Environment Agency

The Environment Agency: Reaching net zero by 2030

We all have a role to play in tackling the climate emergency, which is why the Environment Agency has committed to reaching net zero by 2030.

The climate is changing. *We* must change faster.

Across the world, people are recognising that together we are facing nature's and humanity's biggest single challenge – the climate crisis.

We all have a role to play in tackling the climate emergency, which is why the Environment Agency has committed to reaching net zero by 2030. We will reduce our emissions and take carbon out of the atmosphere.

That means we will have stopped contributing to climate change.

We've adopted a tough, internationally-recognised definition of net zero, one which counts both our direct emissions and those of our suppliers. Our targets are based on science, and directly correlate to the Paris Climate Agreement which aims to prevent global temperatures rising above 1.5C.

As an operator and a regulator, the Environment Agency has a leading role in helping the country get to net zero by 2050, a commitment the UK government set out in law in 2019.

We are helping communities, business and nature become more resilient and prepared for the impacts of climate change. Through regulation, we're helping business and industry become less reliant on fossil fuels and make better use of the resources we have. We're using evidence to engage decision-makers and others so the health of people and the environment are at the heart of their decisions.

But to be a credible champion for the environment, we have to walk the walk.

That's why we'll reduce our total carbon emissions, including those of our supply chain, by 45% by 2030. We'll offset the rest through projects that harmlessly lock up carbon and offer wider benefits, such as reduced flood risk and more habitat to boost biodiversity.

We will do this whilst continuing to deliver all our other core aims. We will not stop building flood defences, pumping water out of people's homes if they flood or around the country to alleviate drought. We will find new and different ways to do these things which produce less emissions.

The scale of the challenge is huge – but we are ambitious and focussed. We will inspire those around us to take action. And we will lead the way to a greener, fairer future.

Planning for net zero is one of the priorities in our current business plan, EA2025.[1] By 2030, we will tackle a broader range of social and economic development issues affecting people and the environment, as outlined in our 10-year sustainability action plan – eMission2030. Over the coming decade, we will do more to deliver environmental net gain, optimise our use of resources, bring added benefits to people and communities, and respond to the climate emergency.

We need to start now, by tackling our own carbon footprint. And this is how we'll do it.

James Bevan
Chief Executive

Emma Howard Boyd
Chair

1 Environment Agency: EA2025 creating a better place. https://www.gov.uk/government/publications/environment-agency-ea2025-creating-a-better-place

A net zero organisation by 2030

We currently produce approximately 273,000 tonnes of carbon annually. As part of our goal to help create a net zero nation, resilient to climate change, we need to walk the walk and achieve net zero emissions in our own activities.

Construction
Accounts for half our emissions, or around 148,000t per year.
Building flood defences uses concrete and steel and makes up half of our carbon footprint. We'll cut these emissions by designing our defences to work with nature more, and default to low carbon concrete wherever we can technically do so.

Pumping
Produces 17,000t per year.
We pump during flood, drought and to manage water resources. It is one of our biggest direct sources of emissions. We'll pump only when we really need to, switch our diesel-powered pumps to run on electricity, and make more of renewable energy.

Commuting
Accounts for 13,000t per year.
Getting to and from work is one of our top 5 emission sources. Enabling our people to be flexible in how and where they work will help cut emissions and look after our wellbeing.

Environment Agency

Cars
Produce 31,000t per year.
The manufacture of our fleet is a big source of emissions. To address this we'll use innovation to reduce demand and shrink our fleet. We'll also electrify as much as we can and have all our cars electrified by 2023.

Computing
Production and use results in 15,000t per year.
The manufacture of our computer equipment and hosting of our IT services cause significant emissions. We'll limit the number of devices we have to two per person. We'll also repair, re-use and recycle as much kit as we possibly can.

Offset
We'll start by reducing the carbon we produce. Then we'll develop a science-led approach to absorb any remaining emissions, using the natural environment here in the UK.

Our carbon footprint is around 273,000 tonnes per year

By 2020, the Environment Agency had already reduced its direct emissions – the emissions we produce through our own activities – by 47%.

But we have 4 times that much to do over the next 10 years when we include our supply chain emissions.

