Calculations				
1	Investment in diversity programmes = A + (H x O)			
2	Investment in efficiency skills = B + (I x O)			
3	Investment in health and safety = C + (J x O)			
4	Investment in new colleague training = D + (K x O)			
5	Investment in professional skills = E + (L x O)			
6	Investment in soft skills = F + (M x O)			
7	Investment in leadership skills = G + (N x O)			
8	Return on investment in diversity programmes = (I x P) - 1			
9	Return on investment in efficiency skills = (2 x Q) - 2			
10	Return on investment in health and safety = (3 x R) - 3			
11	Return on investment in new colleague training = (4 x S) - 4			
12	Return on investment in professional skills = (5 x T) - 5			
13	Return on investment in soft skills = (6 x U) - 6			
14	Return on investment in leadership skills = (7 x V) - 7			
15	Value generated from colleague training = $\sum(8:14)$			
Note 1: Definitions for inputs A to N in this table include training completed during the year by those who have subsequently left the company, but exclude any training arranged by individual colleagues or teams other than centrally managed learning and development.				
Note 2: Due to internal reporting system limitations 'BAME and Women in Leadership programmes' are currently reported under 'Diversity programmes'. However, we recognise these should be reported under 'Leadership programmes'.				

Social capital

Social capital assets

Assets	Unit	Definition
Public recreational sites	no.	Number of recreational visitor sites open to members of the public owned and managed by Yorkshire Water on 31 March. Excludes open access areas and sites managed under tenancy agreements.
Total number of household customers	no.	Average number of residential customers in the year, including water only, wastewater only, and water and wastewater customers.
Customer satisfaction (average)	%	Average percentage of Yorkshire Water customers satisfied with water and wastewater services, derived from the two lines below.
Customer satisfaction (water)	%	Percentage of Yorkshire Water customers satisfied with water services, calculated as the mean result of all customer surveys conducted in the reporting year.
Customer satisfaction (wastewater)	%	Percentage of Yorkshire Water customers satisfied with wastewater services, calculated as the mean result of all customer surveys conducted in the reporting year.
Risks of severe restrictions in a drought	%	The percentage of the customer population at risk of experiencing severe restrictions in a 1-in-200 year drought, on average, over 25 years. Performance Commitment figure reported for 'Risk of severe restrictions in a drought' in APR Table 3
Number of customers on the Priority Services Register	no.	Number of customers supplied with water and/or wastewater services that are registered on Yorkshire Water's Priority Services Register on 31 March. Forms part of Performance Commitment figure reported for 'Priority services for customers in vulnerable circumstances' in APR Table 3
Awareness of the Priority Services Register	%	The percentage of Yorkshire Water's household customers who state, when questioned, that they are aware of the additional services offered by Yorkshire Water's Priority Services Register. Performance Commitment figure reported for 'Priority services awareness' in APR Table 3
Priority Services Register satisfaction	%	The percentage of Yorkshire Water's residential customers on the Priority Service Register who, when questioned, agree that they are satisfied with the Priority Service Register. Performance Commitment figure reported for 'Priority services satisfaction' in APR Table 3
Number of colleagues registered as Dementia Friends	no.	Total number of Yorkshire Water colleagues recorded as having taken part in an Alzheimer's Society Dementia Friends Awareness session as at 31 March in the reporting year.
Total number of suppliers	no.	The total number of suppliers that have invoiced Yorkshire Water, either within or prior to the reporting year, and that have been paid within the reporting year (excluding one-time suppliers).

Social capital outputs

Theme	Outputs	Unit	Definition
Trust	Total spend on suppliers	£m	The total spend on suppliers within the reporting year. Spend is measured at the point in time when a payment is cleared, to align with when the benefit is received by the supplier.
	Percentage spend with local suppliers	%	See reporting criteria for 'Percentage spend with local suppliers' in Appendix 1 of this document.
	Percentage of invoices paid late	%	The number of supplier invoices with a clearing date later than the due date within the reporting year, as a percentage of all supplier invoices.
	Percentage of invoices paid on time or early	%	The number of supplier invoices with a clearing date on or earlier than the due date within the reporting year, as a percentage of all supplier invoices.
	Customer trust in Yorkshire Water	%	Average percentage of customers who agree YW are a company they trust, calculated as the mean result of all customer surveys conducted in the reporting year.
	Customer experience score	%	The weighted average of customer satisfaction scores from customer service and customer experience Surveys. Performance commitment figure reported for 'C-MeX' in APR Table 3.
	Developer experience score	%	A measure of developer services customer satisfaction. Performance commitment figure reported for 'D-MeX' in APR Table 3.
Public health and wellbeing	Total amount of water delivered to customers	MI	Volume of all potable water supplied by Yorkshire Water within the reporting year as reported in APR table 6B
	Water quality compliance (CRI)	score	The sum of the individual CRI scores for every compliance failure reported during the year as defined by the DWI Compliance Risk Index. Performance Commitment figure reported for 'Water quality compliance (CRI)' in APR Table 3
	Average water supply interruption length	mins:secs	The average number of minutes lost per customer for the whole customer base for interruptions that lasted three hours or more. Performance Commitment figure

