

Greenhouse gas emissions report

2021

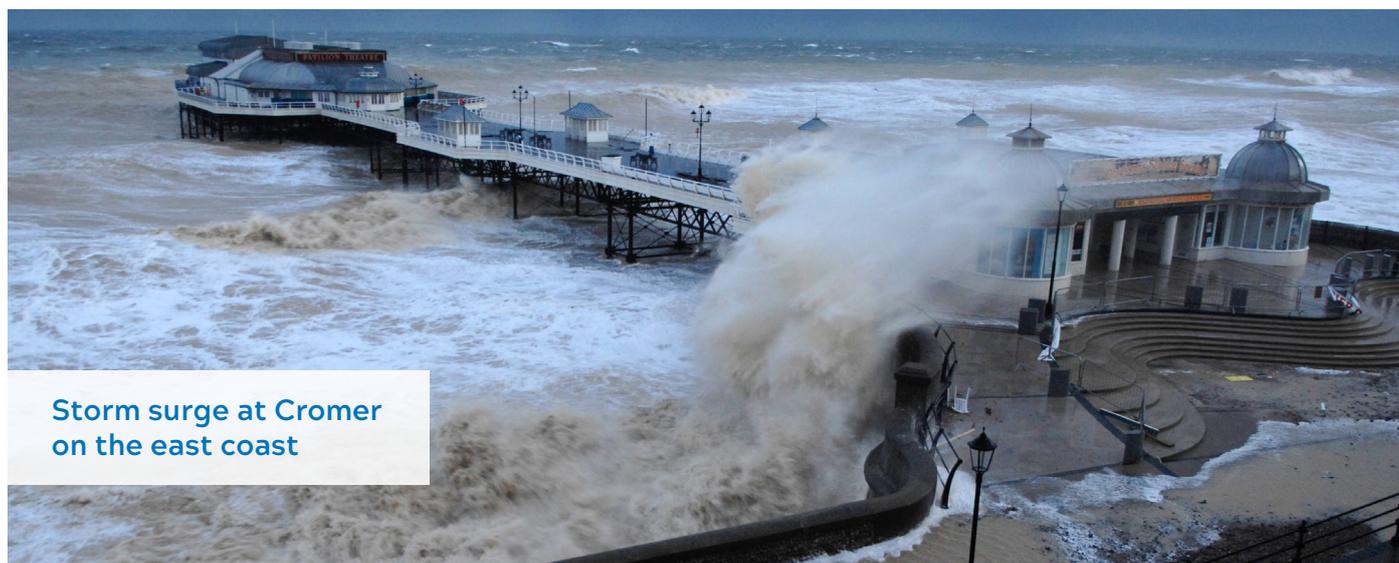
Anglian Water Services Limited



2020 saw the completion of the solar array at Grafham Water - the largest array on Anglian Water land. With over 42,000 panels and a capacity of 11.6 MWp, the array will supply around a quarter of the annual power needed at the adjacent Grafham Water Treatment Works - equivalent to powering around 3,000 homes. The Grafham solar array is part of a programme of works aiming to deliver 45 per cent of our energy needs from renewable generation by 2025.



Our unique environment



Storm surge at Cromer on the east coast

Our region, low-lying and with some of the lowest rainfall of any area in the country, is particularly vulnerable to the impacts of more volatile weather: increasing temperatures, the potential reduction in summer rainfall, lower available water resources, increased flood risk and rising sea levels.

The ecological sensitivity of many wetland sites in the east of England adds a further challenge. The impact of hotter, drier summers, combined with a growing population, will increase the demand for water. Coastal and low-lying assets face an increased risk of flooding.

Our latest [Climate Change Adaptation report](#), published in December 2020, details the risks we face and describes how we are embedding adaptation across our business.

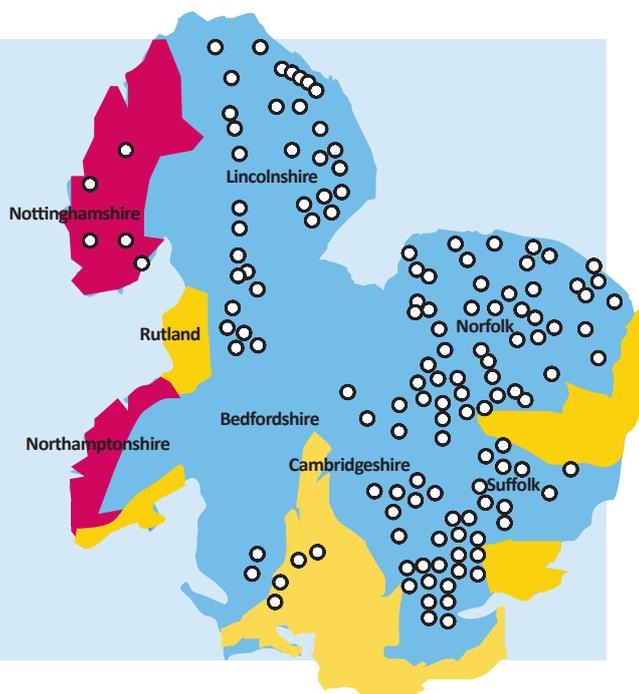
In mitigating our impacts on climate change we are improving our energy efficiency, increasing our understanding of our carbon footprint, investing in renewable energy generation and promoting water efficiency. Over the long term, we are also designing and commissioning more sustainable treatment and delivery systems.