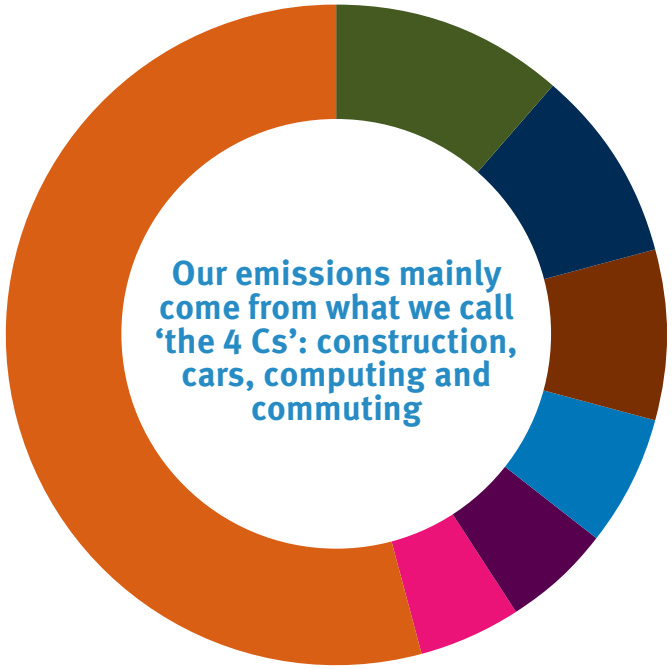
The worldwide coronavirus pandemic enabled us to take stock; the drop in travel and office use reduced our direct emissions by a third in the last financial year. This presented us with a unique insight into our working patterns – insight we can use to make smarter decisions in future about how and where we work.

We took the opportunity to re-examine our baseline emissions using more empirical data, rather than modelled data, to make it more accurate.

We will have to tackle each of these in order to reach net zero. This net zero roadmap has been developed collaboratively, with bottom-up plans developed by each part of the business helping shape our future strategy.

We're starting with the actions that will make the biggest impact, prioritising those that will save both cost and carbon, alongside those which will bring added benefits for people and communities in a healthy, safe and socially-just way.

Here, we break down what those actions look like, setting out what we'll achieve and by when.



148,000 tonnes

More than half our emissions (148,000 tonnes) come from construction

31,000 tonnes

31,000 tonnes come from our fleet (manufacture and delivery)

26,000 tonnes

26,000 other indirect emissions (such as waste and water supply and treatment)

23,000 tonnes

23,000 other direct emissions (such as our buildings, business travel and laboratories)

17,000 tonnes

17,000 tonnes from our pumping activity to alleviate flooding and drought

15,000 tonnes

15,000 tonnes can be attributed to our data, digital tools and technology, (manufacture and operation)

13,000 tonnes

13,000 tonnes come from commuting and homeworking

More than half of our emissions come from our construction of flood defences. Reducing these emissions will pose a huge challenge.

CONSTRUCTION

The Environment Agency builds flood defences to reduce the risk of flooding to hundreds of thousands of homes and businesses across England.

This work results in approximately 148,000 tonnes of carbon emissions each year. We will cut this by 45% to 81,400 tonnes.

We'll do this by managing flood risk through nature-based solutions wherever possible, reducing the need for construction and achieving wider benefits like green spaces for communities and better wildlife habitat. When we do build defences, we'll limit the emissions from our materials, processes and suppliers.

Starting in 2021, we'll use the lowest carbon concrete in our defences that meet our performance requirements. We will work with partners, suppliers, stakeholders, the wider construction industry and other sectors to encourage others to do the same.

More than half of our emissions come from our construction of flood defences. Reducing these emissions will pose a huge challenge.

It doesn't mean we will stop building flood defences to help protect homes and businesses. It does mean we will need to do things differently.

Research shows every £1 spent on flood defences prevents around £5 in damage.[2] By the end of 2021 we will also know how much carbon these defences avoid for communities by preventing flooding, which will help us tell the whole story and make the case for future flood schemes.

Understanding the carbon footprint of different kinds of defences will help us understand the footprint of our capital programme. By 2022, we will introduce annual carbon budgets aligned to our investment programmes so they achieve the most benefit for the lowest financial and environmental cost.

All business cases will contain full carbon appraisals for different scheme options, and we'll actively encourage our designers and contractors to prioritise low carbon solutions.

We'll pilot modern methods of construction involving innovative materials, tools and technology like 3D printing and artificial intelligence.

By the end of 2021, we'll have a plan for how our assets like gates, barriers and pumping stations will generate, run on, and store renewable energy wherever possible.