			reported for 'Water supply interruptions' in APR Table 3
	Drinking water contacts	no./10,000 population	The number of times Yorkshire Water was contacted by consumers due to the taste and odour of drinking water, or due to drinking water not being clear, per 10,000 population. Performance Commitment figure reported for 'Drinking water contacts' in APR Table 3
	Internal flooding incidents	no.	The number of internal sewer flooding incidents including sewer flooding due to severe weather events. Performance Commitment figure reported for 'Internal sewer flooding' in APR Table 3
	External flooding incidents	no.	The number of properties (or curtilages) flooded during each flooding event from a public sewer. Performance Commitment figure reported for 'External sewer flooding' in APR Table 3.
	Significant water supply events (>12 hours)	no.	The number of supply interruption events lasting for a duration of 12 hours or longer, irrespective of whether it is planned, unplanned or caused by a third party. Performance Commitment figure reported for 'Significant water supply events' in APR Table 3.
	Health benefits of providing a public water supply compared to a private supply	QALYs	Benefits to public health, expressed as quality adjusted life years, generated from providing a public water supply compared to a private supply
	Number of visitors to Yorkshire Water sites	no.	Total number of visits by members of the public to Yorkshire Water public recreational sites.
	Number of visits involving exercise to Yorkshire Water sites	no.	Total number of visits by members of the public to Yorkshire Water public recreational sites involving exercise of more than 30 minutes.
	Health benefits of recreational exercise on YW sites	QALYs	Benefits to public health, expressed as quality adjusted life years, generated from recreational exercise at Yorkshire Water's publicly accessible recreation sites.
Vulnerability	Average combined bill	£	Average annual combined water and sewerage bill for Yorkshire Water household customers for the reporting year, as reported on the Discover Water website
	Cost of bad debt to customers	%	The cost of unrecovered residential customers' bills ('bad debt') to all customers, expressed as a proportion of the average annual

			bill. Performance Commitment figure reported for 'Cost of bad debt' in APR Table 3
	Inclusive customer service score	%	The improvement in the services provided to customers in circumstances that make them vulnerable, specifically those on Yorkshire Water's Priority Services Register, based on a review of the accessibility of service provision, the types of services provided, and the effectiveness of services provided. Performance Commitment figure reported for 'Inclusive customer service' in APR Table 3
	Affordability of bills	%	The percentage of customers asked in a Consumer Council for Water annual survey who respond positively to the question, "How much do you agree or disagree that the water and sewerage charges that you pay for are affordable to you?". Performance Commitment figure reported for 'Affordability of bills' in APR Table 3
	Number of customers provided with financial support	no.	The number of residential customers who receive financial support through one of Yorkshire Water's approved schemes each year. Performance Commitment figure reported for 'Direct support given to customers' in APR Table 3.
	Number of highly vulnerable customers provided with specialist support	no.	Number of highly vulnerable customers supported by Yorkshire Water in the reporting year through interventions to improve their health and wellbeing, such as by contacting support agencies to provide additional care services.
Public education	Number of participants in educational programmes	no.	The total number of individuals recorded as participating in educational programmes run by Yorkshire Water in the reporting year. Includes face-to-face and online learning. Excludes educational programmes delivered via social media.
	Media coverage volume	no. reports	The number of media mentions of Yorkshire Water and other Kelda Group companies in the reporting year.
	Reach on social media	no. impressions	The number of opportunities customers have to see messages generated by Yorkshire Water on social media in the reporting year.

	Media sentiment	% positive	The percentage of media coverage of Yorkshire Water that is positive in sentiment, as opposed to negative or neutral, in the reporting year.
	Brand perception	Score out of 10	Average score of customers who have a positive brand perception of Yorkshire Water, calculated as the mean result of all customer surveys conducted in the reporting year.