Supply and services across our region

The map shows our sources of supply with colours used to indicate the services provided by Anglian Water across the region.

- Water services only
- Water recycling services only
- Water and water recycling services
- Groundwater supply

Hartlepool



Our approach

We have followed the Department for Environment, Food and Rural Affairs (Defra) guidance (last updated 29 March 2019) on how to measure and report greenhouse gas emissions.

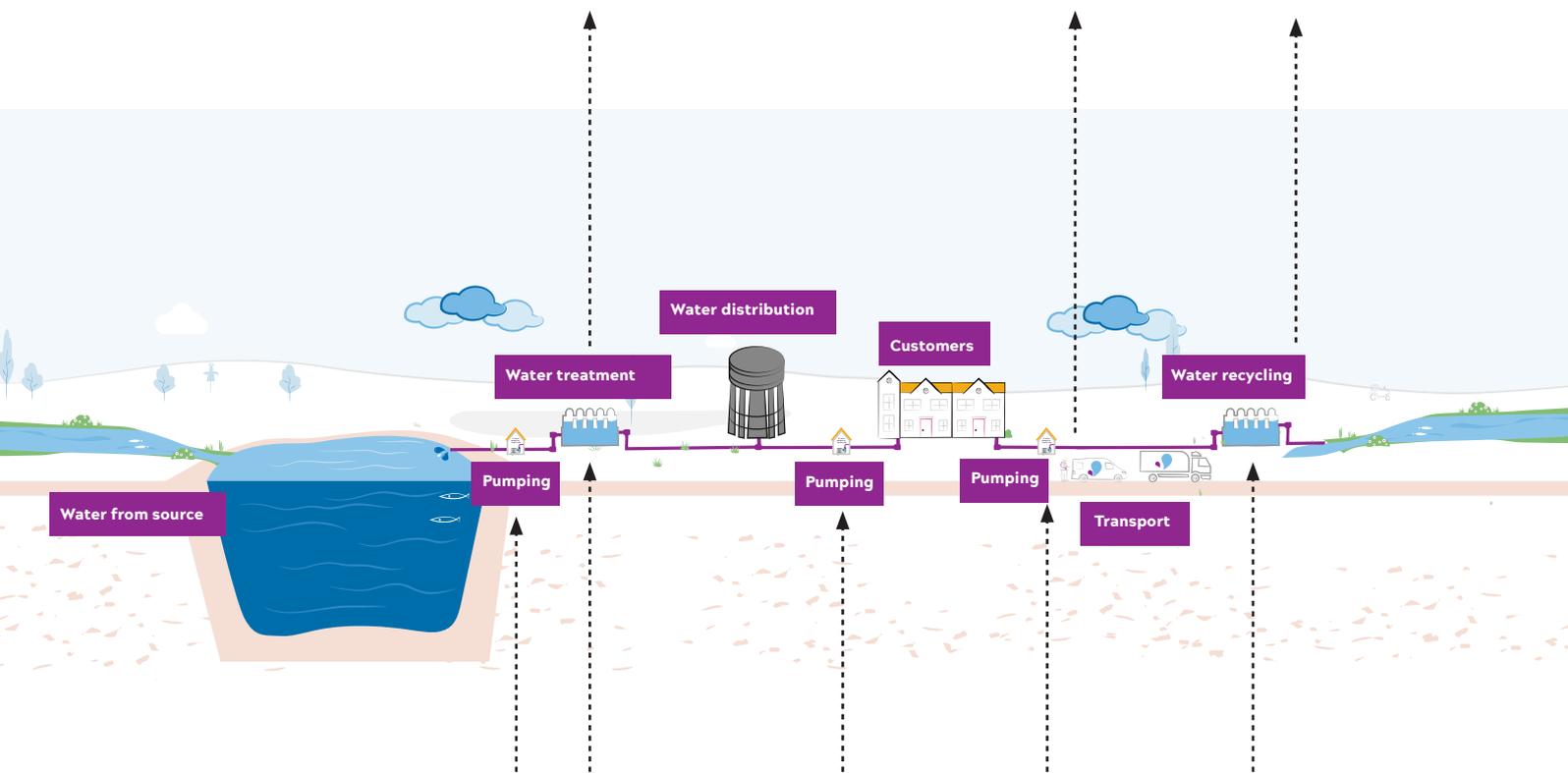
SCOPE 1

DIRECT emissions - arise on our sites and from our transport

Emissions from heating fuels for our offices and treatment processes - natural gas, fuel oil, kerosene, LPG