In the future, we'll take what we've learned from applying carbon budgeting to our construction work and use it to inform our funding bids and long-term investment into flood defences.

And as we learn, improve and continue to reduce our emissions, we'll share good practice and collaborate with the construction industry, the Institute of Civil Engineers, Government and private sector to further the country's shift to low-carbon infrastructure.

2 Environment Agency long-term investment scenarios (LTIS) report (2019)

The Boston Barrier - modelling sustainability

The Boston Barrier is the first flood defence to take into account the United Nations' Sustainable Development Goals.[3] It's the second largest defence in the country, featuring a 300 tonne steel gate that is raised into place to protect 14,000 homes and businesses from tidal flooding.

- Low carbon concrete was used throughout – 14,000 tonnes, or 90% of the weight of the entire structure
- 1,500 tonnes of steel and 5,000 cubic metres of concrete saved through redesigning the structure
- 30,000 lorry trips avoided by reusing construction debris, rather than disposing of it
- £7m invested in the local economy by sourcing suppliers and materials within a 50 mile radius
- 25% of electricity saved by using an air source heat pump to heat the control building

"If we can achieve these savings and efficiencies with a project of this sheer scale, we can and should apply the same thinking in everything we turn our hands to. We want to lead the way and inspire engineers to build greener for our future."

Adam Robinson, Boston Barrier Project Director

3 https://www.undp.org/content/undp/en/home/sustainable-development-goals.html

We'll reduce the number of vehicles
we use and switch from petrol or diesel to electric
or alternative fuels.

CARS

Emissions from our cars, vans, boats, four-wheel drive vehicles, large goods vehicles and plant come both from the manufacturing process and how we use them. We will reduce our current emissions of 31,000 tonnes by 45% to 17,050 tonnes over the next decade.

We'll reduce the number of vehicles we use and switch from petrol or diesel to electric or alternative fuels.

The Environment Agency looks after more than 240,000 kilometres of rivers and streams, thousands of flood defences, plus habitat restoration and natural projects across the country. Our fleet is vital to the work we do, but we are working hard to minimise the impact our vehicles have on the environment.

By 2030, we will reduce the number of our lease cars by 50%, from 4,000 to 2,000.

We'll switch to electric cars by 2023 and reduce our 1,500-strong commercial vehicle fleet wherever possible. Our two-wheel-drive vans will be electric by 2025 and our four-wheel-drive vehicles will be replaced by ultra-low emission vehicles (ULEVs) by 2030.

By 2025, we'll also cut emissions from our plant and equipment by 50%, by repairing and refurbishing, rather than replacing. We'll hire more and purchase less to reduce the impact of manufacturing.

We will reduce the emissions from our boats as much as possible by 2025 through alternative fuels and electric propulsion.

Greening our fleet

- In 2020, the Environment Agency became the first government organisation to sign a charter officially committing to reducing the negative environmental impact of its plant and equipment.
- A sharing initiative has been developed to help us use our plant more efficiently and reduce the amount of equipment we need to buy or hire in. We're trialling electric mini-diggers and forklifts, which are cleaner and quieter, to understand how they can work for us in the future.
- We now have 31 fully-electric vans in our fleet, replacing diesel vehicles – and at least another 150 to come by the end of 2022. Switching to these electric vans will save more than 2,300 tonnes of carbon emissions over the life of the vehicles.

"We're excited about adding electric vans to our fleet. It's another way we're playing our part in the net zero journey – on top of replacing petrol tools with electric ones and looking into solar charging at our depots."