Social capital impacts

Late payments to suppliers

Input	Data	Unit	Definition	Source
A.	Amount per individual payment	£	The cost of each supplier payment	Internal data
B.	Statutory interest rate on late commercial payments	%	Statutory interest rate of 8% + the Bank of England base rate as of 31 March.	Yorkshire Water (2018) TIVA - Methodology Report, based on Gov.uk: Interest on late commercial payments and Bank of England Statistical Interactive Database - official Bank Rate history
C.	Days per year	no.	366 for leap years; 365 for all other years	-
D.	Number of days late per individual payment	no.	The number of days that the payment was made to the supplier later than the contractual payment due date	Internal data
E.	Number of individual late payments	no.	The number of individual late payments made in the reporting year	Internal data
Calculations				
1	Value per day each payment is paid late = $((A \times B) / C) \times D$ (calculated for each individual late payment)			
2	Total value lost to suppliers through late payments = $\sum_{n=1}^E (1 \times D)$			
Note: this calculation assumes a constant rate of statutory interest across all payments. In practice, interest rates may differ if there is different rate in a supplier contract.				

Early payments to suppliers

Input	Data	Unit	Definition	Source
A.	Amount per individual payment	£	The cost of each supplier payment	Internal data

B.	Statutory interest rate on late commercial payments	%	Statutory interest rate of 8% + the Bank of England base rate as of 31 March	Yorkshire Water (2018) TIVA – Methodology Report, based on Gov.uk: Interest on late commercial payments and Bank of England Statistical Interactive Database – official Bank Rate history
C.	Days per year	no.	366 for leap years; 365 all other years	-
D.	Number of days early per individual payment	no.	The number of days that the payment was made to the supplier earlier than the contractual payment due date	Internal data
E.	Number of individual early payments	no.	The number of individual early payments made in the reporting year	Internal data
Calculations				
1	Value per day each payment is paid early = $(A \times B) / C$			
2	Total value created for suppliers through early payments = $\sum_{n=1}^E (1 \times D)$			
Note: this calculation assumes a constant rate of statutory interest across all payments. In practice, interest rates may differ if there is different rate in a supplier contract.				

Health benefits of providing a public water supply compared to a private supply

Input	Data	Unit	Definition	Source
A.	Total number of households provided with potable water	no.	Households supplied with potable water by Yorkshire Water	APR
B.	Average household size in Yorkshire	no.	Average household population size in Yorkshire	www.statista.com/statistics/295548/households-in-england-uk-average-size-by-region/
C.	Likelihood of waterborne illness per person using a private water supply	%	The probability of contracting a gastro-intestinal waterborne illness per person from a water supply provided by someone other than a statutorily appointed undertaker, such as a spring, borehole, or well	Smith et al. (2006) 'Outbreaks of waterborne infectious intestinal disease'
D.	Likelihood of waterborne illness per person using a public water supply	%	The probability of contracting a gastro-intestinal waterborne illness per person from a water supply provided by a statutorily appointed water undertaker	Smith et al. (2006) 'Outbreaks of waterborne infectious intestinal disease'
E.	QALYs lost per case of <i>Cryptosporidium</i>	QALYs	Quality-adjusted life years lost per individual case of <i>Cryptosporidium</i> illness	eftec (2017) 'Estimating Quality Adjusted Life Years and Willingness

				to Pay Values for Microbiological Foodborne Disease (Phase 2)'
F.	Monetary value of a QALY	£	The monetary willingness-to-pay value for a quality-adjusted life year	HM Treasury Green Book (2022) for 2020/21 prices, inflated to relevant price year using CPIH
Calculations				
1	Total number of people provided with potable water by Yorkshire Water = A x B			
2	Total number of illnesses avoided by Yorkshire Water supply = (1 x C) - (1 x D)			
3	Total number of lost QALYs avoided by Yorkshire Water supply = 2 x E			
4	Value added through health benefits associated with a public water supply = 3 x F			

Recreational visits to Yorkshire Water sites

Input	Data	Unit	Definition	Source
A.	Number of visitors	no.	Total number of visits by members of the public to publicly accessible Yorkshire Water sites during the reporting year.	Internal calculation based on the Outdoor Recreation Valuation Tool (ORVal) v2.0
B.	Value per visit	£/visit	Average willingness to pay value for a recreational visit to a water habitat	Defra ENCA workbook, inflated to relevant price year using CPIH
Calculations				
1	Value of recreational visits = A x B			

Health benefits of exercise on Yorkshire Water sites

Input	Data	Unit	Definition	Source
A.	Health benefits of recreational exercise on YW sites	QALYs	Quality-adjusted life years gained from recreational exercise associated with visits by members of the public to publicly accessible Yorkshire Water sites	Internal data from visitor surveys and visitor number estimates from the Outdoor Recreation Valuation Tool (ORVal: Version 2.0)
B.	Monetary value of a QALY	£	The monetary willingness-to-pay value for a quality-adjusted life year	HM Treasury Green Book (2022) for 2020/21 prices, inflated to relevant price year using CPIH
Calculations				

