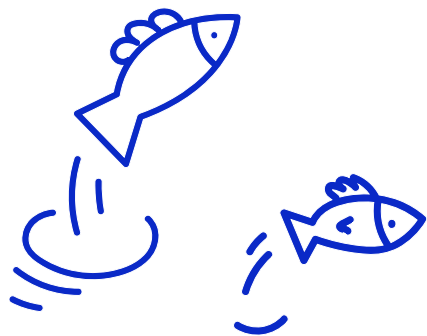
A worker in an orange safety jacket and dark pants is standing on a wooden bridge over a stream. He is holding a long-handled red bucket and pouring water into the stream. The background is a lush green landscape with trees and a house in the distance.

# Greenhouse Gas Emissions Annual Report

Affinity Water

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# Introduction

This report is the annual greenhouse gas (GHG) emissions inventory report for Affinity Water Limited. The purpose of this report is to provide an overview of the emissions that make up our carbon footprint over the financial year 2022/23.

This report summarises the data we submit as part of our regulatory reporting and has been assured by an independent third party.



## Our Net Zero Ambitions

In 2019 we joined other water companies in setting ourselves the goal of becoming Net Zero for our operational emissions by 2030, helping to play our part in reaching UK Net Zero by 2050.

We've developed our Net Zero plan that sets out how we'll achieve our ambitions.



# Affinity Water's Greenhouse Gas Emissions 2022-23

## Organisational Boundary

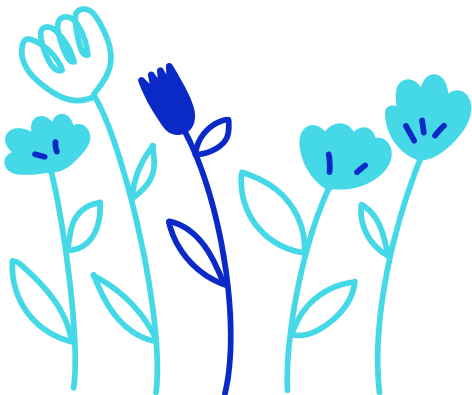
We've included emissions within the regulated activity of Affinity Water Limited.

## Reporting Period

This report covers emissions which have arisen during the period 1st April 2022 – 31st March 2023.

## Reporting Boundary

For 2022/23 we have reported emissions from the following sources within each scope. These are considered material to our company and the service we provide.



### Scope 1 - direct emissions

Fuel



Vehicles



Process and Fugitive Emissions



### Scope 2 - purchased electricity

Purchased electricity



### Scope 3 - indirect emissions

Purchased goods & services



Capital goods



Energy & fuel related



3rd party transportation



Waste



Employee commuting



Business travel



Leased assets



# How we estimate and report GHG Emissions

**Our carbon footprint is calculated by converting the main GHGs into a carbon dioxide equivalent (tCO<sub>2</sub>e). Emissions are categorised into scopes [based on the GHG Protocol] as follows:**

**Scope 1 emissions** [direct emissions] are those from activities we own or control, including those from our treatment processes, company vehicles, and burning of fossil fuels for heating.

**Scope 2 emissions** [indirect emissions] result from purchased heat and electricity.

**Scope 3 emissions** [indirect emissions] arise from activities we do not own or control, but which we can influence. These include the products and services we buy.

We also report on our emissions based on whether they're considered to be 'operational' resulting from our day-to-day activities or 'embedded' resulting from our wider activities. Embedded emissions arise indirectly from our supply chain, this includes from building new, or refurbishing assets and from other goods and services we buy.

We use a combination of methods to estimate our GHG emissions, following the principles of the 2015 GHG Protocol Corporate Accounting and Reporting Standard. Operational emissions have been estimated using the water industry Carbon Accounting Workbook (CAW). This is a tool used by water companies in the UK, which is updated annually to reflect the latest published UK emission factors. This tool uses the most commonly applied method for calculating emissions by applying an emission factor to activity data, such as fuel consumption. Where activity data is not available we use alternative data and methods to calculate emissions. This includes using spend based data or recognised benchmarks. Over time we aim to improve our emissions reporting by capturing and utilising greater amounts of activity data.

