



Carbon Offsetting, Neutrality, & Tree Planting: An Essential Overview

9th October 2025

Dr Craig Jones & Liam Seprini

What We'll Cover

- Introduction
- What is a carbon offset?
- How do carbon offset credits work?
- What are the wider benefits of offset projects?
- What is the best practice?
- How can they support your wider sustainability goals?
- Can they be used to support carbon neutrality statements?
- Are there any standards to support carbon neutrality statements?
- Tree planting
- Q&A

Speakers



Dr Craig Jones
Managing Director

20 years of experience in sustainability assessments



Liam Seprini
Business & Sustainability Coordinator

*Supports the delivery & communication of
environmental initiatives*

Who Are Circular Ecology?



- Environmental consultancy, founded in 2013
- Offering a range of environmental services:
 - Carbon Offsetting and Tree Planting
 - Organisational Carbon Footprints: Scopes 1, 2, 3
 - Product Carbon Footprints (PCFs)
 - Whole Life Embodied Carbon Assessments for Construction Projects
 - Life Cycle Assessments (LCA)
 - Net Zero Carbon Strategy
 - Carbon Footprint Database (Library) Development
 - Verification and Peer Review
 - Online eLearning Training Courses



What's Our Mission?

"Making a difference together- Towards a more sustainable future"



Impactful



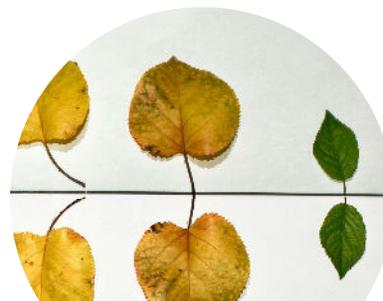
Community



Quality



Ethical



Continuous Improvement



Scaling Carbon Reductions Initiative (SCRI)

Introduction to our **Scaling Carbon Reductions Initiative (SCRI)**



Key to our purpose **to release impactful work, to enable scalable carbon reductions**



We will be diverting a specified amount from some of our sales into the SCRI



Funds will be used to **develop free carbon footprint data, tools and resources**



Publication of an annual impact report disclosing the amount raised and use of funds

<https://circularecology.com/scaling-carbon-reductions-initiative.html>

Scaling Carbon Reductions Initiative (SCRI)

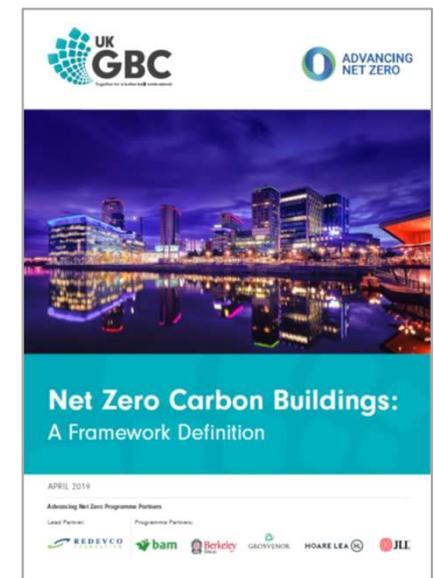
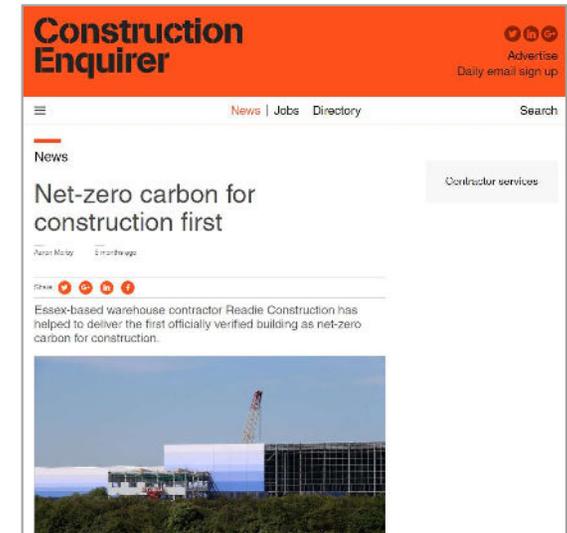
Products that help contribute to our **Scaling Carbon Reductions Initiative (SCRI)**:

- **eLearning Training Courses:** 67% of ex-VAT sales diverted until Dec 25
 - **An Introduction to Carbon Footprinting** *[Introductory]*
 - **An Introduction to Life Cycle Assessment (LCA)** *[Introductory]*
 - **An Introduction to Embodied Carbon in Construction** *[Introductory-Intermediate]*
 - **Sustainability 101** *[Coming 2026...]*
 - <https://circularecology.com/training.html>
- **Carbon Offset Credits:** Currently 50p ex-VAT per tCO₂e offset on our online store
 - <https://circularecology.com/product-category/carbon-offset>
- **Tree Planting**
 - <https://circularecology.com/tree-planting.html>
 - 25% diverted (exchange rate dependent)



World's First UKGBC Net Zero Carbon Building

- **GLP Magnitude Net Zero Carbon Construction**
 - **Logistics centre (29,183 m2 GIA)**
 - **First building verified to UKGBC as Net Zero Construction (Embodied carbon)**
- **Circular Ecology**
 - Measured the **embodied carbon**
 - Advised on **carbon reduction strategy**
 - Took through the **Net Zero Carbon verification process**
 - Provided the **carbon offsets (11,735 tCO₂e)**
- Learn more:
<https://www.constructionenquirer.com/2020/08/25/net-zero-carbon-for-construction-first/>



UK's First Carbon Neutral Road



The Extra Green Mile – Aggregate Industries Completes UK's First Carbon Neutral Pavement Scheme

Aggregate Industries > News and resources > Press releases > The Extra Green Mile – Aggregate Industries Completes UK's First Carbon Neutral Pavement Scheme

The contracting division of Aggregate Industries has made history by completing the UK's first carbon neutral England's A590 M6 J36 to Brettargh Holt resurfacing project.

Now complete, the road improvement project included full depth resurfacing of the dual carriageway between the M6 junction 36 and Brettargh Holt roundabout, along with the roundabout at junction 36. This forms part of the estimated £8million A590 scheme designed with a low carbon strategy to ensure safer, smoother journeys for road users on this vital route in Southern Cumbria.

Heavily trafficked, the surface had come to the end of its life with dangerous potholes and uneven surfacing posing a real safety risk for drivers. Hence, Highways England's (HE) objective was to ensure the new road was constructed quickly, safely and with minimum disruption to customers and the local road network.



CONSTRUCTION europe

THE MAGAZINE FOR EUROPE'S CONSTRUCTION INDUSTRY

HOME NEWS LONGER READS VIDEOS & PODCASTS ISSUE ARCHIVE CONSTRUCTION TECHNOLOGY SUBSCRIBE MORE

First carbon neutral roadworks completed in UK

By Leila Steed | 26 January 2021
2 min read

Aggregates Industries recycles cold asphalt off site, to lay 1,000 tonnes of road per night



The UK's first carbon neutral pavement scheme used cold recycled asphalt mixed SuperLow asphalt, produced off site, to make a carbon neutral paving surface

The Contracting Services division of Aggregates Industries (AI) has completed work on the UK's first carbon neutral pavement scheme.

AI worked with principal contractor AE Yates and design company AMEY to deliver the A590 M6 J36 scheme for Highways England - the government company responsible for the operation, maintenance and improvement of the country's motorways and major A roads.

The project saw AI carry out resurfacing works to the A590 road and the roundabout at junction 36 on the M6 motorway to Brettargh Holt, which is located north of the city of Manchester.

AI removed the top 32cm (12.5in) of the existing pavement surface and used it to produce an ex situ cold recycled asphalt. This was then mixed with the