Andrew Rogers, Field Team Leader, Worcestershire

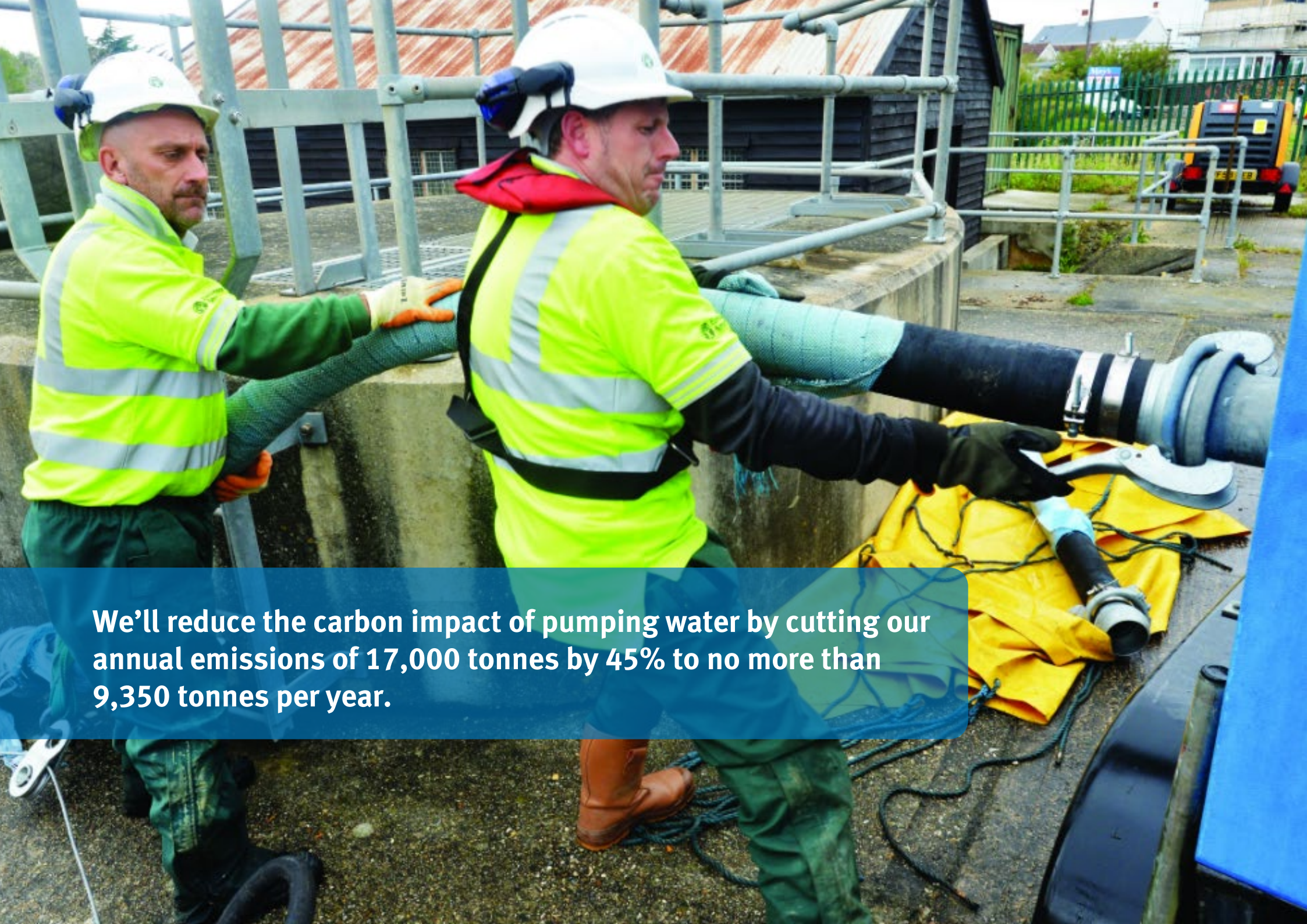
Small switches mean savings

Some of our field staff in South West England have trialled using electric hand tools for maintenance work, forgoing petrol-power.

These new electric tools – such as hedge trimmers and chainsaws – will save an estimated 3-4 tonnes of emissions each year – and the team are thrilled with the swap.

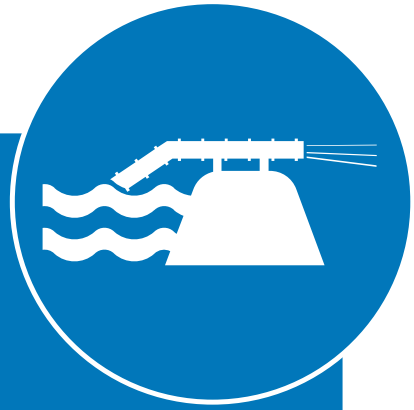
"With less noise, vibration and fumes, the battery-powered plant is a better choice all round – for us, for the communities we work in, and for nature. Sometimes even the smallest change can make a big difference."

Jamie Sachs, Field Operative, North Devon



We'll reduce the carbon impact of pumping water by cutting our annual emissions of 17,000 tonnes by 45% to no more than 9,350 tonnes per year.

