



anglianwater

# GREENHOUSE GAS EMISSIONS ANNUAL REPORT 2015

Cambridge Water Recycling Centre extension is a great example of meeting the needs of a growing population in a sustainable way. Design engineers across the supply chain focused on exceeding the challenge of halving the embodied carbon against a 2010 baseline. Through collaboration, rigorous challenge on the need of assets in the baseline design, use of lower carbon materials, off-site build and reduction in waste, the team delivered a 64% reduction in carbon whilst also seeing a 24% reduction against cost.



# OUR UNIQUE ENVIRONMENT



## Storm surge at Cromer on the east coast

Our region is particularly vulnerable to the impacts of more volatile weather: temperature rise, the potential reduction in summer rainfall, lower available water resources, increased flood risk and rising sea levels.

Our region is particularly vulnerable to the impacts of a changing climate: temperature rise, 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.

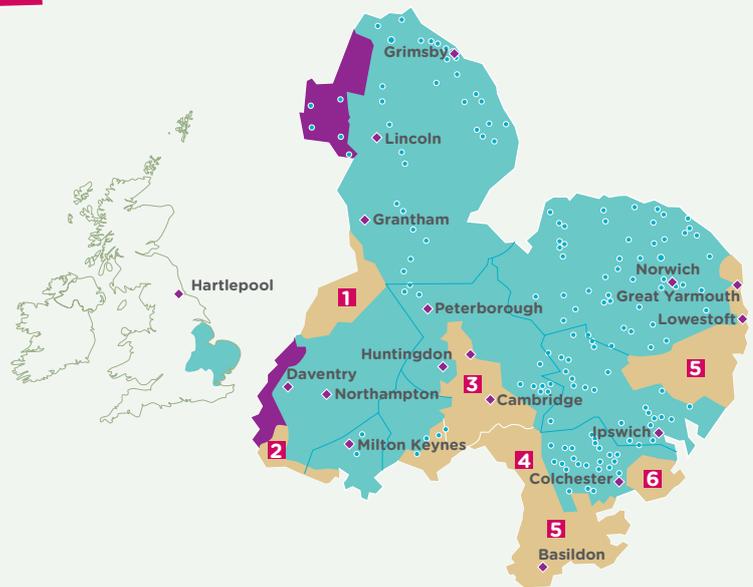
These challenges are a priority, and current action to adapt our operations includes improved flood protection for our sites securing supplies to 800,000 customers and water network investment to reduce customers reliant on a single supply.

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

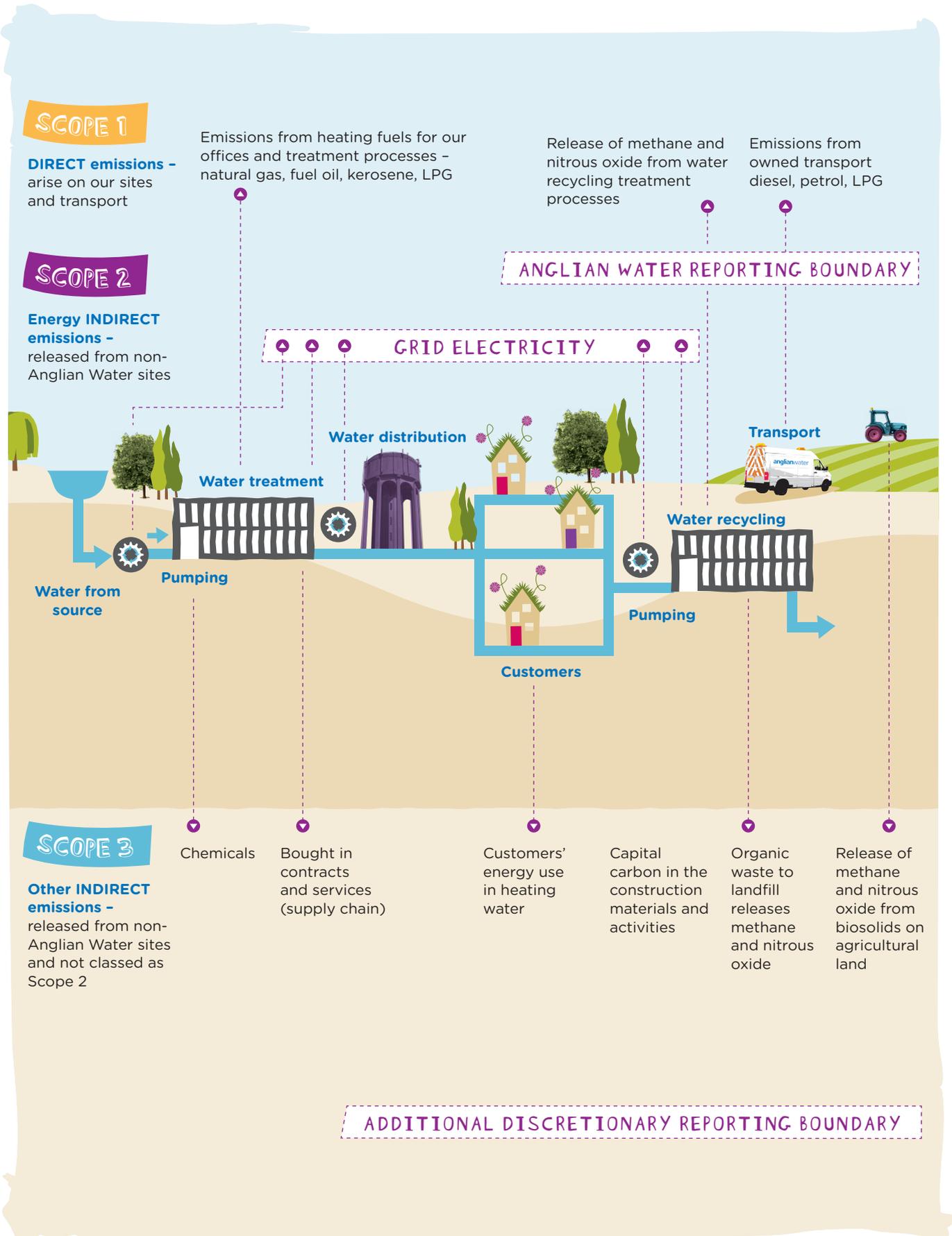
The map shows our sources of supply and the services we and other water companies provide.

