



SEVERN

TRENT

WATER

# Responding to Climate Change



## Climate Change and Energy

The Climate Change team is responsible for the company's strategies of mitigating greenhouse gas emissions and adapting to the effects of climate change.

Responding to climate change is a priority for us. We aim to minimise the effects of our operations on climate change and make sure we can cope with the impacts of climate change on our water and waste water services. By reducing carbon emissions, we can reduce costs and by adapting to climate change now, we can protect our services to customers.

Climate change presents us with two key challenges:

**Mitigation:** Reducing our carbon footprint to help reduce climate change. This means improving efficiency and generating renewable energy.

**Adaptation:** Taking action so that we can cope with future weather. This means increasing resilience and flexibility to protect our service.

### Mitigation – reducing greenhouse gas emissions

It's widely accepted that greenhouse gas emissions contribute to climate change and need to be reduced. The government expects every organisation to play their part, so as a large infrastructure company, we're responsible for a large amount of emissions.

Electricity consumption accounts for around 70% of the day to day greenhouse gas emissions across Severn Trent Water sites. This means energy management is the most important thing we can do to reduce our 'carbon footprint'. The other 30% of emissions are caused by sewage treatment processes, fuel for transport, and fuel use for heating and backup generation. Improving efficiency in all these areas has significant environmental benefits.

As well as operational emissions, there is also 'embedded' carbon which results from construction activities, such as building a treatment works or laying pipes. In addition, around 5% of UK's total greenhouse gas emissions come from people's use of water (primarily heating). We can play a part in reducing emissions by improving design standards, delivering construction projects more efficiently and encouraging customers to use water efficiently.

#### Action to reduce emissions

The main actions we're taking to reduce operational greenhouse gas emissions are:

- Increasing the energy efficiency of our operations and sites
- Generating more energy from renewable sources
- Minimising fuel use on transport
- Educating customers about the links between water-use and carbon emissions

#### Renewable energy sources

We run a range of schemes to help reduce our reliance on fossil fuels and reduce the company's carbon footprint.

#### Sewage gas combined heat and power (CHP)

Many sewage treatment sites have engines which produce power from the digestion process of human waste.

#### Energy from crops

Growing and harvesting energy crops, combined with digestion and gas generation, has been introduced by using crops which have been grown on land where digested sludge has been spread.

#### Hydro

Severn Trent Water currently has six hydro turbines installed on four sites, producing around 1.7 MW, which is 3% of its self generated electricity from water. Further opportunities to harness hydro power from reservoirs, networks and rivers are being investigated.

#### Large wind turbines

Wind turbines have been constructed at some Severn Trent Water sites. Each turbine measures up to 130 metres to blade tip and provides electricity equivalent to supplying around 1,500 homes annually.

### Adaptation – changing practises to respond to changes in weather

Changing weather patterns have an impact on our infrastructure and resources. Some of the issues we face are:

- An increase in the demand for clean water at peak periods (warm weather)
- An increase in the amount of waste water that needs to be treated (storms)
- A decrease in the amount of water that's available to treat and supply to customers (drought)
- An increase in the quality that waste water needs to be treated to in order that it is safely returned to the natural water cycle (drought)

#### Wider issues

We're looking at the possible future risks associated with climate change. To help us deal with these risks, we're improving the resilience of our systems, investigating better methods of drainage and building sewers which can cope better with changing rainfall patterns.

The climate change team works with the water resources team to plan for increases in demand and lower availability of water so that we can make sure customers always have water.