1	Total value created from health benefits of recreational exercise on YW sites = A x B
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Water delivered to customers

The social value attributable to Yorkshire Water for delivery of water supply to customers is assumed to be zero. This is on the basis that provision of clean water to customers is a fundamental requirement of our water supply appointment and, were Yorkshire Water not to exist, would be provided by an alternative water undertaker. Similarly, we do not estimate a value for provision of basic sanitation services. However, we do provide an estimate for the added value of providing a public water supply over a private supply (above).

Financial support for customers

Input	Data	Unit	Definition	Source
A.	Number of household customers supported by customer payment schemes	no.	Number of household customers who receive financial support through one of Yorkshire Water's approved schemes each year. Performance Commitment figure reported for 'Direct support given to customers' APR Table 3.	APR
B.	Proportion of general population suffering from mental health issues	%	Proportion of general population suffering from mental health issues (neurotic disorders) and in debt (including mail order payments, road tax, electricity, TV licence, gas, water or DSS Social fund Loan)	Jenkins et al. (2008) 'Mental disorder in people with debt in the general population'
C.	Proportion of general population suffering from mental health issues in debt	%	Proportion of general population suffering from mental health issues (neurotic disorders) in debt (including mail order payments, road tax, electricity, TV licence, gas, water or DSS Social Fund Loan)	As above
D.	Monetary equivalent costs associated with depression and anxiety per individual	£	Monetary equivalent individual annual values (i.e. costs) associated with depression and anxiety, based on a willingness-to-accept principle	UK Council for Psychotherapy (2014) 'Valuing mental health: how a subjective wellbeing approach can show just how much it matters', inflated to

				relevant price year using CPIH
E.	Average weekly bill for Yorkshire Water customers	£/week	Mean average weekly combined water and sewerage bill for Yorkshire Water household customers for the reporting year	Internal data
F.	Average weekly household expenditure for Yorkshire	£/week	Average weekly household expenditure on goods and services in the Yorkshire region for the reporting year.	Office for National Statistics (2023)
Monetary flows	Calculations			
1	Number of customers supported suffering from mental health issues and in debt = A x B x C			
2	Cost of mental health issues related to debt for customers supported by schemes = 1 x D			
3	Contribution of water bills to customers' debt = E / F			
4	Value created through reduced debt-related mental health issues for YW customers supported by payment schemes = 2 x 3			

Public educational programmes

Input	Data	Unit	Definition	Source
A.	Number of participants in educational programmes	no.	The total number of individuals recorded as participating in educational programmes run by Yorkshire Water in the reporting year. Includes face-to-face and online learning. Excludes social media.	Internal data
B.	Value per educational visit	£	Value of an additional nature-based educational visit per individual as an "investment" in ecological knowledge	Defra ENCA workbook based on data from Mourato <i>et al.</i> (2010), inflated to relevant price year using CPIH
Calculations				
1	Value created through public educational programmes run by Yorkshire Water = A x B			

Appendix 1 – Independent limited assurance

Overview

DNV Business Assurance Services UK Limited (“DNV”) provided limited independent assurance for this year’s *Our Contribution to Yorkshire* publication over the following metrics:

- Spend on research and development (R&D) (£m)
- Percentage spend with local suppliers (%)
- Number of new Yorkshire Water apprentices (No.)
- Total colleague hours spent on training (Hours)

Reporting criteria for each metric are detailed below. DNV’s limited assurance report is published at the end of the main *Our Contribution to Yorkshire* publication, which can be found at www.yorkshirewater.com/capitals.

Reporting criteria

Spend on research and development (R&D)

*Spend on R&D = Innovation team R&D project spend
+ Annual contribution to UK Water Industry Research, where:*

- Innovation team R&D project spend is defined as projects led by colleagues within Yorkshire Water’s Innovation team which are assigned to an internal investment category code associated with R&D activity. Project spend comprises both opex and capex. It includes third-party costs (e.g. contracted and consultant costs) and the recharge of staff time from Innovation team colleagues and other colleagues across the wider business that have worked on projects (e.g. to provide subject matter expertise); and
- Spend is reported on an accruals basis.

Percentage spend with local suppliers

Percentage spend with local suppliers = $\frac{\text{Total spend with local suppliers}}{\text{Total spend with all suppliers}} \times 100$, where:

- Local suppliers are defined as those suppliers where the postcode on their address registered with Yorkshire Water lies within Yorkshire Water’s operational boundary (though this may include suppliers who have a

primary/head office that lies outside of the operational boundary) (Figure A1); and

- Spend is measured at the point in time when a payment is cleared, to align with when the benefit is received by the supplier.