- 1 Severn Trent Water
- 2 Thames Water
- 3 Cambridge Water
- 4 Affinity Water
- 5 Essex and Suffolk Water
- 6 Affinity Water
- Water services only
- Water recycling services only
- Water and water recycling services
- Groundwater supply



# OUR APPROACH

We have followed the Defra guidance 2009 and 2013 on how to measure and report greenhouse gas emissions.



Our mitigation activities have been brought together under 'Drop CO<sub>2</sub>'. Drop CO<sub>2</sub> forms part of our long-term visionary campaign and business strategy 'Love Every Drop'. This communication and behavioural change campaign brings all our stakeholders and customers together to put water at the heart of a new way of sustainable living.



Drop CO<sub>2</sub> drives reductions in carbon emissions and power costs through the above routes.

## Organisational boundary

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

## Reporting period

Our base year is 1 April 2009 – 31 March 2010, which we set using a fixed-base year approach.

## Intensity measurement

We have chosen 'kg of CO<sub>2</sub>e per mega litre' for water supply and water recycling treated as these are common business metrics for our industry sector.

Our intensity measurement for water has reduced against the baseline with more efficient pumping and lower GHG emissions in grid electricity we use.

Our intensity measurement for water recycling (flow to full treatment) has remained stable over the previous year. A comparison to the baseline year cannot be made as this metric was not measured in 2009-10.

## Data assurance

The carbon data has been externally verified as part of our regulatory reporting requirements. Since 2010, we have met the requirements of the CEMARS (Certified Emissions Measurement and Reduction Scheme), having measured greenhouse gas emissions in compliance with ISO 14064-1:2006.

## Carbon offsets

At present, carbon offsets do not form part of our carbon mitigation strategy.

## Green tariffs

The 'green tariff' electricity we have purchased complies with guidance from Ofgem and HM Treasury, however it does not conform to the latest Defra guidance.

# PERFORMANCE

## Operational scopes

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

### Greenhouse gas emissions data for period 1 April 2009 to 31 March 2015

	Tonnes of CO <sub>2</sub> e		
	2015	2014	Baseline
Scope 1	97,627	114,572	115,035
Scope 2	315,555	297,265	340,562
Scope 3	42,153	30,633	30,333
<b>Total annual gross emissions</b>	<b>455,335</b>	<b>442,470</b>	<b>485,930</b>
Exported renewables	8,501	3,720	623
Green tariff	0	0	0
<b>Total annual net emissions</b>	<b>446,834</b>	<b>438,750</b>	<b>485,307</b>
Kg CO <sub>2</sub> e per Ml water treated	422	391	438
Kg CO <sub>2</sub> e per Ml recycled water	694	712	779
Kg CO <sub>2</sub> e per Ml recycled water, flow to full treatment	372	355	n/a

\*Previous reported values have been re-stated in line with Defra guidance (June 2013)

**455,335**  
**TONNES** (of CO<sub>2</sub>e)

measurement of greenhouse gas emissions in compliance with ISO 14064.

**100 GWh**

of renewable generation equating to a 361% increase compared to 2010.

