

Our Net Zero Plan



from
Southern
Water. 

Our Net Zero Plan

Introduction

Our Net Zero Plan sets out how we will reduce and prevent harmful greenhouse gases being released into the environment from our essential water and wastewater services.

Measuring and managing our greenhouse gas emissions has been a key part of the company strategy for well over a decade. Targeting net zero represents a significant escalation of our activities in response to the global climate emergency.

Greenhouse gas emissions are known to be contributing to global warming and severe climate change. In the UK, we are already experiencing the impacts. In the not so distant future, droughts, floods and rising sea levels will put more pressure on our communities and the natural environment.

Our plan has been developed following our collaboration with other water companies in Water UK's Net Zero 2030 Routemap. We signed up to the routemap in March 2019 and it was published in November 2020. We are committed to reaching our net zero goals. Our Net Zero Plan has the full support of our shareholders and Board.

Our Net Zero Plan sets out our pathway towards zero carbon.



The view of our Chairman and Leadership team



Keith Lough, Chairman

The Board, the Executive Leadership Team and our shareholders are fully committed to our Net Zero Plan. This plan is one element of our sustainability strategy that will deliver continued high-quality services, as well as our environmental ambitions, for the benefit of our customers and the wider community.



Ian McAulay, CEO

We are proud to be playing our part in this decisive decade for addressing climate change. Our role in protecting and improving the environment sits at the heart of Southern Water's purpose and vision to provide a resilient water future for our customers in the South East. Achieving our net zero goal will only be possible by working together with our stakeholders.



**Dr Toby Willison,
Environment & Corporate Affairs Director**

We are passionate about improving the environment for nature and our communities. Reaching net zero is a vital part of this. We are using a natural capital approach to developing and adapting our plans, to ensure that we use innovative, sustainable and future-proofed solutions to this challenge.



**Dr Alison Hoyle,
Director of Risk & Compliance**

On our pathway to net zero, it is important that we follow an evidence-led approach, so that we can make the best decisions for the future. This approach must also be transparent and accountable, showing that we are acting responsibly. Recognising that this is still an emerging field, and there are uncertainties or knowledge gaps, we will support collaborative work to improve understanding. We will report regularly on our progress and carbon emissions.

The facts

What is net zero?

Achieving net zero by 2030 will be met by a combination of reductions, alternative approaches and carbon removals.

This will mean that by 2030 any remaining greenhouse gases that we produce will be balanced by removals. These removals will include storing carbon on our own land (for example planting trees) or paying others to do it on our behalf.

Reduce and Avoid

emissions through efficiency savings.

Replace:

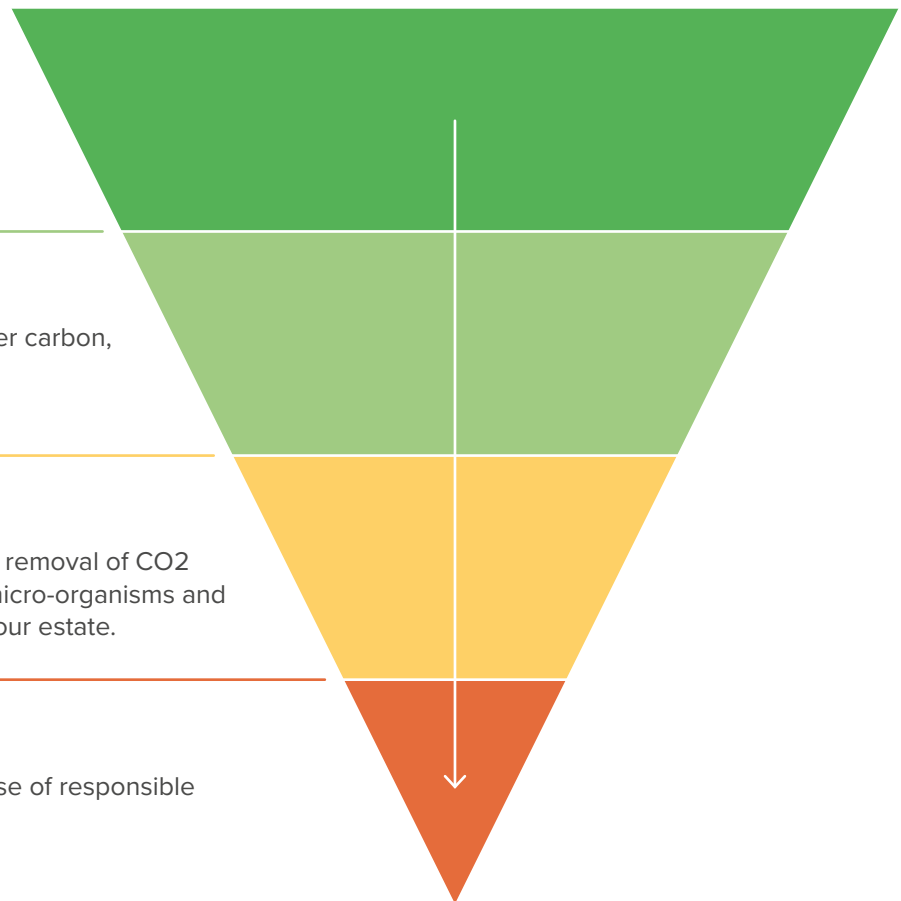
use alternative solutions that are lower carbon, for example technology change.

