

CORSERV

CORMAC

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CARE

# Carbon Reduction Plan

2024/25 Update



A CORNWALL  
COUNCIL COMPANY

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This Carbon Reduction Plan has been developed in accordance with Procurement Policy Note PPN 06/21: *“Taking account of Carbon Reduction Plans in the procurement of major government contracts”*

# About Corserv Solutions




We are a diverse commercial service business owned by Cornwall Council and established to: *“improve the lives of people in our communities”*.

Sectors include:


- Highway and environmental maintenance
- Infrastructure and engineering
- Facilities management
- Vehicle maintenance
- Adult social care



Our published strategic plans for environmental sustainability:

	<b>Sustainability and Social Value Strategy</b> Overarching approach for people, planet, and prosperity
	<b>Carbon Reduction Plan</b> Climate emergency approach
	<b>Nature Recovery Plan</b> Ecological emergency approach





In a world increasingly impacted by climate change, the need to significantly reduce greenhouse gas emissions has never been more critical than it is now.

We understand the need to be transparent about the emissions we produce and the need to minimise adverse impacts associated with our operations.

By outlining strategic initiatives, innovative technologies and collaborative efforts, this Carbon Reduction Plan aims to embrace the challenges and opportunities that lie ahead of us, as we move towards a more sustainable future.

*Stuart Wright*

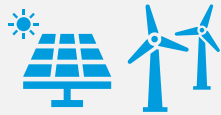
Stuart Wright - Head of Environmental Sustainability

## Recent Highlights



1,659 t CO<sub>2</sub>e  
reduced so far

-13% from our  
2019/20 baseline



100% renewable  
electricity supplier



90% of our waste  
is reused or recycled  
annually



£345,662 of Social Value  
generated so far from our  
carbon reduction work



Smart energy meters  
installed at our highest  
consuming sites



Energy assessment  
independently undertaken



13 biomethane powered vehicles  
currently within our fleet



Industry pioneering  
net zero highway corridor  
project underway



281 employees  
have completed an online  
climate awareness course



Verification  
of carbon accounting  
to international standard



16,955 tonnes  
of lower temperature asphalt  
manufactured internally



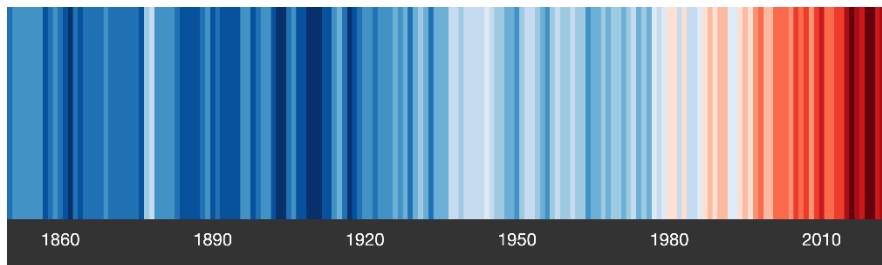
Biochar partnership  
started to explore local  
carbon removal opportunities

Accomplishments between our 2019/20 baseline and the 2023/24 financial year.

# Climate Emergency

The planet's climate is currently warming faster than anything previously experienced in history.

Global average temperatures are increasing year on year, setting a clear trend towards a hotter world with significant consequences. The progression from blue (cooler) to red (warmer) stripes in the graphic below portrays the long-term increase of average global temperature from 1850 to 2023 (left to right).



Warming Stripes by Professor Ed Hawkins MBE

During 2019, Cornwall Council formally declared a 'Climate Emergency', recognising the need for urgent action. We recognise that we have a leading role to play in helping Cornwall Council reach Carbon Neutrality by 2030, while also supporting the UK's broader transition to Net Zero by 2050. As outlined within the international climate agreements, this will give us our best chance of keeping global warming below critical tipping point thresholds for ecosystems, human-health, and wellbeing.

Adverse climate impacts are already being experienced throughout the world and will intensify further without positive societal change:



Extreme Weather



Sea Level Rise



Disease Emergence



Species Extinction



Water Shortages



Increased Wildfires



Food Shortages



Forced Migration

## Our Carbon Challenge


We recognise that many of our business activities have environmental risks associated with them and that we have an obligation to manage these in a responsible manner, minimising adverse impacts and maximising positive opportunities.

If we are to eliminate our emissions, the industry sectors in which we operate does present us with some significant challenges:

- Most of our employees are operational and mobile, providing front-line services (not office based).
- Construction activities typically require specialist heavy machinery and significant quantities of building materials.
- Asphalt manufacturing traditionally involves heating thousands of tonnes of stone and bitumen to over 150°C.
- Our client's decisions can directly impact our pace of change.