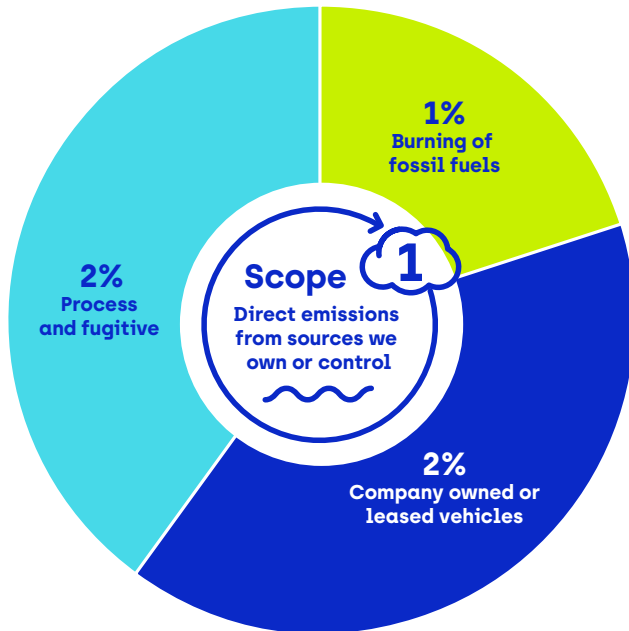


# Affinity Water's Carbon Footprint

For 2022/23, using a market based approach we estimate our full carbon footprint to be **91,870 tCO<sub>2</sub>e**. Following a location based approach our footprint is **135,493 tCO<sub>2</sub>e**. A breakdown of the emissions can be seen in Table 1.

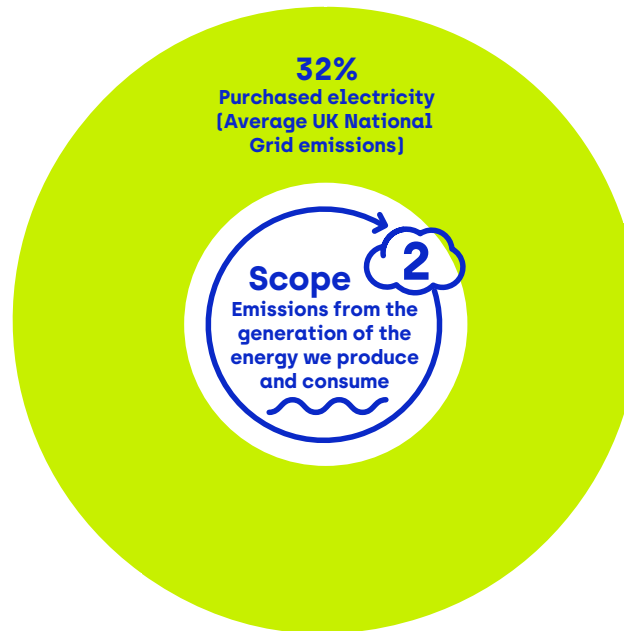
## Scope 1

Direct emissions  
**5,914 tCO<sub>2</sub>e**



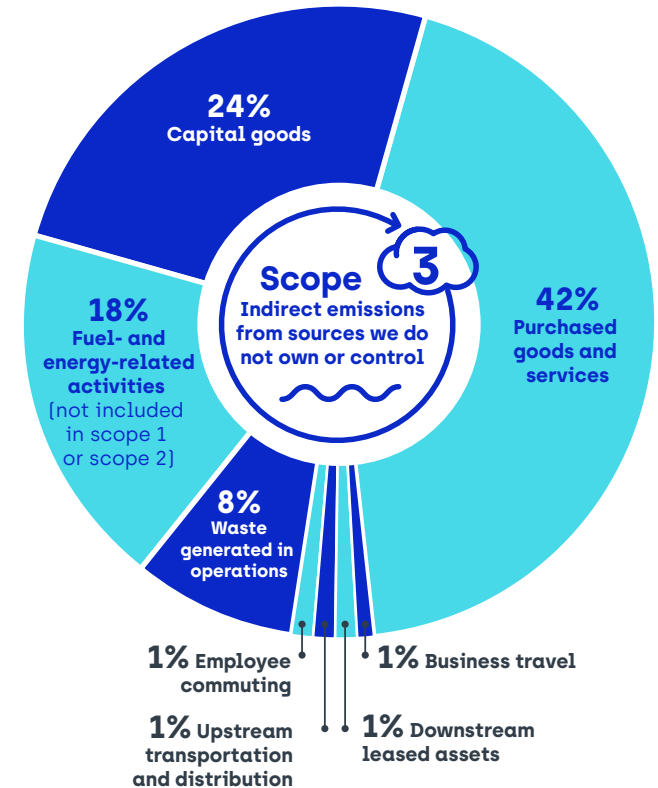
## Scope 2

Indirect emissions from purchased electricity  
**0 tCO<sub>2</sub>e** [Market Based]  
**43,623 tCO<sub>2</sub>e** [Location Based]