Remove

emissions through sequestration (the removal of CO₂ from the atmosphere by plants and micro-organisms and its storage in biomass or the soil) on our estate.

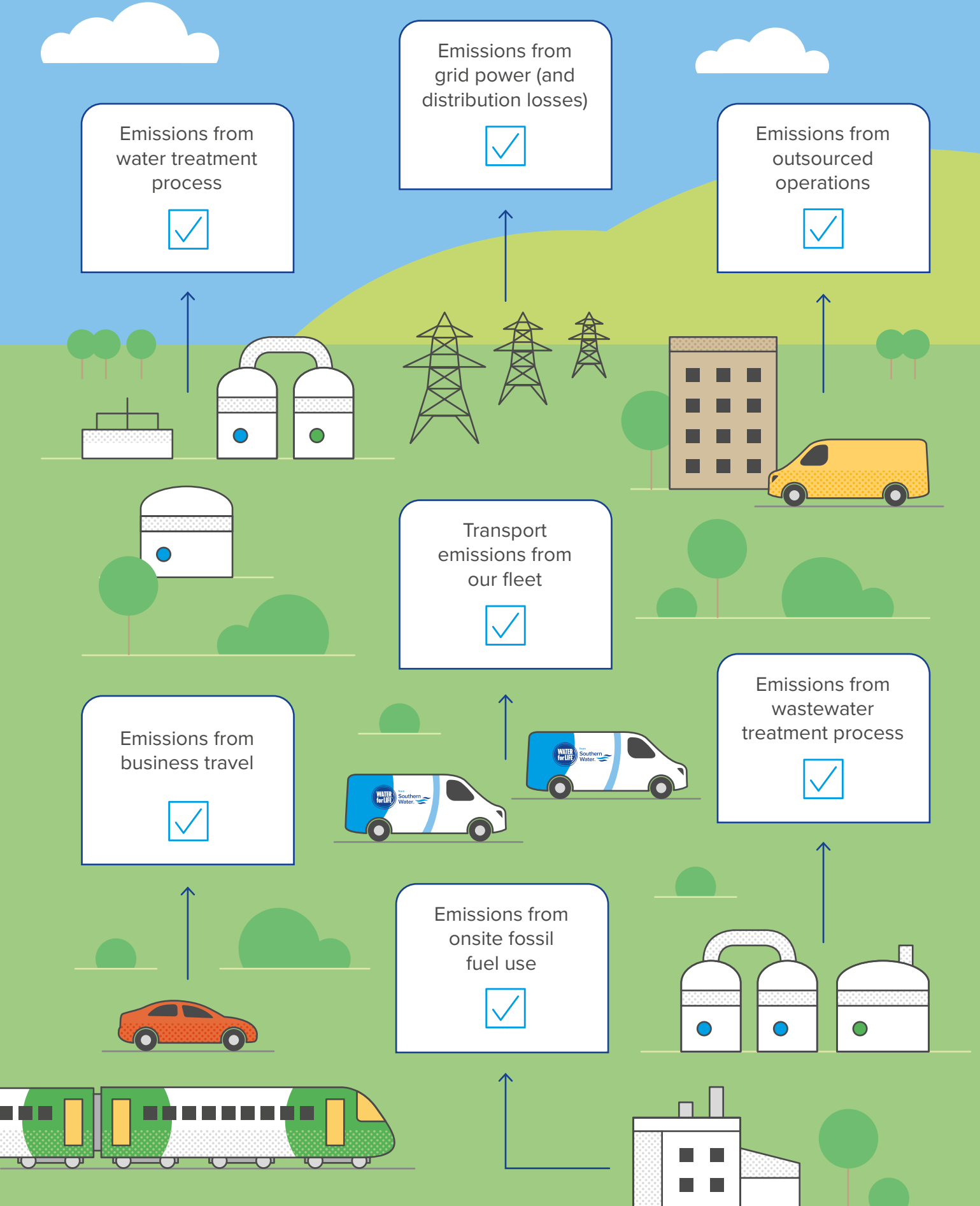
Offset

any residual emissions through the use of responsible carbon offsetting.



Our target for net zero covers the greenhouse gases associated with delivering our operational services. This includes the energy we generate and import, our transport and emissions arising from treatment (termed process emissions).

What is included in our 2030 target?



Why it's important

The UK water industry contributes around 1% of UK emissions, and we recognise the importance of tackling these ahead of the UK's 2050 target. The South East is already experiencing the impacts of climate change. Global warming is predicted to increase the impact even further in the future. If we don't take action, there will be devastating effects on our communities and the biodiverse environment around us and beyond.

The latest climate projections, summarised by the Climate Change Committee (CCC) in June 2021, estimate an average global temperature increase of between two and four degrees by 2100. We are located in the area of the country where the greatest impacts from climate change will be experienced. These are warmer, wetter winters and hotter, drier summers. Weather events will be more extreme and take place more frequently.