These challenges will not stop us from being ambitious and aiming high. By prioritising actions that result in significant reductions and utilising offsets, we can still work towards a 'net' zero ambition.

## The scale and complexity of our carbon reduction challenge is significant:

	2,049 employees throughout the business
	2,369 care service users throughout Cornwall
	4,530 miles of highway network maintained
	1,608 hectares of green spaces maintained
	1,030 vehicles within the company's fleet
	10.8 million business miles travelled
	63,629 tonnes of asphalt manufactured
	76,657 tonnes of operational waste

Figures from the 2023/24 financial year.

# Reduction Targets





















We are committed to achieving:

- **Carbon Neutral Operations by 2030**

This primary target aligns with Cornwall Council's Climate Emergency commitment and meets the required scope of the government's Procurement Policy Note 06/21; *"Taking account of Carbon Reduction Plans in the procurement of major government contracts."*

- **Net Zero by 2050**

This secondary target includes the full activity of our external value chain, including purchased goods and services. We are making positive progress baselining these complex additional scope 3 emissions sources but are not yet in a position to fully address them within this particular version of our Carbon Reduction Plan.

Carbon Neutral Operations by 2030	Scope 1 - Direct Emissions:	
	 Stationary combustion	
	 Mobile combustion	
	 Fugitive emissions	
	 Process emissions	
	Scope 2 - Indirect Emissions:	
	 Purchased electricity	
	Scope 3 - Other Indirect Emissions:	
	 Upstream transportation and distribution	
	 Waste generated in operations	
Net Zero by 2050	 Business travel	
	 Employee commuting (including homeworking)	
	 Downstream transportation and distribution	
	 Purchased goods and services	 Capital goods
	 Fuel and energy related activities	 Upstream leased assets
	 Processing of sold products	 Use of sold products
	 End-of-life treatment of sold products	 Downstream leased assets
	 Franchises	 Investments





## Accounting Methodology

We have adopted robust and recognised methods for collecting and calculating our emissions.

### Reporting Period

Our annual carbon reporting covers the financial year (April to March).

### Accounting Approach

Our emissions data is assessed in accordance with the internationally recognised 'GHG Protocol' and the U.K Government's published 'Greenhouse Gas Reporting: Conversion Factors'.

### Accounting Boundary

We utilise the 'operational control' approach, accounting for the activity emissions that we have the full authority to introduce and implement operating policies over.

### Estimates and Assumptions

Where data is incomplete or unavailable, reasonable estimations derived through calculations are applied in line with guidance. Our data collection processes are continually refined to maximise accuracy.








### Adjustments and Recalculation

To consistently track our reduction progress over time, we may occasionally need to adjust our previously reported emissions to correct for changes to our business structure or accounting methodology.



## Baseline Emissions

2019/20 Financial Year











Scope 1 - Direct Emissions		
	Stationary combustion	2,112.1
	Mobile combustion	5,858.5
	Fugitive emissions	0
	Process emissions	0
Scope 2 - Indirect Emissions		
	Purchased electricity (market-based) <sup>1</sup>	746.2
Scope 3 - Other Indirect Emissions		
	Upstream transportation and distribution	1,326.9
	Waste generated in operations	82.3
	Business travel	518.6
	Employee commuting (including homeworking)	1,935.1
	Downstream transportation and distribution	0
2019/20 Emissions:		12,579.8 t CO <sub>2</sub> e

<sup>1</sup> 2019/20 location-based electricity emissions: are: 746.3 t CO<sub>2</sub>e

<sup>2</sup> 2023/24 location-based electricity emissions are: 556.6 t CO<sub>2</sub>e