PUMPING



Pumping water from one place to another is an important part of our routine operations and incident response. It helps us reduce the risk of flooding to homes and businesses, manage our water resources throughout the summer months and especially in periods of prolonged dry weather so there's enough for people, nature, industry and agriculture.

We'll reduce the carbon impact of this work by cutting our annual emissions of 17,000 tonnes by 45% to no more than 9,350 tonnes per year.

By 2022 we'll set an efficiency standard for our pumping stations and mobile pumps and we'll work with our supply chains to put plans in place by 2024 to reach these standards.

We'll explore how we can use all our assets, including pumps and flood gates, to generate, use and store renewable energy and will understand the opportunities and have an investment plan by 2022.

All our pumps will be upgraded to run on greener fuel. We'll electrify our remaining 13 stationary diesel pumps alongside our mobile pumps, with initial recommendations for investment in place by April 2022.

Upgrading our pumps

On the Somerset moors a number of large diesel-driven pumps have historically been used to help manage water levels and reduce flood risk. As the pumps aged, there was an ever increasing need for costly maintenance and repairs – which presented the opportunity to replace old technology with new.

Over the last 10 years, 14 of these pumping stations have been upgraded with electric motors, maintaining the same pumping capacity but with less local disruption, the ability to operate automatically, and better reliability.

The upgrades mean we're able to continue managing water levels for people and the environment while cutting at least 50 tonnes of emissions a year.


We will reduce the annual emissions arising from our technology by 45% to 8,250 tonnes.

COMPUTERS

The carbon footprint of our computers comes less from plugging in and using things like mobiles, tablets, and laptops, and more as a result of manufacturing the hardware, as well as our digital data storage, networking and video conferencing.

Currently, the annual emissions arising from our technology is 15,000 tonnes. We will reduce this by 45% to 8,250 tonnes.

We'll address the need first, challenging whether we actually require multiple devices.

By April 2022, we'll make sure we're only issuing new devices when we have to, limiting this to 2 per person.

We'll work with our supply chain to refurbish, repair and reuse devices like laptops and mobile phones before replacing them, and we'll make the best use of technology for remote working.

Every device will have the right tools to support remote working in the future. While we have to accept this will increase our emissions from home-working, overall the net benefit will be greater as it will help reduce our carbon from offices, business travel and commuting.

"For the first time, we have a sustainable digital and information strategy built on robust data. We're training our staff and tracking our carbon savings to make sure our technology – and how we use it – has as little environmental impact as possible."

Chris Howes, Chief Digital and Information Officer

New flood warnings, new technology

Across England, more than 1.5 million properties at risk of flooding from rivers and the sea receive flood warnings from the Environment Agency. This service relies on a network of monitoring stations across the country that measure things like water depth and flow.

In 2019 we launched a project to create an additional 260 monitoring sites, all of which used the latest technology and innovation. The new sites:

- Used just 4% of the concrete needed for traditional monitoring stations
- Were five times less expensive
- Are much faster to deliver
- Need less maintenance, meaning fewer site visits and fewer emissions from travel
- Are powered by green energy
- Will provide flood warnings to an additional 250 communities across the country
- Provide the model for reducing carbon impact when we upgrade our existing sites

We will maintain a reduction in our emissions from commuting of at least 45% compared to our pre-pandemic baseline by 2030.

COMMUTING

Pre-pandemic, our daily commutes contributed around 13,000 tonnes a year to the organisation's carbon footprint.

We will maintain a reduction in our emissions from commuting of at least 45% compared to our pre-pandemic baseline by 2030, capping this at no more than 7,150 tonnes a year. We will do this by encouraging flexible and remote working.

We will make sure people have the right tools to work remotely – and more than that, we will continue to normalise a culture of flexible working that supports the wellbeing of our people and our natural environment.

Calculating the carbon cost of our commute

The global pandemic saw a transition to home-working, and presented a once-in-a-lifetime opportunity to examine our working patterns and what changes we'd like to keep in the long-term.

At the end of 2020, we launched a carbon commuting calculator to help our people understand the environmental and financial impacts of commuting and working from home.

It showed increased energy use at home, but our overall emissions had dropped because fewer people were commuting. Additionally, it found our average commute is a 32-mile round-trip, and that most people wanted to continue working from home even when offices reopened.

The results showed that by continuing to work flexibly in future, we could cut our emissions from commuting by 4,000 tonnes per year.

This insight can help us make smarter, greener decisions in the future.