The call for change

The Paris Agreement in 2015 was a significant milestone in the global drive to address the climate emergency. 195 countries agreed to implement measures to hold the increase in global average temperatures to well below 2C above pre-industrial levels, and to make efforts to limit temperature increase to 1.5C. The follow up conference (COP26), to be held in Glasgow in November this year, will seek greater ambition in this area. It is expected to look to reduce the causes of global warming and prepare for the inevitable changes arising from the already elevated levels of greenhouse gases in the atmosphere.

In the UK, the Government has legislated to reach net zero by 2050, with interim targets of **68%** reduction by 2030 and **78%** reduction by 2035 against 1990 levels.



A close-up photograph of a child's hands planting a small green seedling into dark, rich soil. The child is wearing a pink long-sleeved shirt. The background is blurred, showing other people in a garden setting. A yellow circular callout box is overlaid on the right side of the image, containing text.

We want to
play our part in
addressing the
challenges and
moving towards
net zero.

Our story

Maximising our own energy generation and sourcing energy in the most responsible way

Changes in our energy sources, have helped us to reduce our emissions. As energy from the National Grid has included a greater proportion of renewable energy, and coal powered generation has declined, the energy is less carbon intensive.

In 2018, we began selecting electricity from energy providers that had a greater proportion of renewable power. We also increased the proportion of renewable power that we generate on site and use to power our treatment processes.

Currently over 16% of our own energy use is generated on site. A lot of this is through the generation of 'power from poo', where biogas is generated from biosolids. These biosolids are created during the wastewater treatment process and the resulting biogas is used as a fuel to generate electricity and heat.

Alongside our changes in energy, we are always looking to increase our efficiency through energy saving measures. Improving efficiency through reducing water supply leakage is also a key part of our efficiency programme. We have been investing in new technology, such as advanced pressure management, to help reduce leaks.



One way we're working with customers to save water, is through our our Target 100 programme, which supports customers in reducing their daily water use to 100 litres per person per day. We raise awareness about water efficiency and scarcity, installing smart meters and providing incentives. We can also provide free home visits to install water-saving devices and talk about ways to save water.

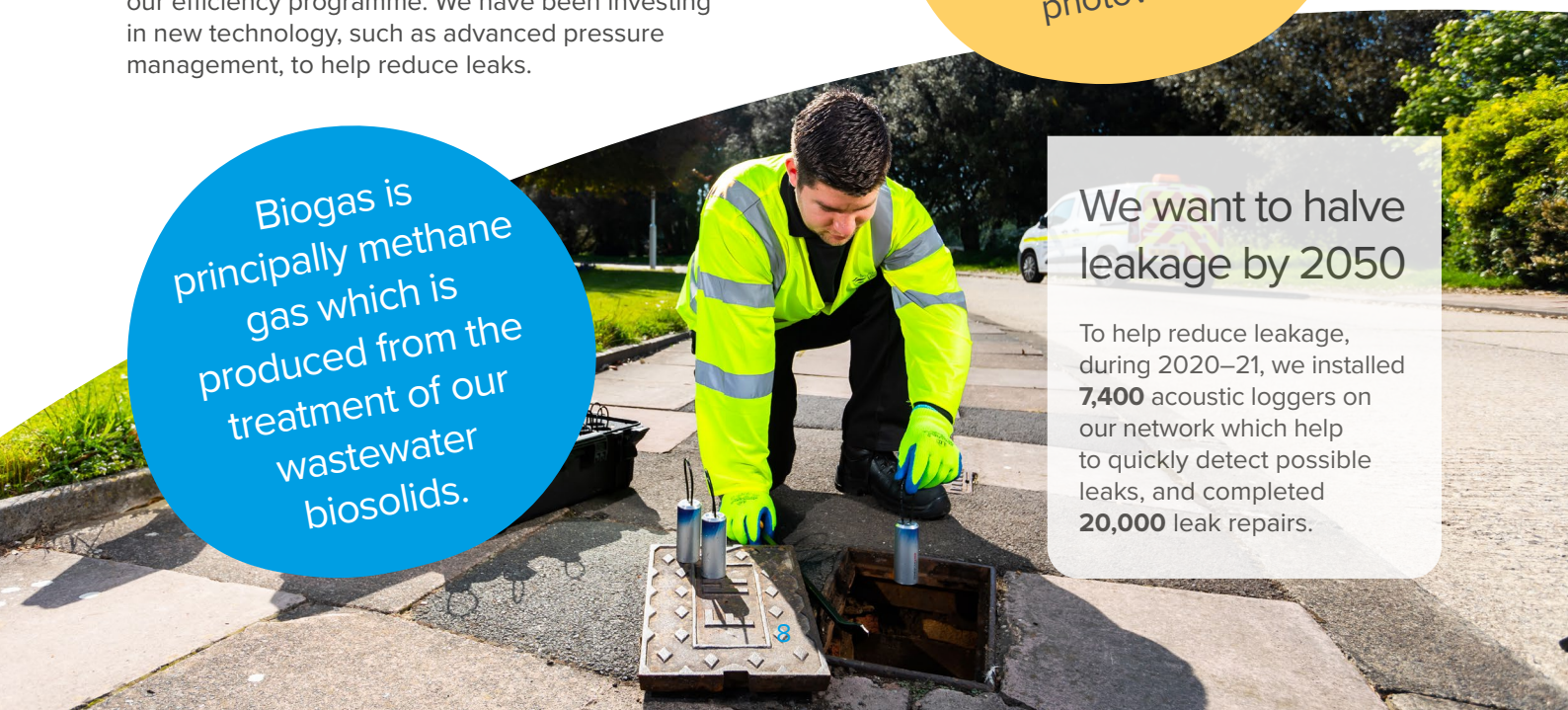
Reducing water consumption helps our customers to save money as well as helping the environment and contributing to net zero.