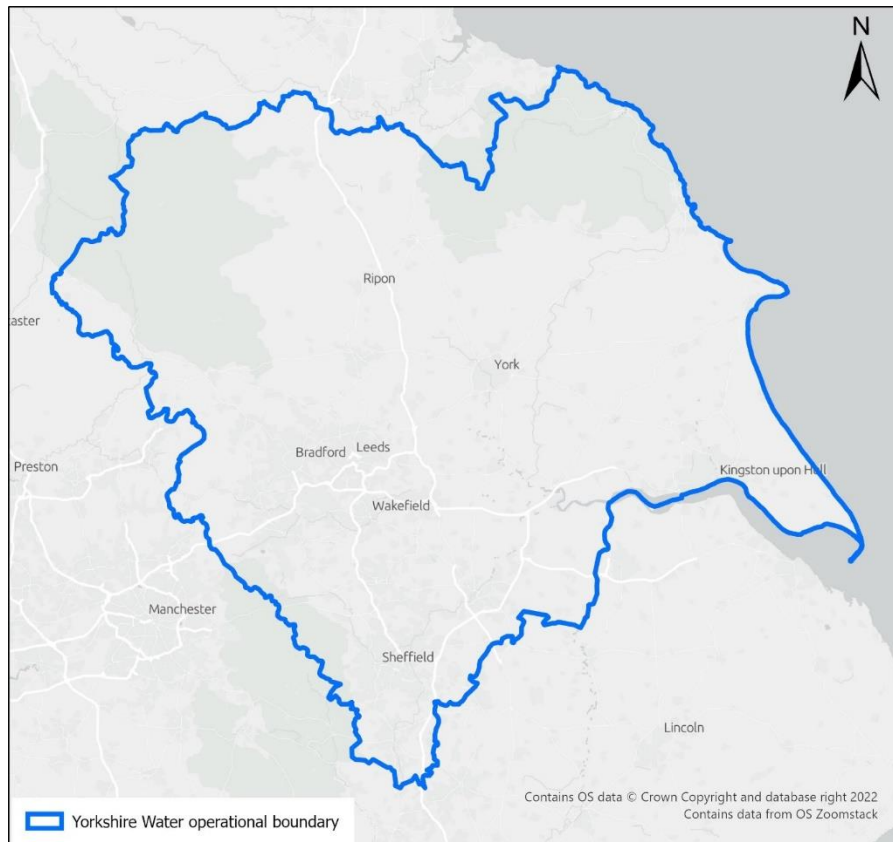


Figure A1: Yorkshire Water's operational boundary

Number of new Yorkshire Water apprentices

The total number of Yorkshire Water employees registered as apprentices on the UK government's Digital Apprenticeship Service who, within the reporting year ending 31 March:

- were employed by Yorkshire Water and began an apprenticeship funded by Yorkshire Water's Apprenticeship Levy; or
- began employment with Yorkshire Water and transferred an existing apprenticeship from their previous employer, which then continued to be funded by Yorkshire Water's Apprenticeship Levy.

This includes apprentices who left the business during the reporting year, and apprentices who began and subsequently ended their apprenticeship during the reporting year. We assume apprentices and apprenticeship providers advise Yorkshire Water when an apprenticeship ends unexpectedly because this is a compliance requirement of apprenticeship funding.

The Apprenticeship Levy is an amount paid at a rate of 0.5% of Yorkshire Water's annual pay bill. All sectors must pay the levy if they have an annual pay bill of over £3 million. Every employer who pays the levy can access their levy funds to spend on apprenticeship training. Further information on the Apprenticeship Levy is available at <https://www.gov.uk/guidance/pay-apprenticeship-levy>.

Total colleague hours spent on training

The total number of hours spent on training by Yorkshire Water employees during the reporting year ending 31 March where:

- Training is defined as completion of a course that is recognised on Yorkshire Water's Success Factors Learning portal and approved by Yorkshire Water's learning and development team;
- Hours are based on an estimated time to complete each training course, which is defined by subject matter experts familiar with the relevant course material and approved by Yorkshire Water's learning and development team when a course is added to the Success Factors Learning portal;
- Training records of completion are stored on Yorkshire Water's Success Factors Learning portal, which is an internal database; and
- Training records cover all individuals employed contractually by Yorkshire Water at the time of training, including individuals who subsequently left the business in the reporting year.

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