Our buildings, offices and depots help our 11,000 Environment Agency colleagues connect with each other, businesses and communities across the country.

COMMUNITY

Our buildings, offices and depots help our 11,000 Environment Agency colleagues connect with each other, businesses and communities across the country.

These buildings currently contribute 8,000 tonnes of emissions to our total baseline carbon footprint. We will reduce this by 45% to 4,400 tonnes by 2030.

We will do this in part by making the best use of our space and using less of it.

We'll equip our people to work more flexibly, reducing the demand for office space, and then we'll reduce our property to meet that revised demand. Our new property strategy will be in place by 2022.

All our buildings will meet strict energy-efficiency standards, including new acquisitions. If a building being considered for occupation isn't efficient enough, the cost of bringing it up to standard will be accounted for and included in the business case.

And while we already power our buildings with green energy, we'll review our sources to make sure we're always using the best option for the environment.

All appliances and equipment in our offices will also be as energy-efficient as possible. By 2025, electric hook-ups will be installed at our sites across the country to support our transition to electric fleet.

We know this alone won't be enough, which is why we'll look for other innovative ways to save space and cut the carbon cost of our estate – for example, making our labs more efficient by exploring miniaturisation of our scientific equipment, and piloting the use of artificial intelligence for temperature control.

Modelling sustainability in our offices

Horizon House, the Environment Agency's Bristol office, opened in 2010 and was the UK's highest BREEAM-rated office. It features:

- Recycled concrete and sustainable timber in construction
- Natural ventilation
- Ground source heat pumps
- Solar water heating and photovoltaic panels for renewable energy
- Rainwater collection and grey-water toilet systems

- AI-controlled office lighting

"When I first walked through the doors of Horizon House 10 years ago for a job interview, I was struck by the beautiful architecture and the freshness of the air inside. All the green features – like the natural ventilation – are also great for our wellbeing, and remind us that sustainability should be a core value in everything we do."

Efe Igurube, Flood and Coastal Risk Manager, Bristol

We will work with and influence our suppliers to reduce their carbon emissions alongside our own.

CONTRACTS

Tackling our own emissions won't be enough. That's why we've adopted a tough, internationally-recognised definition of net zero; one which accounts for the emissions of our suppliers as well as those from our own activities.

Emissions from our supply chain account for 84% of our total carbon footprint. We will work with and influence our suppliers to reduce their carbon emissions alongside our own.

By April 2022, we will develop a supplier charter setting out our values and we'll ask our suppliers to sign up. We'll set new requirements for suppliers to report back to us on their carbon data and publicly disclose their emissions, and we'll track their performance.

By that same deadline, all significant new contracts (valued at £500,000 or more) will have to submit to us a carbon baseline and reduce it year-on-year for the life of the contract. We're aiming for reductions of 40 - 50% of the carbon footprint of a typical contract.

By 2024, all our major suppliers will be required to report on their emissions to the Carbon Disclosure Project[4], set a net zero target, and report on their progress each year.

But it's not just about setting and measuring targets – it's also about working together to increase the pace of change. Initially, we'll invite our top 25 suppliers to undertake the specialised, accredited climate change and net zero training we developed for our staff.

And we'll share our learning, recognise our achievements, and celebrate our progress with an annual suppliers' conference and awards ceremony where we can showcase our joint learning and successes.

"As a team, we are connecting the organisation, commercial partners in Defra, and our suppliers with our net zero ambition – and driving innovation and improvements in the marketplace."

Usman Khan, Senior Advisor,
Corporate Management Team

A circular approach to waste

Reducing the waste we and our suppliers produce is another way we're looking to cut our carbon footprint.

We're working with our suppliers to help them take a 'circular' approach to waste. For example, our clothing contract covers not just the supply of new clothes, but the collection and disposal of the old ones so our supplier can make the most of reuse and recycling opportunities.

Similarly, our flooring contract requires our supplier to take back off-cuts and process them into new flooring as part of a closed-loop process. And the modular furniture in our offices, through its design, is 99% recoverable at end of use.

By considering end-of-use disposal at the point of purchase, we're helping reduce resource consumption and associated carbon impacts.

4 https://www.cdp.net/en

By the end of 2021, we will have developed a science-based, strategic framework to offset our emissions.

CONSERVATION AND CARBON OFFSETTING

We know it won't be possible to completely eradicate our carbon footprint by 2030 because of the scale of the vital work we do in protecting people from flooding, regulating other businesses to protect the environment, and physically improving the natural habitat.