In 2020 we generated over 74 GWh of power from our biogas CHP (combined heat and power) plant and 3 GWh from our solar photovoltaics.

Biogas is principally methane gas which is produced from the treatment of our wastewater biosolids.

We want to halve leakage by 2050

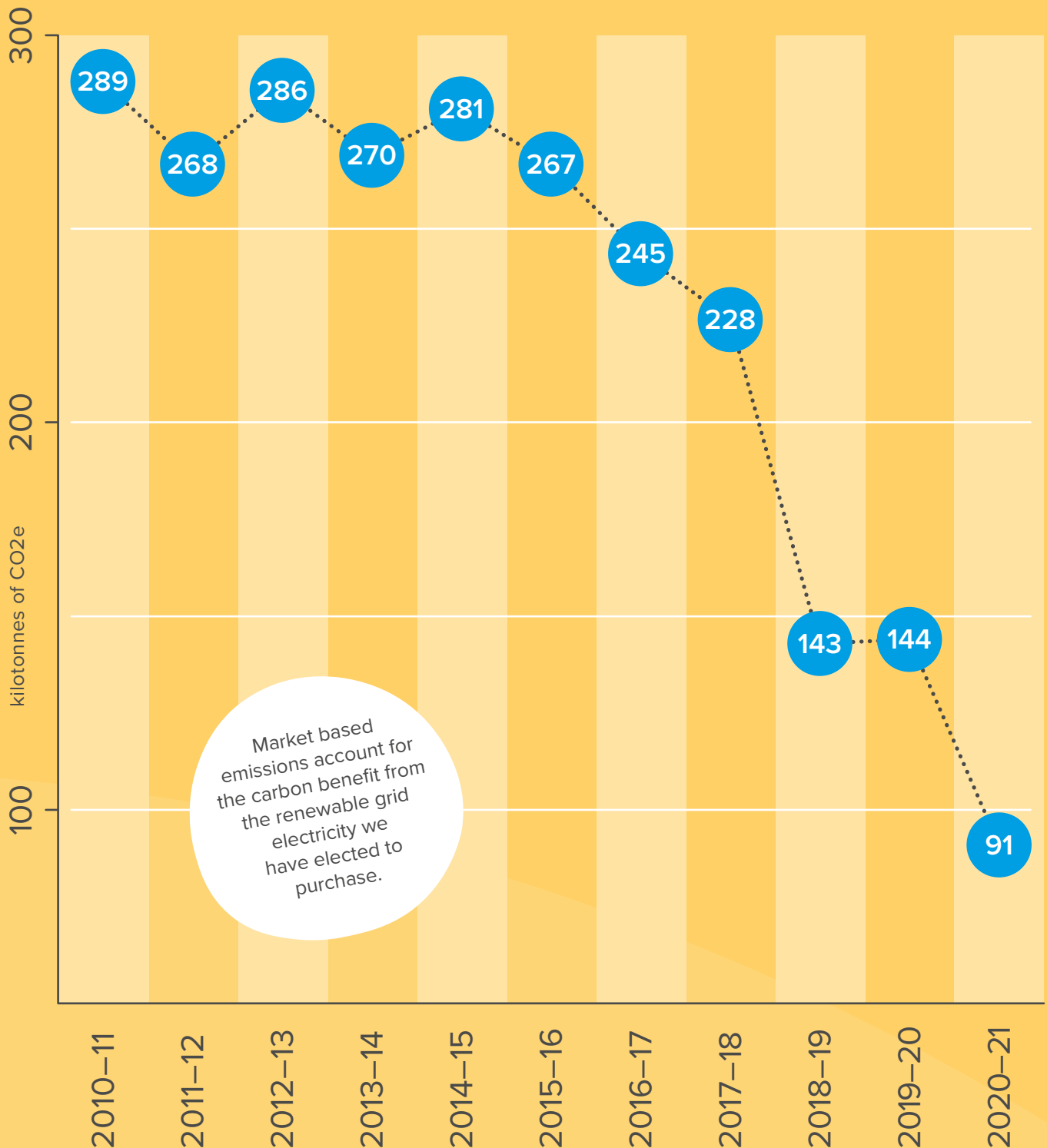
To help reduce leakage, during 2020–21, we installed **7,400** acoustic loggers on our network which help to quickly detect possible leaks, and completed **20,000** leak repairs.