## Scope 3

Indirect emissions from value chain  
**85,956 tCO<sub>2</sub>e**



## Affinity Water Carbon Footprint

Table 1 - Affinity Water's Carbon Footprint for 2022/23

GHG emission source	2022/23 Gross (tCO <sub>2</sub> e)
<b>Scope 1</b>	
Fuel combustion	1,578
Process and fugitive emissions	2,189
Vehicle fleet	2,147
<b>Scope 2</b>	
Purchased electricity (location based)	43,623
Purchased electricity (market based)	0
<b>Scope 3</b>	
Category 1: Purchased goods and services	38,407
Category 2: Capital goods	22,173
Category 3: Fuel- and energy-related activities (not included in scope 1 or scope 2)	16,212
Category 4: Upstream transportation and distribution	238
Category 5: Waste generated in operations	7,425
Category 6: Business travel	228
Category 7: Employee commuting	1,064
Category 13: Downstream leased Assets	209
<b>Total gross emissions (location based)</b>	<b>91,870</b>
<b>Total net emissions (market based)</b>	<b>135,493</b>

### Market Based and Location Based Reporting

We report our Scope 2 emissions following two different account methods.

A **location based** method reflects the average emissions intensity of the electricity grid on which energy consumption occurs (using mostly grid-average emission factor data). A **market based** method reflects emissions from electricity that companies have purposefully chosen. For Affinity Water this means market based reporting reflects that our electricity is provided by

renewable sources, using a Renewable Energy Guarantee of Origin (REGO) backed green tariff.

The REGO scheme provides transparency about the proportion of electricity that suppliers source from renewable electricity. The scheme provides certificates which demonstrate electricity has been generated from renewable sources.

For more information on the energy we use please see our [2022/23 Annual Report](#).



# Operational Emissions

**Table 2 outlines our operational emissions as defined by Ofwat. This definition encompasses more categories of emissions that our WaterUK Net Zero by 2030 definition of operational emissions.**

We also calculate an operational emissions intensity figure based on the amount of water we supply. This is reported as 'kg of CO<sub>2</sub>e per mega litre'.

Table 2 - Operational Emissions for 2022/23

Description	2022/23		2021/22	
	Location Based - Gross [tCO <sub>2</sub> e]	Market Based - Gross [tCO <sub>2</sub> e]	Location Based - Gross [tCO <sub>2</sub> e]	Market Based - Gross [tCO <sub>2</sub> e]
<b>Scope 1 emissions</b>				
Direct emissions from burning of fossil fuels	1,578	1,578	1,870	1,870
Process and fugitive emissions	2,189	2,189	2,417	2,417
Transport: Company owned or leased vehicles	2,147	2,147	1,996	1,996
<b>Total scope 1 emissions</b>	<b>5,914</b>	<b>5,914</b>	<b>6,283</b>	<b>6,283</b>
<b>Scope 2 emissions</b>				
Purchased electricity	43,623	0	46,735	0
<b>Total scope 2 emissions</b>	<b>43,623</b>	<b>0</b>	<b>46,735</b>	<b>0</b>
<b>Total scope 1 and 2 emissions</b>	<b>49,537</b>	<b>5,913</b>	<b>53,018</b>	<b>6,283</b>
<b>Scope 3 emissions</b>				
Business travel on public transport and private vehicles used for company business	204	204	109	109
Outsourced activities (if not included in Scope 1 or 2) Energy and other1	156	156	147	147
Purchased electricity – Transmission and Distribution	3,991	3,991	4,136	4,136
Use of chemicals	10,858	10,858	11,300	11,300
Disposal and treatment of waste	2,409	2,409	2,433	2,433
<b>Total Scope 3 emissions</b>	<b>17,618</b>	<b>17,618</b>	<b>18,125</b>	<b>18,125</b>
<b>Total Gross Emissions</b>	<b>67,155</b>	<b>23,532</b>	<b>71,143</b>	<b>24,408</b>
<b>Annual operational GHG intensity ratio values</b>	<b>[kgCO<sub>2</sub>e/Ml]</b>	<b>[kgCO<sub>2</sub>e/Ml]</b>	<b>[kgCO<sub>2</sub>e/Ml]</b>	<b>[kgCO<sub>2</sub>e/Ml]</b>
Operational GHG emissions per Ml of treated water	195	69	207	71