Our strategic focus is on firstly reducing our emissions by at least 45% and then working to absorb or offset our remaining emissions through projects that achieve multiple wide-ranging, long-lasting benefits for people and nature – the concept known as environmental net gain.

By the end of 2021, we will have developed a science-based, strategic framework to offset our emissions. This framework will be based on our research across 5 different dynamics:

The science: We will complete a review of scientific evidence so we know the best, most efficient and effective way to offset our emissions.

The market: We'll review offsetting schemes and agree which ones meet our standards and offer best value for money.

The legalities: We will clarify the legal considerations related to our offsetting.

The partnerships: We'll identify key partnerships with landowners, suppliers and public bodies that present the best large-scale offsetting and habitat creation schemes.

The accounting: We'll be confident we can maximise the benefits of any offsetting work because we can clearly measure the gain from verified offset measures against our remaining carbon emissions.

The land we own already absorbs significant quantities of carbon every year. Much of this is salt marsh, providing valuable habitat and rewilding opportunities. We will help develop the verified carbon offset codes that capture, and allow us to account for, the benefits of habitats like these.

Calstock – a carbon sink

In Cornwall, a new 11-hectare wetland is planned, nestling up against the community of Calstock, within the tidal Tamar.

Featuring habitat for rare plants, bittern, starlings and swallows, the wetland was designed by the Environment Agency to reduce flood risk to the village, restore an environment that had previously been heavily engineered, and create a rich, new reedbed.

The project, which will help make the community more resilient to the impacts of flooding and climate change, uses locally excavated soil rather than concrete in flood embankments, cutting the whole-life carbon footprint of the project by 72%.

The wetland also serves as a carbon sink, harmlessly locking away approximately 22 tonnes of carbon emissions each year and provides local people and visitors with a place to reconnect with nature.


Together, and with your thoughts, ideas and suggestions, we can make a huge difference.
FAO: BARRY DEAN 1 - DO
REGION: SOUTH WEST
Site: RIVERS HOUSE BRIDGWATER
SW / SCZ / RIVERS / BRIDGWATER
NLS0683

Reaching net zero will be one of the biggest challenges the Environment Agency has ever faced.

It will require every single one of us to play our part, to think and act differently, and to make choices and changes that won't always be simple.

Together, we will create a carbon-conscious culture. As an organisation, we will inform, engage and empower our staff to be climate champions, and to support and challenge themselves, each other, and everyone we work with to create real change.

We'll share learning and celebrate successes along the journey, through clear and consistent internal communications and engagement. We'll make sure everyone knows the part they can play and we'll always be transparent and accountable for all our decisions.

By 2022, we will upskill all our staff through comprehensive, accredited training on climate change and carbon reduction as it relates to their roles, with advanced training on offer for those in specialist roles like engineering.

Sustainability and net zero goals will be linked to individual and organisational performance and we'll recognise contributions and success through our employee rewards programme, including through a new category at our annual internal Environment Agency awards.

We'll put the right structure in place to govern net zero decision-making, reporting and risk management. By 2023, everyone with responsibility for a financial budget will also hold – and report on – a carbon budget.

We'll continue to fine-tune our carbon emission baseline and will be able to apportion it to director and deputy-director level. We are currently developing a new carbon data dashboard tool to show our carbon performance rapidly, accurately and transparently.

During the pandemic our emissions from business travel dropped by 48% and emissions from our buildings dropped by 22%. We'll permanently reduce our business travel by 50% compared to our pre-pandemic baseline - and the emissions from that travel by 70% - by 2030.

We've committed to making our pension scheme net zero by investing in climate solutions and reducing the carbon footprint of our investment portfolio.

We'll use our sustainability credentials to help us attract the best talent and increase equality, diversity and inclusion across the organisation. And when new employees join us, they will be trained right from induction on our net zero ambition and how they can help achieve it.

We don't have all the answers, and we know we won't always get it right. But together, and with your thoughts, ideas and suggestions, we can make a huge difference.

www.gov.uk/government/organisations/environment-agency

General enquiries: 03708 506 506

Incident hotline: 0800 80 70 60

Floodline: 0345 988 1188

On social media: @EnvAgency
or search for Environment Agency on Facebook

Contact us about net zero: EANetZero@environment-agency.gov.uk

Plant in hand photo: sarayut/iStock/Getty Images Plus