Southern Water operational carbon emissions (2010–21)*

Our emissions have significantly reduced since 2018-19, when we began purchasing lower carbon grid electricity as part of our strategy to reduce emissions.

Our results are expressed as 'tonnes of carbon dioxide equivalent'. We include additional greenhouse gases in our accounting (methane and nitrous oxide) and convert these to the mass of carbon dioxide that would have the equivalent impact. This calculation is based on their global warming potential.



*Net emissions (market based accounting)

Calculating and reporting our emissions

How we measure our emissions

In line with the sector routemap, the market-based net emissions will be reported in our annual net zero updates.

In our reporting, we provide the information as gross and net emissions for a financial year. Gross emissions use 'location-based accounting', this incorporates the UK average carbon emission rate of National Grid power in the calculation of our footprint. For our net emissions, we have reflected the positive impact of the renewable backed power that we have purchased from our energy suppliers.

We calculate our emissions using the water industry standard carbon accounting workbook from UKWIR (UK Water Industry Research). Activity data, such as power used, is entered into the workbook and the associated emissions are calculated. The workbook is updated annually to reflect the latest UK emission factors and newly available scientific data.

Some areas within our Net Zero Plan require research in order to improve our knowledge. We will work collaboratively with others to improve understanding.

An example of an area we are working on, is our understanding of the magnitude of process emissions from our treatment works. Our collaboration with the UKWIR will increase our knowledge in this area so that we can develop ways to reduce such emissions.

Where our emissions come from

Removing water from the environment (abstraction) and treating water, pumping it to our customers and then collecting and treating wastewater, is an energy intensive business.

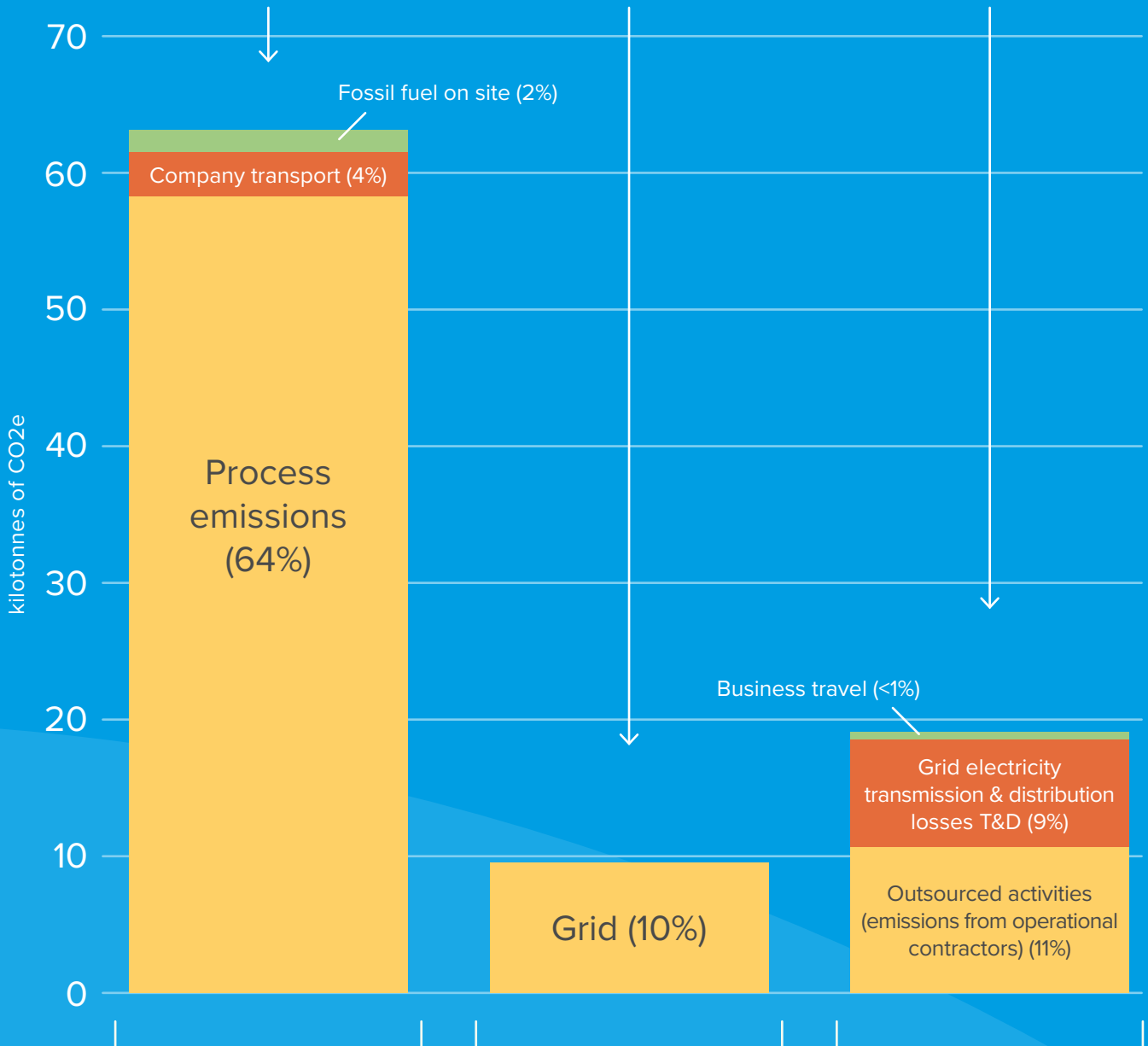
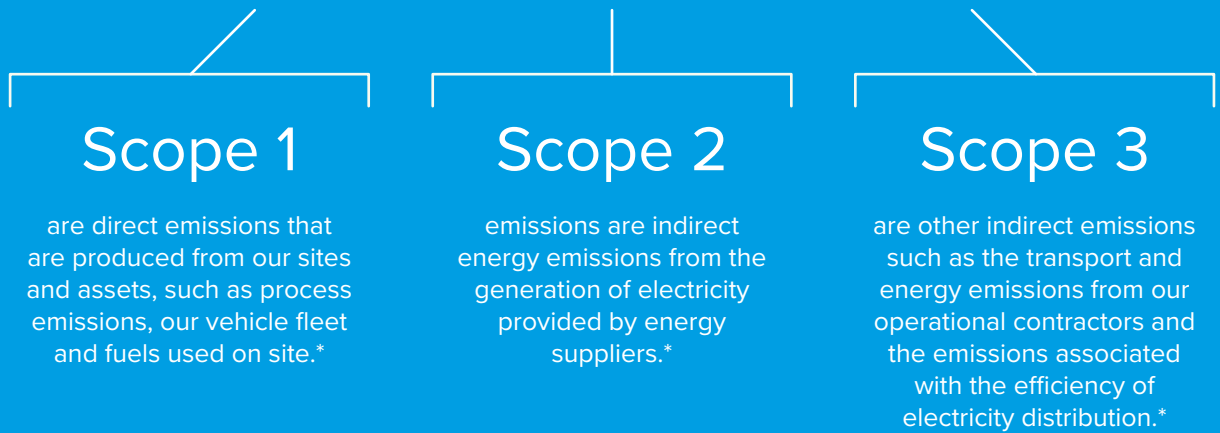
This means that many of our emissions have been based around our energy usage. However, this element is reducing due to the falling carbon intensity of the National Grid and the increased availability of renewable power.