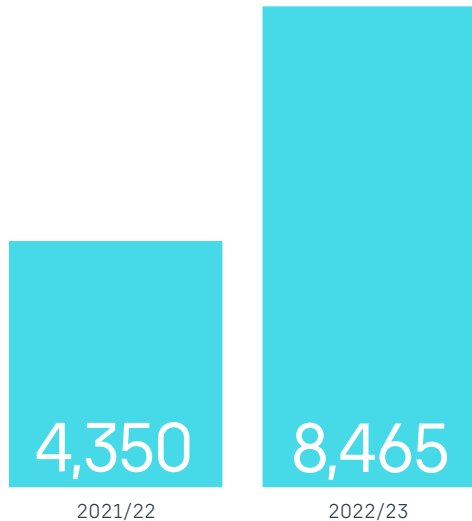


# Capital Programme

In 2021/22 we began reporting the embedded emissions associated with the delivery of our capital programme. We estimate the emissions associated with our capital programme using a bespoke tool which incorporates the emissions associated with raw material extraction, product manufacturing, transportation to site and construction activities. This is often referred to as 'cradle-to-built asset' emissions.

For 2022/23 we extended the scope of our reporting to cover more projects than in 2021/22, resulting in an increase in reported emissions. As we progress and improve our reporting of capital programme emissions, we'll be able to develop insight into how carbon intensive our construction activities are.

Capital Project emissions [tCO<sub>2</sub>e]



# Water UK Net Zero 2030 commitment

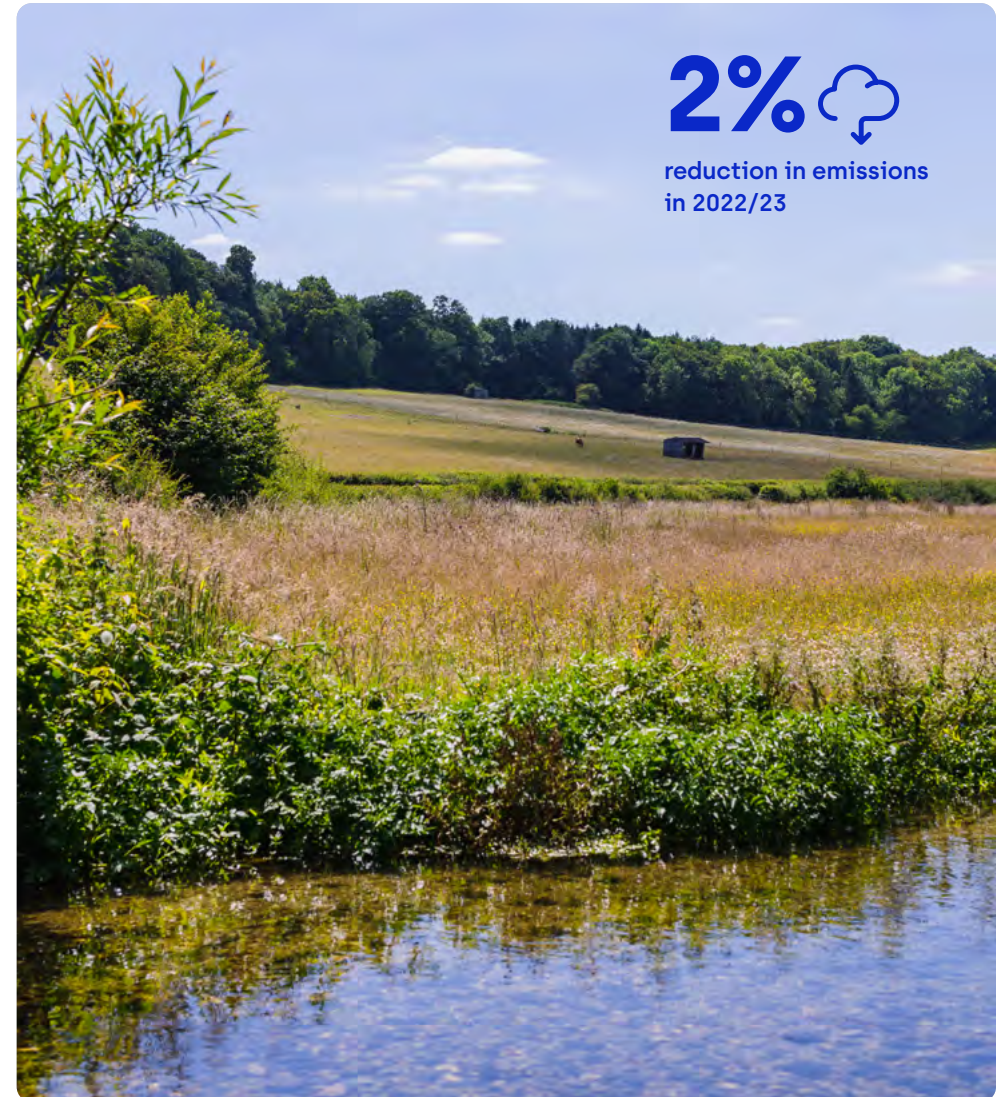
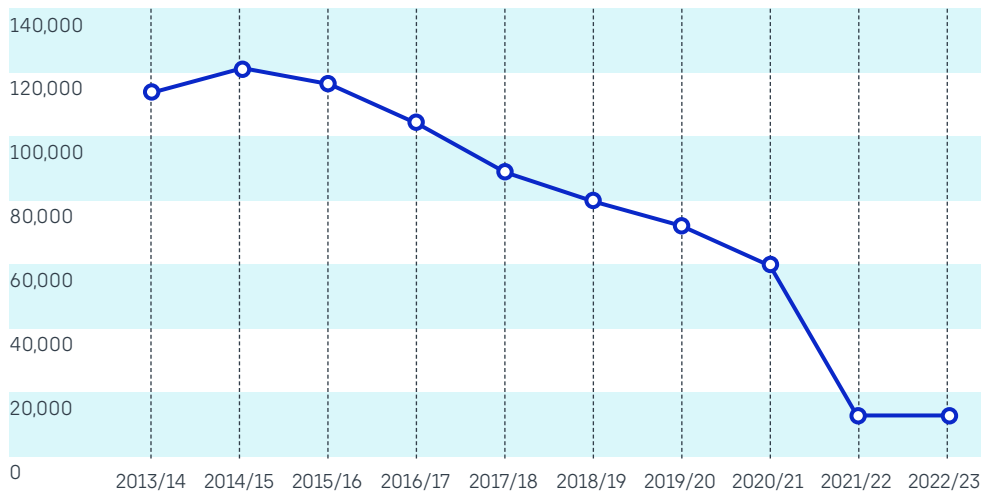
**In 2019 we joined all UK water companies in pledging to reduce our operational emissions (as defined at the time) to Net Zero by 2030. The emissions included within this target are Scope 1, Scope 2 and Scope 3 where they relate to business travel, outsourced services related to IT & administration and electricity transmission & distribution.**