Most Read

 **Electric crawler cranes new from Liebherr**

 **Hyundai Heavy closes in on Doosan Infracore acquisition**

 **Top 10 European construction companies 2019**

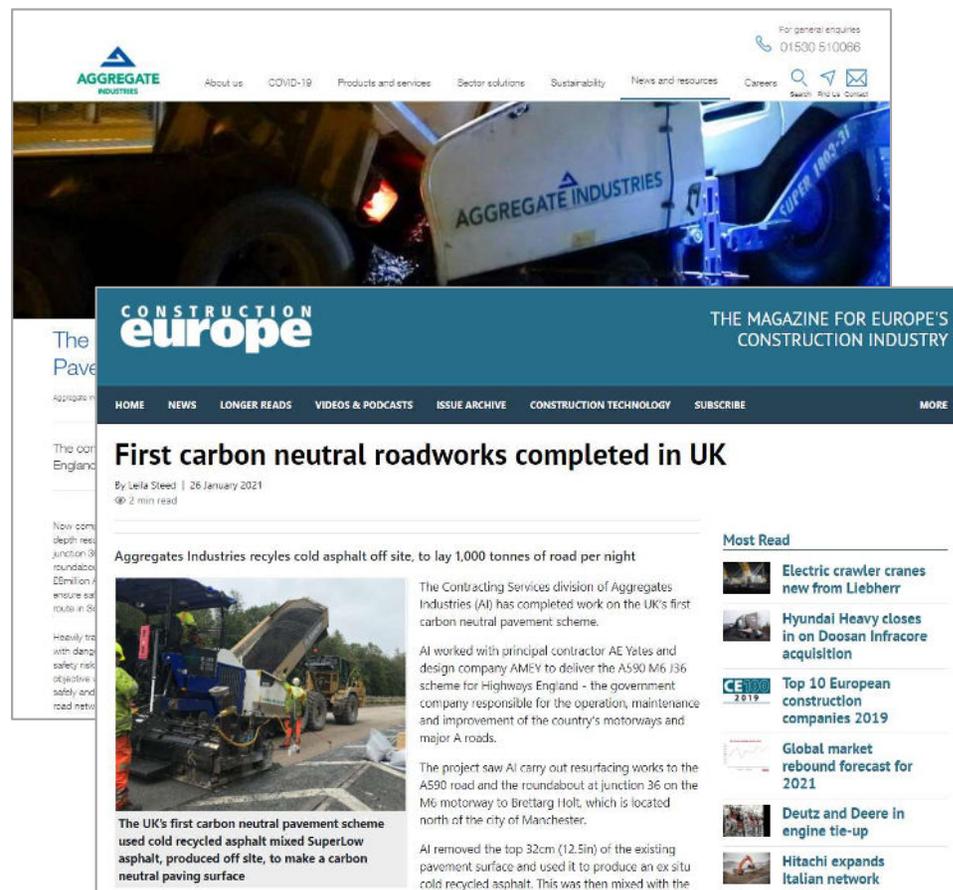
 **Global market rebound forecast for 2021**

 **Deutz and Deere in engine tie-up**

 **Hitachi expands Italian network**

UK's First Carbon Neutral Road

- **UK's First Carbon Neutral Road**
 - Circular Ecology provides carbon offsets to **Aggregate Industries**
 - Including for Highways England's A590 M6 J36 to Brettarg Holt resurfacing project
 - **First UK carbon-neutral road**
 - **43% lower embodied carbon**
- Learn more:
<https://www.aggregate.com/news-and-resources/press-releases/first-carbon-neutral-pavement-scheme>



The screenshot shows a news article from Construction Europe magazine. The article is titled "First carbon neutral roadworks completed in UK" and is dated 26 January 2021. The article describes how Aggregate Industries (AI) has completed work on the UK's first carbon neutral pavement scheme. It mentions that AI worked with principal contractor AE Yates and design company AMEY to deliver the A590 M6 J36 scheme for Highways England. The project saw AI carry out resurfacing works to the A590 road and the roundabout at junction 36 on the M6 motorway to Brettarg Holt, which is located north of the city of Manchester. The article also states that AI removed the top 32cm (12.5in) of the existing pavement surface and used it to produce an ex situ cold recycled asphalt. This was then mixed with the

Aggregate Industries logo is visible in the top left corner of the article. The article is part of a collection of news items, with a "Most Read" section on the right side of the page. The "Most Read" section includes items such as "Electric crawler cranes new from Liebherr", "Hyundai Heavy closes in on Doosan Infracore acquisition", "Top 10 European construction companies 2019", "Global market rebound forecast for 2021", "Deutz and Deere in engine tie-up", and "Hitachi expands Italian network".



Introduction to Carbon Offsetting

Dr Craig Jones

What is a Carbon Offset?