We also generate emissions from the transport we use and the treatment processes we apply, when we return the treated water back into the environment.

Tracking our progress is key to achieving our net zero goal.

Our 2020–21 net operational emissions

Our emissions are categorised into three scopes:



Externally assured data calculated using the UKWIR Carbon Accounting Workbook v15
*(Greenhouse Gas Protocol accounting and reporting standard)

Achieving our goal will only be possible by working collaboratively together with our key stakeholders, our customers, our communities and the government.



Powered
by green
energy



SUCCESSING
TOGETHER

DOING THE
RIGHT THING

ALWAYS
IMPROVING

Our net zero principles reflect our company values of **succeeding together**, **doing the right thing** and **always improving**.

Our net zero principles

In order to reach our goal, we have developed six guiding principles:



Working together with all our stakeholders will be key to achieving our goal. This means collaboration with government, our regulators, our customers, suppliers and employees.



Using an evidence-led approach which generates and follows data to enable us to model our best future outcomes as accurately as possible. Results will be reported regularly and transparently.



Acting responsibly with transparency and accountability regarding all our actions and in reporting the results. This means also being open and honest about where uncertainties in our understanding exist.



Prioritising the reduction and avoidance of emissions over offsetting by following the carbon reduction hierarchy. This includes transparency of how offsetting will be used and aligning this within our natural capital approach, as part of our wider sustainability strategy.



Seeking sustainable, future-proofed and innovative solutions through our use of natural capital decision-making to deliver positive solutions that benefit current and future generations. This will enable us to continue to protect and improve the environment.



Playing our part in the UK water industry in ambition and action through collaborative working, sharing our learnings and moving forward with a strategic, innovative and evidence-based approach.

Our journey

What is our ambition?

Reaching net zero is a long-term strategy which will only be successful with a collaborative approach.

Our ambition is to meet the UK's 2050 net zero goal as stated within the Climate Change Act 2008. This would mean our whole life carbon emissions arising from both our operations and the emissions embodied within our infrastructure and equipment would be nil.

The current focus of our net zero target is to tackle the challenges of reducing emissions arising from our operational services. Reaching net zero operational emissions by 2030 is a significant and challenging milestone on our pathway.

Targeting innovation

Our in-house Innovation and R&D team are supporting us to understand the big challenges.