Emissions from owned transport - diesel, petrol, LPG

Release of methane and nitrous oxide from water recycling treatment processes



SCOPE 2

Energy INDIRECT emissions - released from non-Anglian Water sites



SCOPE 3

Other INDIRECT emissions - released from non-Anglian Water sites and not classed as Scope 2

Transmissions and distribution of grid electricity

Business travel

Outsourced operations - e.g. tankering

Chemicals

Bought in contracts and services (supply chain)

Customers' energy use in heating water

Capital carbon in the construction materials and activities

Organic waste to landfill releases methane and nitrous oxide

Release of methane and nitrous oxide from biosolids on agricultural land



Our mitigation activities have been brought together under ‘Drop CO2’. Drop CO2, Drop Cost forms part of our long-term visionary campaign and business strategy ‘Love Every Drop’. This communication and behavioural change campaign brings all of our stakeholders and customers together to put water at the heart of a new way of sustainable living.



1	2	3	4	5	6	7
Energy initiative	Sustainability in design	Renewables	Supplier engagement	Transport initiative	Process emissions	Water efficiency
The primary focus is the delivery of energy efficiency projects.	Reducing the carbon in our totex investment programme.	Development of our own renewable power.	Reducing carbon in the supply chain.	Reducing transport emissions.	Measuring, managing and reducing process emissions.	Helping our customers to deliver water and carbon efficiencies.

Organisational boundary

We have included emissions within the regulated activity of Anglian Water, where we have operational control.

Reporting period

Our base year for our medium-term location-based reporting is 1 April 2019 to 31 March 2020 (2020). The base year for net zero is 1 April 2018 to 31 March 2019.

Intensity measurement

We have chosen ‘kg of CO2e per mega litre’ for water supply and recycled water as these are common business metrics for our industry sector. Our intensity measurement for water and water recycling has reduced against the baseline with more efficient pumping and lower greenhouse gas emissions in grid electricity we use.

Data assurance

The carbon data has been externally verified as part of our regulatory reporting requirements. We are certified with Carbon Reduce Scheme (formerly CEMARS) with Platinum Status for over 10 years’ carbon reduction against this standard, having measured greenhouse gas emissions in compliance with ISO 14060-1:2006.

Carbon offsets

In 2020/21 no offsets have been purchased.

Our performance

Operational scopes

We have measured our Scope 1, Scope 2 and significant Scope 3 emissions for business travel and outsourced transport.

	tCO2e - Location based		tCO2e - Market based	
	2021	Baseline (2020)	2021	Baseline for net zero (2018/19)
Scope 1 - Total	117,010	117,843	117,010	123,302
Scope 2 - Total	151,824	163,485	245,505	209,818
Scope 3 - Total significant	26,996	29,675	27,034	32,676
Total annual gross emissions	295,830	311,003	389,549	365,796
Exported renewables	-6,776	-8,310	-10,100	-9,444
Green tariff	0	0	0	-
Total annual net emissions	289,054	302,693	379,449	356,351
Intensity ratio - water treated	230.97	237.97		
Intensity ratio - recycled water	433.46	467.68		
Intensity ratio - recycled water	224.13	237.98		

	2021 - location based	2021 - market based	Exclusions
Scope 1	13,097	13,097	none
Process & fugitive emissions	83,009	83,009	none
Owned transport	20,903	20,903	none
Scope 1 - Total	117,010	117,010	
Scope 2			
Purchased electricity	151,824	245,501	none
Scope 2 - Total	151,824	245,501	
Scope 3			
Business travel	140	140	We have not included commuting, capital carbon and emissions from use of water in customers' homes
Outsourced transport	13,800	13,800	
Purchased electricity	13,057	20,928	
Scope 3 - Total significant	26,996	34,867	

295,830 tCO2e

measurement of greenhouse gas emissions in compliance with ISO 14064

134 GWh

134 GWh of renewable generation: five times what we generated in 2010

Location-based reporting

Gross annual carbon emissions have decreased by 15,173 tCO2e between 2020 and 2021. There are a number of influencing factors. The grid has decarbonised by 9.6 per cent over the year, with renewables providing an increasing amount of the UK energy mix. We have also seen reductions in emissions from transport, most notably from business travel. Business travel has decreased by 833 tCO2e; as a result of the impact of the Covid-19 pandemic and the Government's 'stay at home' messaging.