- Carbon offsetting is a useful mechanism to compensate for unavoidable **greenhouse gas (GHG) emissions**
- They work by **funding carbon emission reductions** occurring elsewhere
- Carbon offset credits are the **currency** (commodities) of carbon offsetting

1 carbon offset credit
=
An emission reduction of 1 tCO₂e

How Do Carbon Offset Credits Work?

- When someone wants to offset their emissions, they need to buy carbon offset credits
- **1 carbon offset credit = 1 tCO₂e**
- 1 carbon credit is the minimum volume (no part credits)

If someone wants to offset an annual footprint of 9.2 tCO₂e, they need to offset 10 tCO₂e to cover these emissions

Carbon Offset Verification Schemes

- It's important to use **verified** carbon offset credit schemes
- Companies can't just estimate or calculate carbon emissions from reduction activities and claim it as a carbon offset
- There are several **recognised carbon offset verification & certification** schemes:



Gold Standard®



How Do Carbon Offset Credits Work?

- Carbon offset verification & certification schemes **issue carbon offset credits for specific projects**
- Projects around the world apply to the carbon offset schemes, to have their **carbon emission reductions verified**
- Once the verification is complete, the offset scheme issues carbon offset credits for this project
 - e.g., **1 tCO₂e, Clean Cookstove Project, Kenya, 2023 vintage**
- Offset schemes have **carbon offset registries** to track and trace offsets

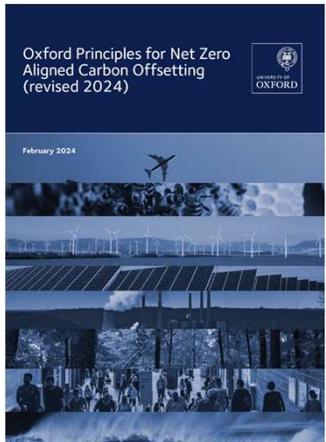
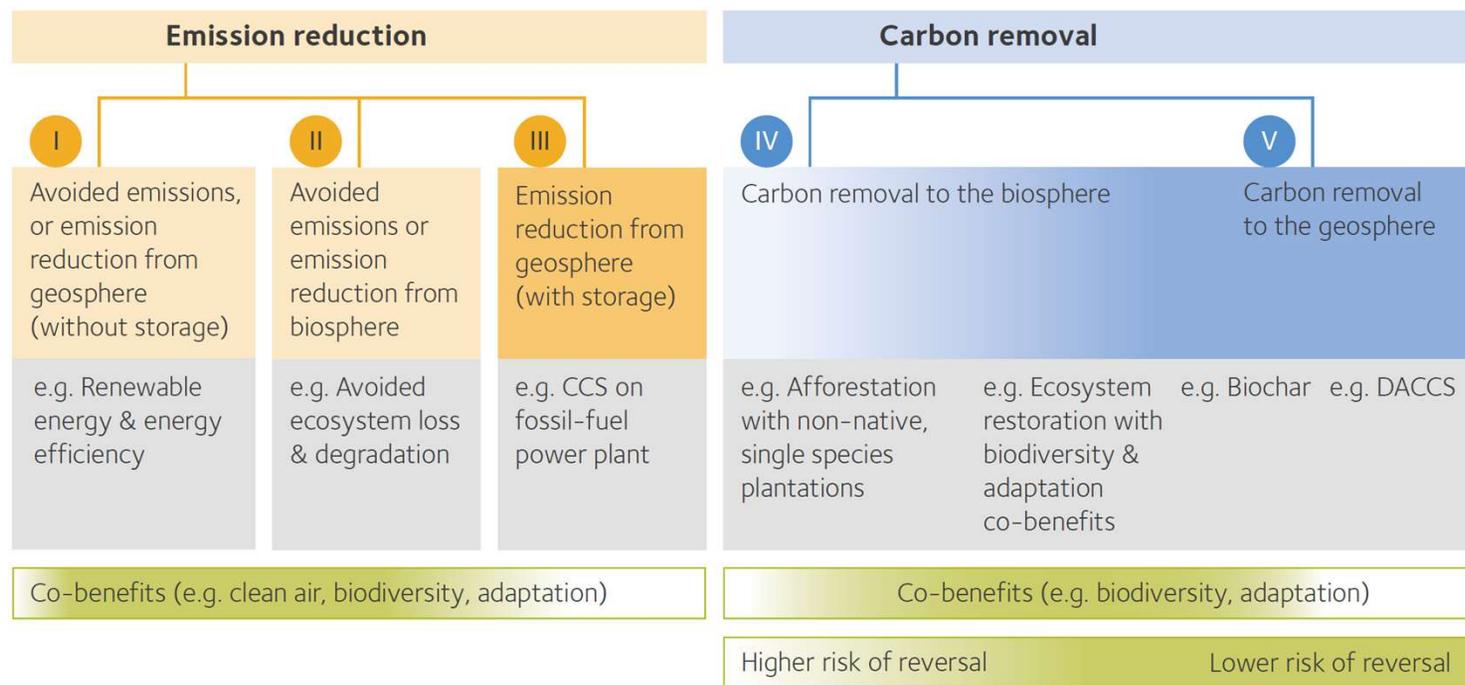