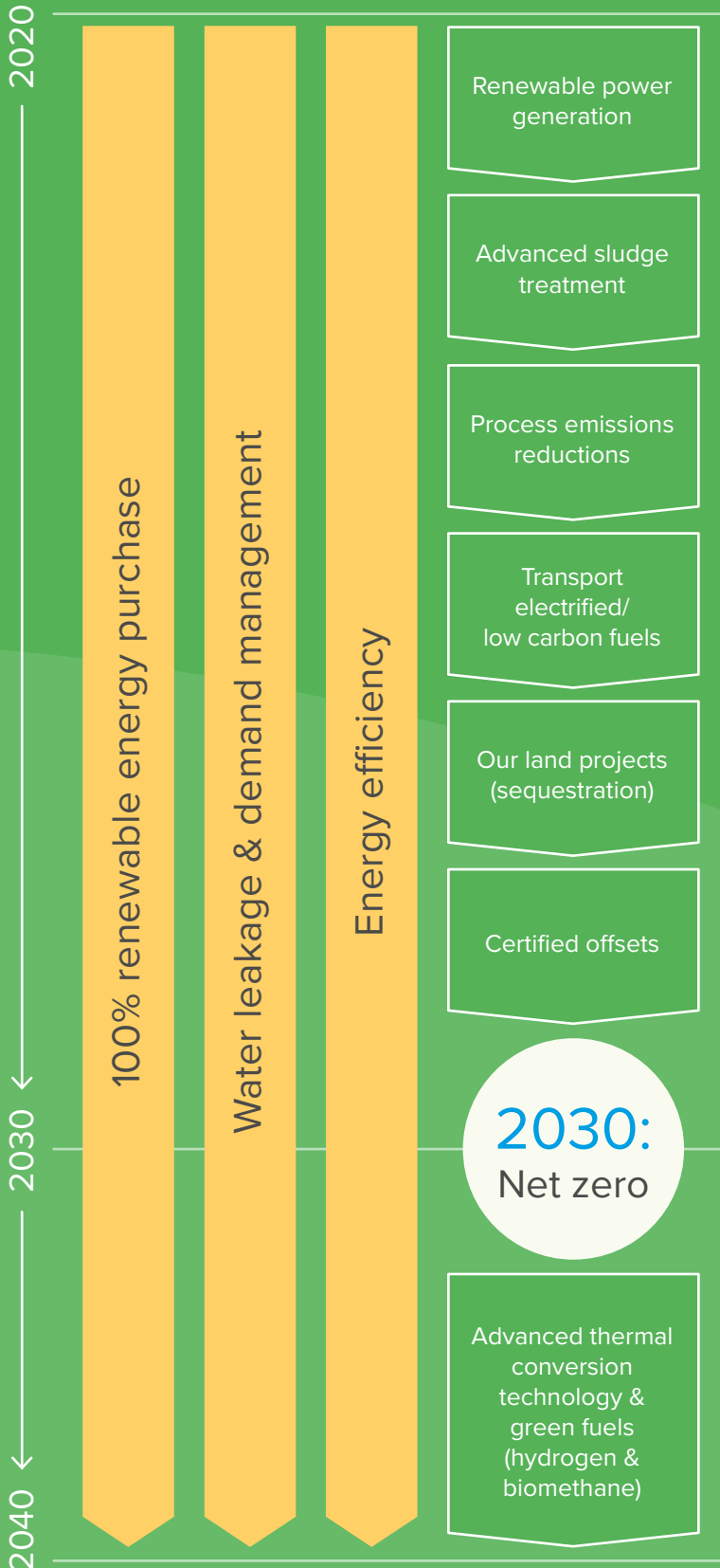
For our work on net zero, the team are looking at opportunities in low energy, advanced treatment systems and how we can measure and reduce process emissions.

Targeting innovation
to progress our net
zero journey



Reaching net zero operational emissions

We have identified our known main emission sources that arise from our operational emissions, calculated using the industry's standard approach (the Carbon Accounting Workbook). This is how we are planning to achieve net zero:



• Energy –

We have reduced our energy use by over 90% through the purchase of fully accredited renewable backed electricity, and we constantly look for the most efficient ways to operate our sites. We will continue to increase our renewable energy production, as well as using biogas as an alternative fuel source. We are also planning to install additional solar capacity at multiple sites.

• Process emissions –

These emissions arise from the treatment processes when recycling wastewater and biosolids back to the environment. Our focus includes developing greater scientific understanding of the emissions and how we can improve our control to reduce these.

• Transport –

These emissions come from our vehicle fleet and business travel. Our plan includes the conversion of our transport to electric vehicles and low carbon fuels in a phased approach to make the best use of technology and logistics development.

Our plan to reach net zero by 2030 is shown in the adjacent diagram. This plan will continue to evolve, as we look for the best ways to address population growth and meet increasing environmental demands, whilst driving down carbon emissions and adapting to climate change.

Working with nature in our net zero strategy

There is a natural way to capture carbon from the atmosphere, in trees and sea kelp. As it grows, this natural vegetation absorbs carbon dioxide from the air, removing carbon from residual emissions. The process of capturing carbon in this way is called sequestration.