Our emissions relevant to our Net Zero target continue to reduce. In 2022/23 we saw a small reduction in emissions of 2% compared to 2021/22. Reductions were associated with reduced diesel and natural gas use and falling transmission and distribution emissions.

For 2023/24 we plan to stay on course to reach our Net Zero 2030 target through further reductions in the use of fossil fuels, a transition to electric vehicles and by working with our supply chain.

**Affinity Water - Water UK Net Zero 2030 Emissions (Market Based)**

Net Emissions tCO<sub>2</sub>e



# Emissions Reductions during 2022/23



## Energy Efficiency

During 2022/23, we've implemented 16 energy saving schemes, with a further 33 in development, including the replacement of borehole and booster pumps. Additionally, we've continued work on reducing pressure losses on sites through the improvement of our UV treatment processes. A total of 1,964,000 kWh were saved as a result of projects delivered in 22/23, the equivalent of approximately 380 tCO<sub>2</sub>e.

Although we consumed more electricity in 22/23 than in 21/22 as a result of the summer heatwave, our overall efficiency was better [630kWh/ML in 22/23 vs 631kWh/ML in 21/22].

This year we've also started efficiency work on our buildings and offices, with new initiatives to reduce heating and lighting through process and behavioural change.

We have developed a mature programme of energy saving opportunities with over 85 schemes in various stages of implementation. Using this programme, we have set ourselves a £500k energy savings target for 2023/24. The projects planned for delivery in 2023/24 are expected to result in a per annum saving of 2,591,000 kWh in the following years.



## Renewables

Our solar installation at Chertsey and Walton performed well during 2022/23, generating 1,051,721 kWh and 589,004 kWh respectively. The electricity generated from solar equated to 0.72% of our total electricity usage during 22/23. Solar generation in 22/23 reduced our potential carbon emissions by 317 tCO<sub>2</sub>e.

During 2022/23 we explored delivering solar at four further sites at with two being taken forward to delivery. Studies for futures sites requiring planning permissions, and those requiring reservoir feasibility studies were also commenced.



## Electric Vehicles

During 2022/23 we began our transition to an EV fleet. We established a project team who oversaw the development of an EV transition plan for the business with the support of Mitie. This plan enabled us to identify the infrastructure, software and funding requirements which will enable transition.

We ordered our first four electric vans and began installing charging infrastructure at our Stevenage and Staines locations. 2022/23 also saw us launch our salary sacrifice schemes for EV purchase by our employees.