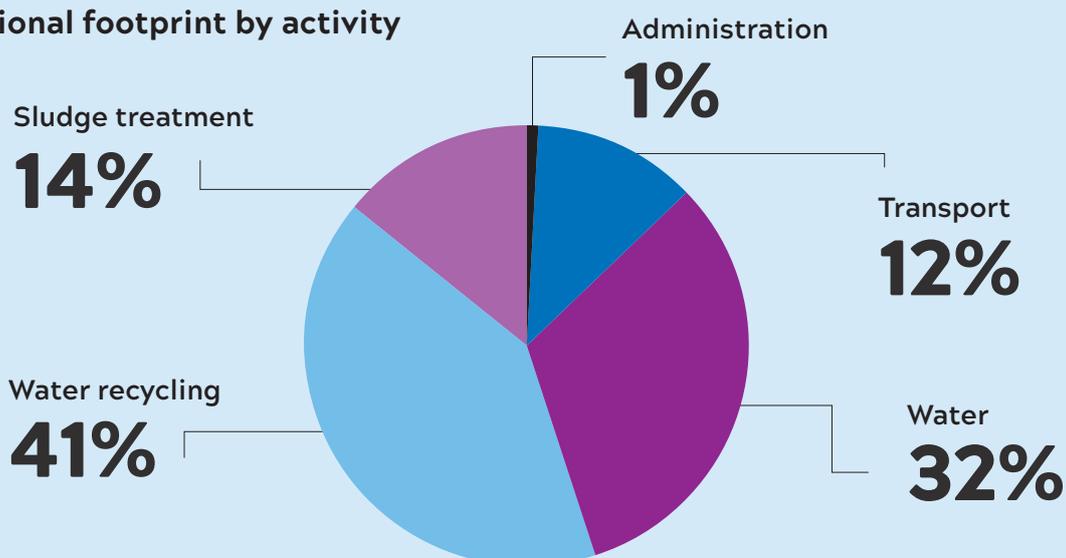
During 2020/21 as part of our carbon mitigation strategy we saved 17.57GWh of electricity (mitigating 4,448 tCO2e) and generated 134 GWh of renewable power from biogas CHP, wind and solar.

Capital carbon emissions have reduced 61.4 per cent against a 2010 baseline. This is due to the success of our design engineers and capital delivery partners in responding to our challenge to deliver more sustainable assets, reduce carbon, reduce the use of finite raw materials and reduce cost.

Market-based reporting

As part of the Public Interest Commitment in 2019 the English water companies set an ambition to achieve net zero carbon by 2030. The sector-wide route map published in November 2020 set out that this would be measured through market-based reporting methodology against a 2018/19 baseline. Market-based reporting looks at emissions from specific energy suppliers rather than using UK averages. In 2020/21 no green electricity was purchased from our electricity supplier; however, the purchase of green electricity forms part of our net zero 2030 strategy, which will have a significant impact on our market-based reporting.

Operational footprint by activity



We recognise that a significant proportion of our carbon emissions (99 per cent) is as a result of the provision of water and water recycling services to our customers. Only 1 per cent of emissions are attributed to administration.

Through the period 2020/21, we have mitigated against pressures on our business with potential increasing greenhouse gas emissions resulting from serving a growing population and meeting tighter quality standards. In this five-year period, we plan to invest over £3 billion in maintaining and improving our infrastructure. This investment will lead to a potential increase in capital carbon of around 1 MtCO₂e from the materials we use to build and maintain assets. These new assets could also add around 40 tCO₂e to our operational carbon emissions by 2025. With a continued focus on energy management, innovation in design and optimising renewable generation assets, we have again set a challenging objective of mitigating against future potential increases in operational carbon emissions and reducing capital carbon in assets we design and build.

Medium-term target

Our 2015-2020 targets were to reduce capital carbon by 60% from a 2010 baseline and to reduce gross operational carbon emissions by 7 per cent from a 2015 baseline. We met and achieved beyond both targets, delivering a 34 per cent reduction in operational emissions and a 61 per cent reduction in capital carbon.

By 2025 we are committed to reducing our emission of capital carbon by 65 per cent from a 2010 baseline and gross operational carbon 10 per cent from a 2020 baseline.

Long-term target

As part of our Public Interest Commitment in 2019, along with our fellow water companies in England, we set the ambition to be net zero carbon as a sector by 2030.

In this reporting period, responsibility at Board level for achieving these carbon targets has rested with Jason Tucker, Director of Strategic Delivery & Commercial Assurance, and Paul Gibbs, Director of Water Recycling.



Contacts

For further information on greenhouse gas emissions within Anglian Water, please contact our Head of Carbon Neutrality, David Riley:

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Company information

Anglian Water Services Limited is a private limited company incorporated in England with company number 2366656.

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