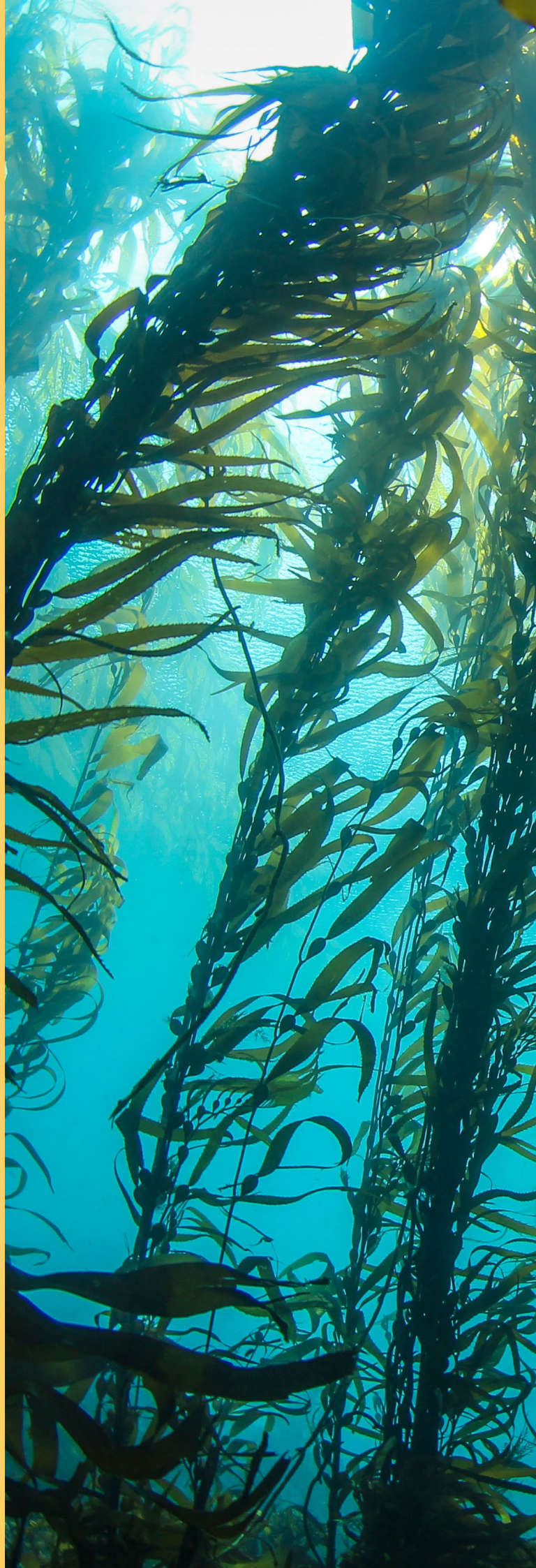
We will counterbalance the remaining emissions through carbon sequestration projects. This approach will include embracing nature-based solutions to sequester residual carbon.

We are currently talking with local partners and stakeholders to see how we can work together to help regenerate kelp off the Sussex coast. Marine habitats such as kelp absorb large amounts of carbon dioxide, making it a useful method of sequestration, as well as enabling us to restore marine and coastal natural capital assets. The Sussex Kelp Restoration Project is a pioneering marine rewilding project led by a partnership including Sussex Wildlife Trust, Blue Marine Foundation and the University of Portsmouth. We are exploring how this and other 'blue carbon' projects could play a part in our carbon storage and offsetting strategy. This is just one of the novel ways that we are looking at to offset our carbon emissions.

We are also enhancing the environmental benefit of our own estates. We are working with the Wildlife Trusts across the South East to understand the current natural capital value of our own estate, and identifying opportunities for these sites to deliver carbon storage and sequestration benefits, alongside other benefits such as biodiversity. This work will feed into our Net Zero Plan via our carbon storage and sequestration strategy, to identify what we can deliver through our own estate before we look for offsetting opportunities on other's land.

Delivering our offsets through habitat restoration (including rewilding) and creation will require working in partnership to make sure that we do the right thing in the right place. We are working closely with Local Nature Partnerships (LNPs) across the South East to share learning and best practice. This will help ensure that our approach harmonises with emerging initiatives such as Local Nature Recovery Strategies.

If we require offsets from 2030, these will be certified to a high sustainability standard.





Natural capital refers to the valuable environmental assets that benefit us, such as water.



We want to make sure that our customers are at the heart of our plans.

Engaging with our customers

What is our ambition?

Achieving net zero emissions will benefit present and future generations of customers, and we want to make sure that our customers are at the heart of our plans.

In order to discuss the plans with our customers, we will run research groups with our consumer panels in the second half of 2021. This will give customers a chance to help shape our Net Zero Plan going forwards.

Our pledges

In order to progress we have pledged to:



Buy 100% fully accredited renewable-backed power from our energy suppliers from 1 April 2021.



Aim to generate 24% of our own renewable energy by 2025.



Transform our company vehicles by electrifying the fleet or introducing alternative low carbon fuels by 2030.



Aim for nature-based solutions and work in partnership with other organisations.



Report progress and our emissions annually in a transparent way.



Support collaborative research, development and innovation to make technological advances.