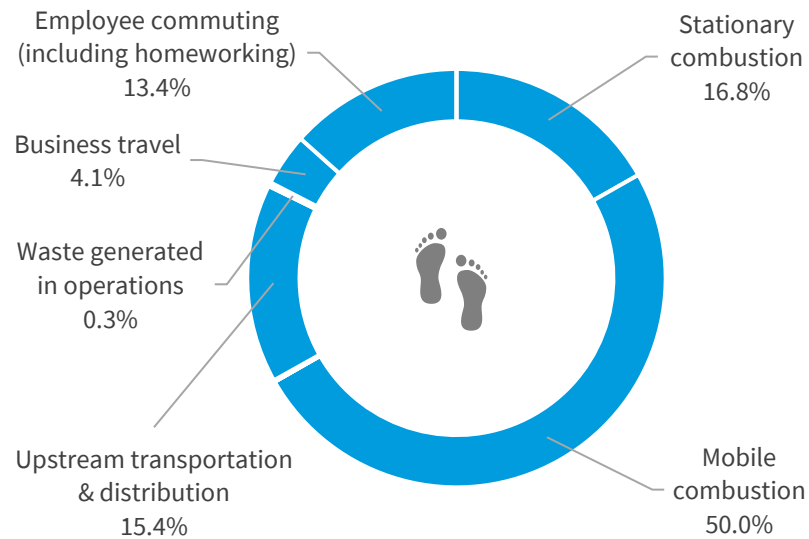
## Current Emissions

2023/24 Financial Year

Scope 1 - Direct Emissions		
	Stationary combustion	1,832.8
	Mobile combustion	5,456.9
	Fugitive emissions	0
	Process emissions	0
Scope 2 - Indirect Emissions		
	Purchased electricity (market-based) <sup>2</sup>	14.1
Scope 3 - Other Indirect Emissions		
	Upstream transportation and distribution	1,679.3
	Waste generated in operations	34.0
	Business travel	442.7
	Employee commuting (including homeworking)	1,460.9
	Downstream transportation and distribution	0
2023/24 Emissions:		10,920.6 t CO <sub>2</sub> e

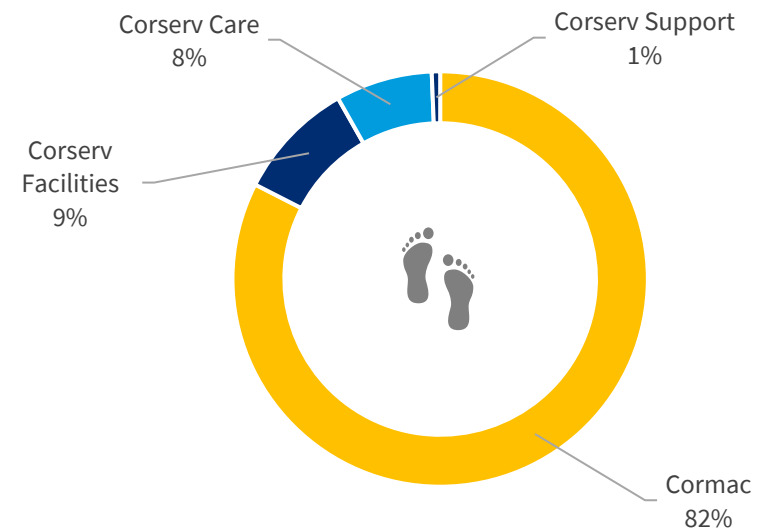
# Emission Sources

## 2023/24 Emissions by Source



Our vehicle fleet (mobile combustion) remains a top priority in our carbon reduction journey, along with decarbonising our energy intensive asphalt manufacturing activities (stationary combustion).

## 2023/24 Emissions by Business Area



While Cormac may dominate the Corserv Solutions Limited figures as the largest business area, many of the challenges faced are shared between all divisions, requiring a collaborative approach.

# Reduction Approach

To reduce emissions across our business, we are aligning our actions with the 'Greenhouse Gas Management Hierarchy' developed by IEMA (Institute of Environmental Management and Assessment).

# IEMA

Transforming the world  
to sustainability

[IEMA - Pathways to Net Zero](#)



## 1. Eliminate - preventing emissions entirely

While this is often challenging for operational businesses, eliminating emissions is the most preferred option because it ensures that no greenhouse gases are released.



## 2. Reduce - minimising existing emissions

When emissions cannot be eliminated, it is often still possible to optimise approaches and drive efficiency, limiting the amount of greenhouse gases released.



## 3. Substitute - switching to an alternative

When emissions cannot be eliminated or reduced, it may be possible to do things differently by adopting alternative energy sources, products, and approaches.



## 4. Compensate - balancing emissions

As a last resort, this balancing act ensures no 'net' emissions. Carbon removal credits can be used to compensate for final unavoidable residual emissions.

# Climate Action

Using our baseline data to identify our greatest opportunities, we already have a wide variety of carbon reduction initiatives underway which can be categorised into the following five strategic themes:



## Vehicles and Machinery

Transitioning to low emission alternatives



## Energy Management

Using renewables and maximising efficiency



## Materials and Waste

Adopting alternative materials and reducing waste



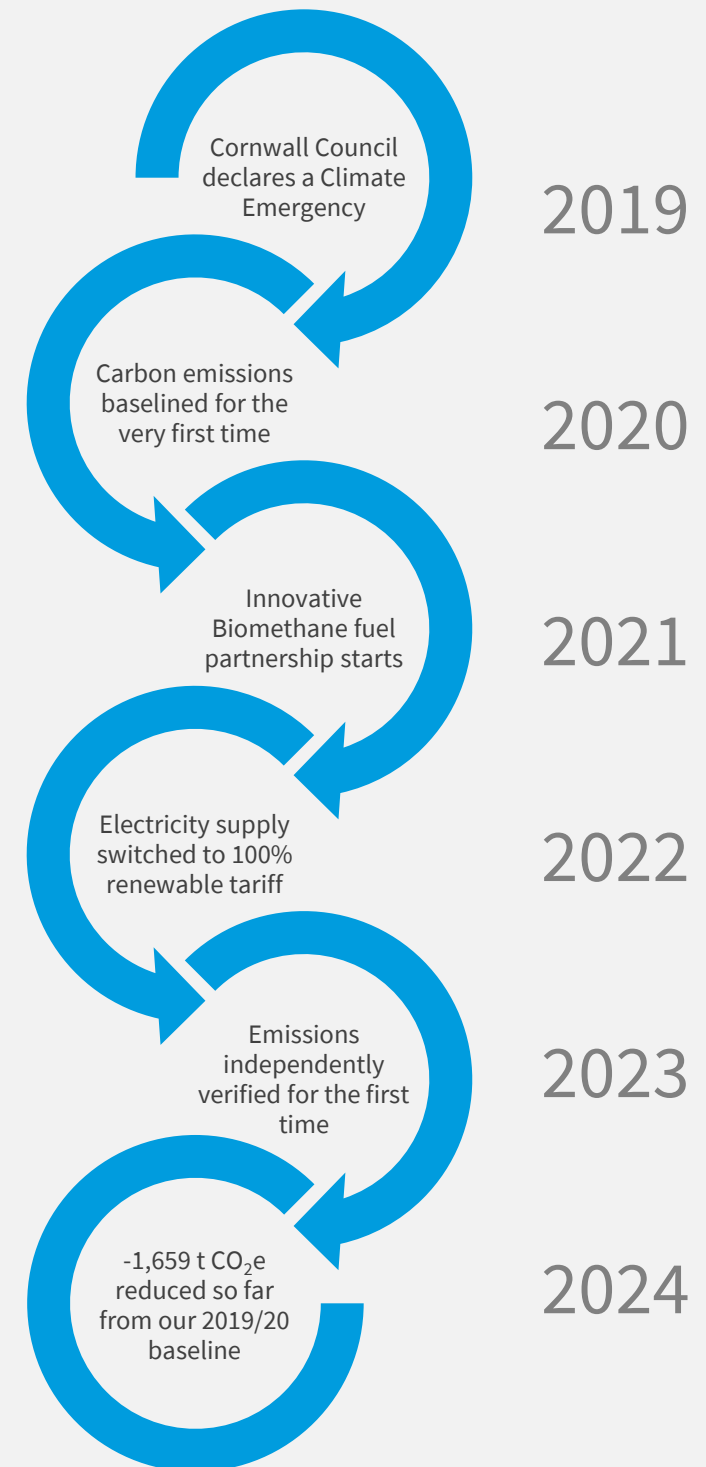
## Carbon Removal

Balancing residual emissions via nature-based solutions



## Awareness and Engagement

Promoting stakeholder understanding and collaboration





## Vehicles and Machinery

Transitioning to low emission alternatives

Decarbonising our vehicle fleet and other types of mobile combustion is a top priority and will require the adoption of alternative technologies and fuels.

### Alternative Fleet Strategy

We have been collaborating closely with specialist consultants to develop a comprehensive replacement strategy for our vehicle fleet. Where battery electric alternatives are not yet financially or technologically viable, we plan to utilise alternative low carbon fuels.

### Hydrotreated Vegetable Oil (HVO)

This alternative fuel can offer emission reductions of up to 90% (depending on the source and feedstock). HVO is produced from processing vegetable oil with hydrogen and has a similar chemical structure to conventional fossil diesel, making it a 'drop-in' fuel that can be used in many existing engines without modifications or conversions. It additionally offers increased performance and combustion efficiency compared to regular diesel, leading to smoother engine operation and potentially longer engine life with reduced maintenance.

### Electric Equipment

Where possible, we are currently transitioning away from petrol powered handheld equipment to battery electric equivalents. In addition to reducing emissions, this has the added benefit of significantly reducing noise and vibrations for people and wildlife.



New battery-powered brush-cutters and power stations for Cormac's environmental maintenance teams to clear overgrown coastal footpaths.



## Biomethane Fuel Partnership

We have partnered with local company Bennamann to test a renewable zero carbon fuel that is captured and refined from dairy farm slurry waste.

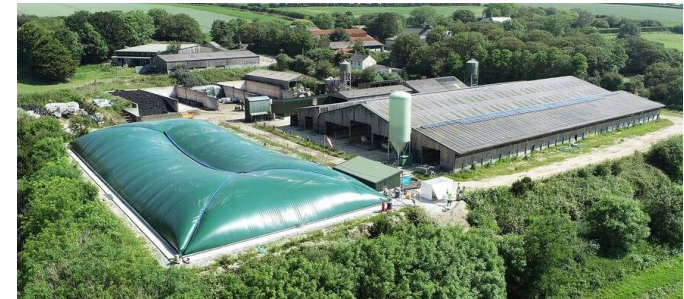
Methane is typically a very harmful greenhouse gas that contributes towards climate change. However, by capturing it before it reaches the atmosphere, it can be used as a powerful clean fuel.