	Tonnes of CO <sub>2</sub> e	Specific exclusions
Scope 1		
Gas/fuel oil consumption	17,844	None
Process and fugitive emissions	58,777	None
Owned transport	21,006	None
<b>Total Scope 1</b>	<b>97,627</b>	<b>None</b>
Scope 2		
Purchased electricity	315,555	
<b>Total Scope 2</b>	<b>315,555</b>	
Significant Scope 3		
Business travel	557	None
Outsourced transport	14,002	None
Purchased electricity (transmission and distribution)	27,594	We have not included commuting, capital (embodied) carbon and emissions from use of water in customers' homes.
<b>Total significant Scope 3</b>	<b>42,153</b>	

## Change in emissions

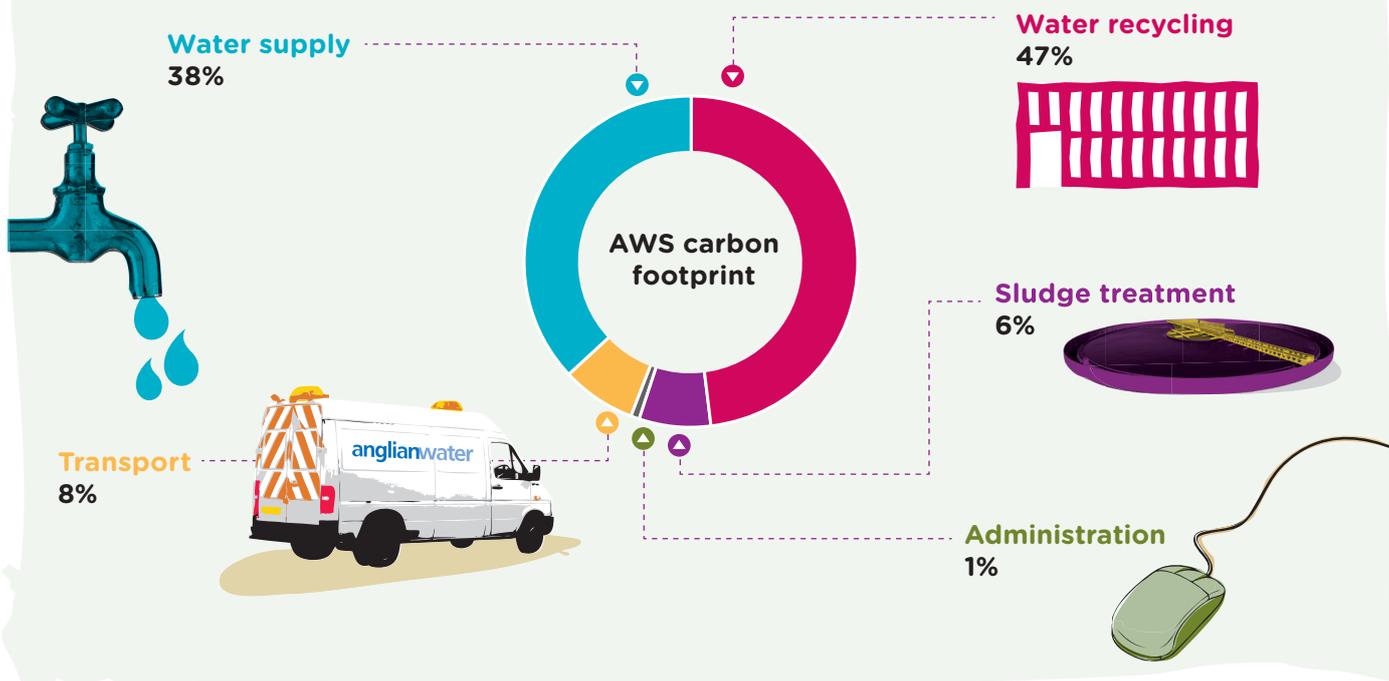
Our gross annual carbon emissions have decreased by 30,595 t/CO<sub>2</sub>e between 2010 and 2015. The main influencing factors include an 8% reduction in the consumption of grid electricity, a reduction of 83% in the use of natural gas and significant increase in renewable energy generation.

During 2014/15 as part of our carbon mitigation strategy we saved 10.48 GWh of electricity (5,633 t/CO<sub>2</sub>e) and generated 100 GWh of renewable power from biogas CHP and wind.

Capital (embodied) carbon emissions have reduced by 54% against our 2010 baseline. This

is due to the success of our design engineers and capital delivery partners in responding to our challenge in delivering more sustainable assets, reducing carbon, the use of finite raw materials and cost.

## Operational footprint by activity



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

## Targets

Through the period 2015–2020, we are mitigating against pressures on our business with potential increasing GHG emissions through serving a growing population and meeting tighter quality standards. By the end of this five year period, we will have invested over £2 billion in maintaining and improving our infrastructure. This investment will result in a forecast 360 kt/CO<sub>2</sub>e of capital carbon in the materials we use to build and replace assets. These new assets will also add an additional 39 kt/CO<sub>2</sub>e of annual operational carbon emissions in 2020.

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

Reduce capital carbon emissions by 60% by 2020 from a 2010 baseline.  
Reduce gross operational carbon emissions by 7% in real terms by 2020 from a 2015 baseline.

### Long-term target

Our long-term aspiration is to reduce our total annual GHG emissions by 50% from a 2010 baseline by 2035. This assumes successful implementation of the Government's low carbon transition plan (2009).

Responsibility for achieving these carbon targets lies at Board level with Chris Newsome, Asset Management Director and Paul Gibbs, Director of Water Recycling Services.

## Contacts

For further information on GHG emissions within Anglian Water, please contact our carbon manager David Riley:

### Email us

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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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