Our unique and innovative pilot helped demonstrate that there are viable sustainable energy options for large highway maintenance vehicles that are traditionally powered by fossil fuels.

Following the success of our initial trials, we have recently purchased a further 12 gas powered vehicles and are about to start installing one of the UK's first biomethane vehicle fuelling stations.



Every tonne of fugitive methane captured from farms is equivalent to saving 28 to 36 tonnes of carbon dioxide (CO<sub>2</sub>) when looking at its impact over 100 years.





## Energy Management

Using renewables and maximising efficiency

Effective energy management practices will help us to maximise our operational efficiency, simultaneously reducing environmental impacts and operating costs.

### Smart Meter Installation

We have invested in comprehensive real-time energy monitoring systems for our highest consuming sites to gain detailed insights into energy usage patterns, identify inefficiencies, and target action.

### Independent Energy Assessment

We have recently completed our first specialist independent energy savings assessment, which will help to identify further cost-effective efficiency measures and associated carbon reduction opportunities.

### Energy Savings Action Plan

Utilising insights from our energy monitoring system and findings from our independent energy assessment, we plan to develop a comprehensive action plan and pursue identified saving opportunities where payback on initial investment can be achieved within four years. This additionally includes phasing out kerosene oil heating systems within our buildings, in favour of modern electric alternatives.

### Onsite Renewables

We plan to explore onsite renewable power generation opportunities, such as solar combined with battery banks. This will reduce our energy costs over time and additionally our reliance on external energy providers, enhancing our energy security by providing a reliable and sustainable power supply directly where the consumption occurs.

### Effective Programming

Our 'Total Mobile' system supports a local area-based delivery approach to our services, ensuring efficient placement of staff to minimise and optimise our operational business travel.

### Vehicle Telematics

Our comprehensive fleet tracking system 'Masternaut' enables us monitor and act on real-time information associated with routes, speed, driver behaviour, idling and fuel consumption. We have already received 'Gold' fleet status for achieving a greater than 5% year on year improvement in miles per gallon (MPG).



## Renewable Electricity Supply

We have switched our electricity to a 100% renewable supplier, eliminating emissions under the market-based accounting approach.

Renewable Energy Guarantee of Origin (REGO) certificates ensure the electricity units that we consume from the national grid can be matched with those produced from renewable and clean sources, such as solar farms or wind turbines.

Our current 3-year and 2.6 million kilowatt-hour contracts, secure clean power for sixteen of our fixed operating sites:



x10 Depots, Workshops and Offices



x2 Waste Recycling Sites



x2 Plant Growing Nurseries



x1 Aggregate Quarry



x1 Dementia Care Home



During 2023/24, this simple action has saved 494 t CO<sub>2</sub>e under the market-based accounting approach.



Renewable Energy Guarantee of Origin (REGO) certificate for Corserv Care's 'Trefula House' Dementia Care Home.



## Materials and Waste

Adopting alternative materials and reducing waste

We are committed to exploring alternative low carbon materials and embedding circular economy principles into all our operational activities.

### PPE Recycling Scheme

Manufacturing one tonne of Personal Protective Equipment (PPE) clothing can result in twenty-two tonnes of carbon. Options for purchasing alternative sustainable textiles are currently limited and to keep our people safe, we cannot reduce the amount purchased. We can however try to significantly expand the lifespan of existing materials through unique local partnerships that reuse and recycle our end-of-life clothing, diverting it from incineration and landfill.

### Alternative Asphalt Production

Cormac is embracing new approaches to build and repair roads. Warm Mix Asphalt is produced and applied at a temperature up to 50 °C lower than an equivalent traditional asphalt, therefore consuming less energy to manufacture at our quarry, reducing costs and greenhouse gas emissions. Warm mix asphalt does not compromise on the performance or lifespan of road surfaces and has the added benefit of enabling maintenance teams to open roads sooner, minimising disruption to traffic.

### Experimental Highway Maintenance

ADEPT Live Labs 2 is a three-year, UK-wide £30 million programme funded by the Department for Transport that aims to decarbonise local highway networks. The 'Net Zero Roads - Wessex Live Lab' part of this programme will pioneer nine experimental low carbon highway corridors within Cornwall, Somerset, and Hampshire.

These highway corridors will function as a test bed for innovation, circular solutions, and new ways of thinking, utilising new alternative methods and materials to significantly decarbonise maintenance across the whole asset lifecycle. By openly sharing all knowledge gained and lesson learnt, the information collected will benefit the whole highway sector, supporting effective future decision-making.





## Construction Waste Recycling

We operate four internal recycling facilities, where excavated waste from our highway maintenance activities is processed into high quality, affordable and sustainable secondary aggregate products.

By transforming waste back into a valuable resource and keeping existing materials in use for longer, we are supporting a regional circular economy for construction materials and have been able to reduce demand for the extraction, processing and transportation of new construction materials and their associated emissions.

Recycled aggregates can have up to 59% lower emissions per tonne than primary aggregates. Concrete rubble wastes can be reused as a construction fill or foundational material, while Reclaimed Asphalt Pavement (RAP) can be fed back into asphalt manufacturing processes, reducing the amount of new stone and bitumen required.



During 2023/24, we internally recycled 62,903 tonnes of construction waste (comparable to 6 Eiffel Towers in weight) saving an estimated 570 tonnes of CO<sub>2</sub>e.



Mobile aggregate crushing and screening unit processing asphalt waste generated from maintaining Cornwall's highway network.





## Carbon Removal

Balancing residual emissions via nature-based solutions

This balancing act will help to ensure no ‘net’ carbon emissions from our business activities.

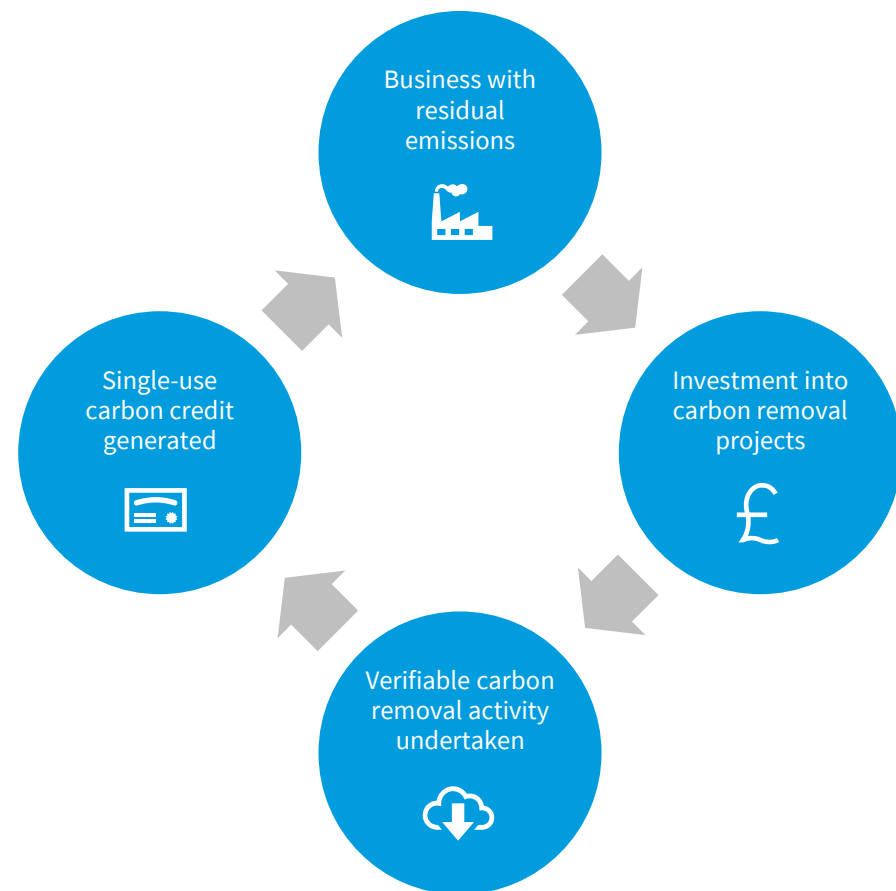
Many of the leading products and technologies currently available have ‘ultra-low’ rather than zero emissions. As outlined within IEMA’s greenhouse gas management hierarchy, carbon credits can therefore act as a useful tool, compensating for an organisation’s final unavoidable residual emissions.

### Forest for Cornwall

We are a key partner in delivering Cornwall Council’s ‘Forest for Cornwall’ project. This is an ambitious tree planting project in response to both the climate and ecological emergencies. When complete, it will add 8,000 hectares of new tree cover by 2030, which is equivalent to 2% of Cornwall’s total land area.

### Academic Support

We think it is important to keep any carbon removal investments local, which is why we are currently exploring the high-quality nature-based opportunities available within the southwest region with support from Plymouth University.



## Biochar Pilot Partnership

We have recently partnered with local start-up company Restord to explore how our forestry waste could sequester carbon and improve soil quality.

Biochar is a carbon-rich, charcoal-like material made by heating organic material at over 500°C in an oxygen deprived environment through a process known as Pyrolysis.

Traditional decomposition and burning of forestry waste releases greenhouse gases. However, transforming this biomass into biochar can lock away carbon for over one thousand years while also improving soil health through its beneficial microbial, nutrient, and water-retention properties.

We are looking forward to working closely with Restord to explore how organic wastes generated from our operational activities can be transformed into this valuable material and utilised locally.



The initial pilot aims to convert up to 200t of biomass into 40t of biochar, sequestering around 100t CO<sub>2</sub>e – this is comparable to the annual emissions of 16 UK citizens.



# Restord





## Awareness and Engagement

Promoting stakeholder understanding and collaboration

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We want to develop a net zero organisational mindset and business culture, ensuring all people-led activity is delivered in line with our carbon reduction ambitions.

We recognise that our employees and stakeholders are crucial to the success of our carbon reduction commitments. We will only be able to deliver this plan if everyone understands why we need to act, shares our ambition to do things differently and has the information, support, and ability to make those changes.

### Sustainability Committee

We have established a Carbon Reduction, Environment and Sustainability Taskforce (CREST) to help drive meaningful action. By bringing together 'sustainability champions' across the business on a regular basis, we can promote effective collaboration, encourage innovation, and drive positive organisational transformation.



### Climate Training

Building upon previous certified carbon training for 16 key managers, Cornwall Council's 'climate change and carbon literacy' online training course has been made available to all our office-based staff, ensuring even more of our employees have the knowledge and skills required to help tackle the climate emergency.

### Communications

We will regularly share communications on our carbon reduction progress, highlighting the specific actions and decisions employees and other stakeholders can take to have a positive environmental impact.

### Supply Chain

All our key supply chain partners will be made aware of our Carbon Reduction Plan. We will continue to embed exemplary environmental standards into our procurement criteria and will incrementally introduce carbon reduction targets into our key contracts.

### Incentives and Recognition

We understand that change can be hard. We want to reinforce proactive action and carbon-conscious behaviours by reviewing employee incentive schemes that reward and encourage positive climate action.

# Reduction Forecast

Using our reduction estimates, we can attempt to model the future trajectory of our operational emissions.

While our current actions will provide a significant reduction, we plan to do more. Additional initiatives and innovative technologies will allow us to aim for an even greater reduction, minimising the carbon removal compensation required.



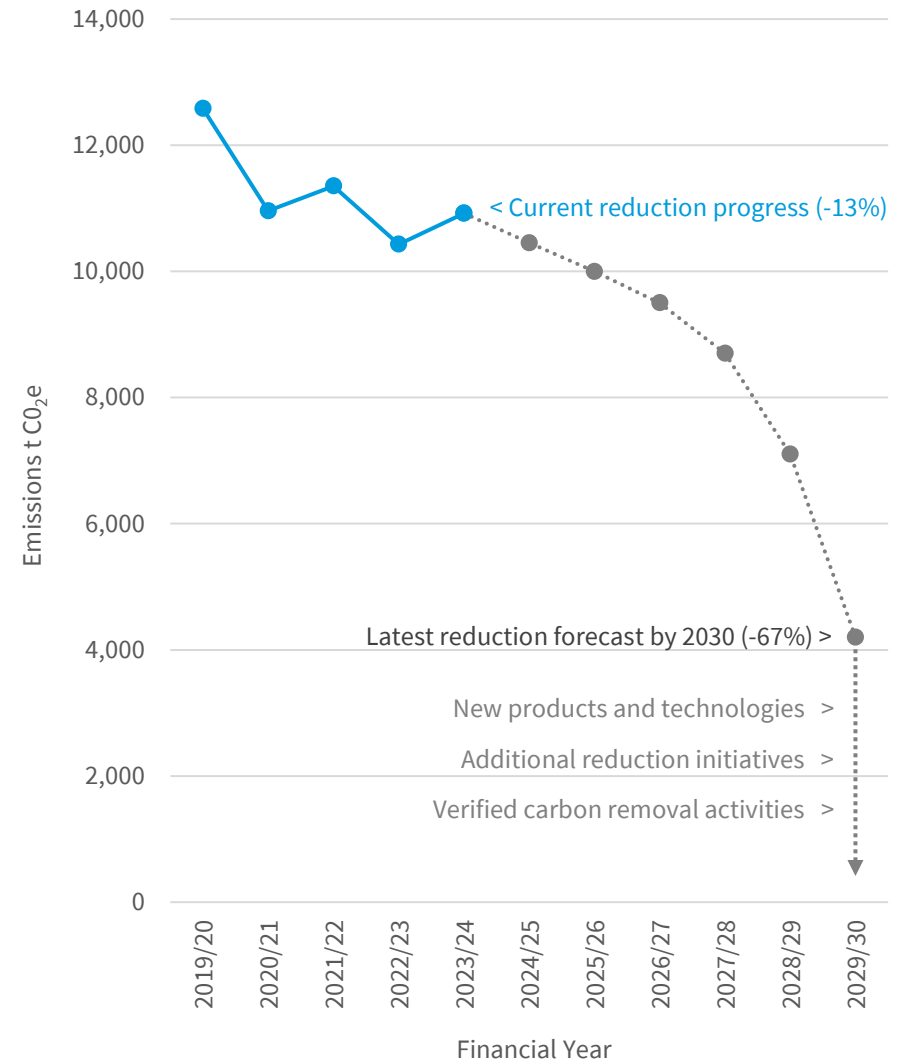
Current reduction progress:  
-13% | -1,659 t CO<sub>2</sub>e  
2019/20 to 2023/24



Latest reduction forecast by 2030:  
-67% | -8,383 t CO<sub>2</sub>e



Estimated carbon removal required:  
-33% | -4,196 t CO<sub>2</sub>e



# Governance

This Carbon Reduction Plan has been approved by our board of directors and will be regularly reviewed, considering our challenges, performance, and new emerging opportunities.

To ensure this plan remains relevant and ambitious, we have a system of governance and accountability, ensuring climate change and carbon reduction is discussed at a wide range of meetings and embedded into our key business decision-making.

## High Impact Leadership

Our expectations for change need to be clearly communicated from the top. All our directors and managers are expected to visibly lead by example and are responsible for ensuring all teams and business areas make meaningful contributions to the delivery of this strategic plan.

## All Employees

Carbon reduction will not just be for specialist groups or roles, we will ensure there is always fair consultation and representation when developing our strategic plans. All our employees are key to our success and will be encouraged and empowered to do what they can in their own personal role, identifying opportunities, pursuing action, and supporting others with implementing positive change.

## Independent Verification

In addition to our comprehensive ISO 14001 certified Environmental Management System, we have recently successfully completed an independent assessment of our carbon accounting practices in accordance with international standard ISO 14064. This will help to us to further refine complex accounting methodologies and provides external assurance to our key stakeholders.



## Internal Expertise

We currently have three Chartered Environmentalists (CEnv) within the business, overseeing organisational performance and providing specialist technical support. This is considered the industry gold standard for environmental sustainability professionals and helps to ensure all our carbon reduction work remains 'SMART' (Specific, Measurable, Achievable, Relevant and Time-Bound).





# Definitions

Descriptions of key carbon reduction terminology used within this document:

## Carbon Dioxide Equivalent (CO<sub>2</sub>e):

Standard unit for expressing the emissions of various greenhouse gases based on their global warming potential relative to carbon dioxide.

## Climate Emergency:

The need for immediate action to mitigate and adapt to the adverse effects of anthropogenic (human-caused) climate change.

## Carbon Neutrality:

Balancing the amount of carbon dioxide emitted with an equivalent amount offset or removed, resulting in zero net carbon emissions.

## Greenhouse Gas Emissions:

Atmospheric gases, such as carbon dioxide, methane, and water vapor, that trap heat from the sun, contributing to global warming.

## Market/Location Based Accounting:

Market-based electricity accounting reflects emissions based on electricity supplier contracts, while location-based accounting reflects emissions from the average grid mix where the consumption occurs.

## Net Zero:

Reducing all greenhouse gas emissions to as close to zero as possible and balancing any remaining emissions with equivalent removal.

## Renewable Energy:

Energy derived from natural sources that are continuously replenished, offering reduced greenhouse gas emissions.

## Scope 1:

Direct emissions from the activities of an organisation under their operational control, including fuel combustion.

## Scope 2:

Emissions created during the production of electricity that is eventually purchased and used by an organisation.

## Scope 3:

All other indirect emissions from the activities of an organisation, occurring from sources that they do not own or fully control.

# Declaration

This Carbon Reduction Plan has been completed in accordance with PPN 06/21 and associated guidance and reporting standard for Carbon Reduction Plans.

Emissions have been reported and recorded in accordance with the published reporting standard for Carbon Reduction Plans and the GHG Reporting Protocol corporate standard<sup>1</sup> and uses the appropriate Government emission conversion factors for greenhouse gas company reporting<sup>2</sup>.

Scope 1 and Scope 2 emissions have been reported in accordance with SECR requirements, and the required subset of Scope 3 emissions have been reported in accordance with the published reporting standard for Carbon Reduction Plans and the Corporate Value Chain (Scope 3) Standard<sup>3</sup>.

This Carbon Reduction Plan has been reviewed and approved by our board of directors.



Stuart Wright - Head of Environmental Sustainability

<sup>1</sup> <https://ghgprotocol.org/corporate-standard>

<sup>2</sup> <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting>

<sup>3</sup> <https://ghgprotocol.org/standards/scope-3-standard>

# CORSERV

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