Traceability

- Each carbon offset scheme has its own **carbon offset registry**
- These are **secure platforms that store all the details of carbon offset credits**
- Carbon offset credits are a tradable (virtual) commodity
- A carbon credit has a digital serial number to identify it
- **Carbon offset credits are retired when “consumed”**
- Once retired, they can no longer be traded or used for any other purpose
- **Carbon offsets are retired on behalf of a beneficiary and a purpose**
 - e.g., Company XYZ, organisational carbon footprint 2024

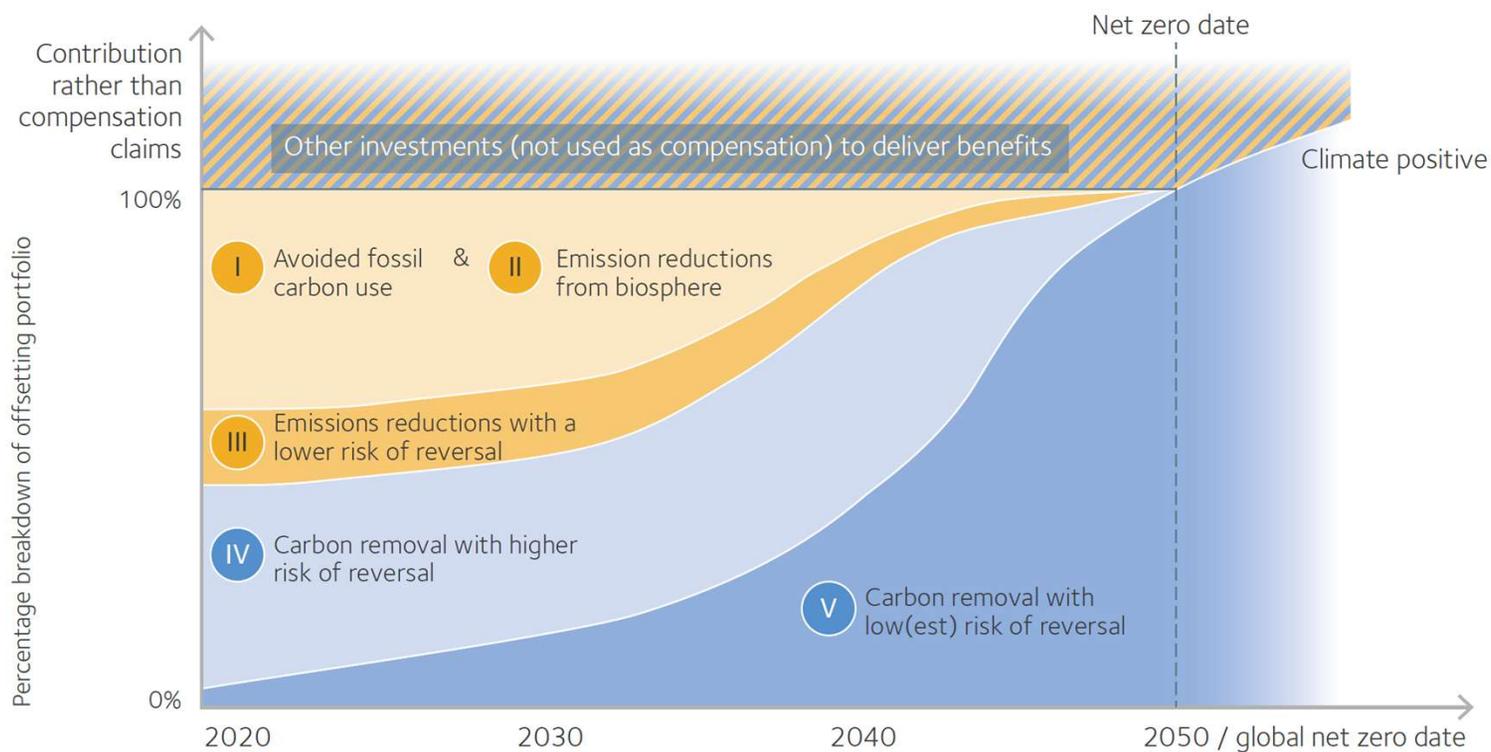
Carbon Offsetting: Best Practice

- University of Oxford released *Principles for Carbon Offsetting* in 2020
 - Updated 2024
- Two categories of emissions:



Carbon Offsetting: Best Practice

- Over time, it's expected to move to carbon removal offsets....





Our Approach

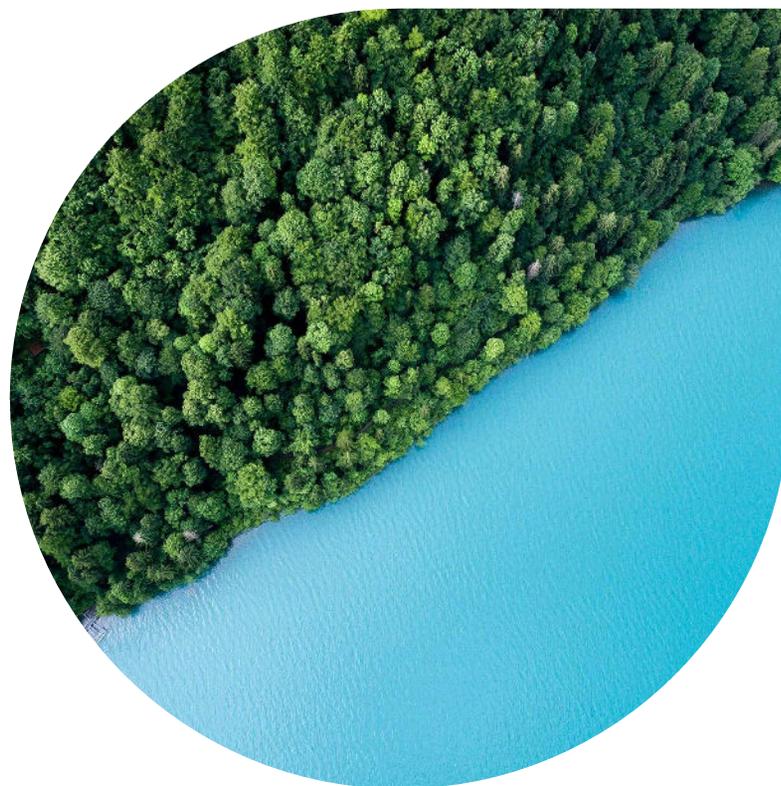
Carbon Offsetting

- **Verified carbon offsets** to businesses and consumers
- Focusing on the **wider benefits** of carbon offsets
- From **credible schemes**:
 - *Gold Standard*
 - *Verified Carbon Standard (VCS)*
 - *Plan Vivo*
- We do not use the *UN Clean Development Mechanism (CDM)* for business
- All offsets are retired on official registries
- We provide offsets for:
 - **Carbon Neutrality**
 - **Net Zero Carbon Buildings**



Beyond Carbon Offsetting

- Our approach was developed to provide **more** than just carbon offsets
- Buddied with the carbon offsets:
 - **Up to 4 trees planted per 1 tCO₂e**
 - In addition to the carbon offset
 - **Rounding off the environmental story**, beyond carbon offsetting
 - Creating wider socio-economic & environmental benefits
- We maintain **large networks**
 - 18,000+ Newsletter Subscribers
 - 21,000+ LinkedIn Followers





Creating Socio-Economic & Environmental Value from Carbon Offsets

UN Sustainable Development Goals

- Carbon offsets now align with benefits against the **UN Sustainable Development Goals**



The Wider Benefits of Offsetting

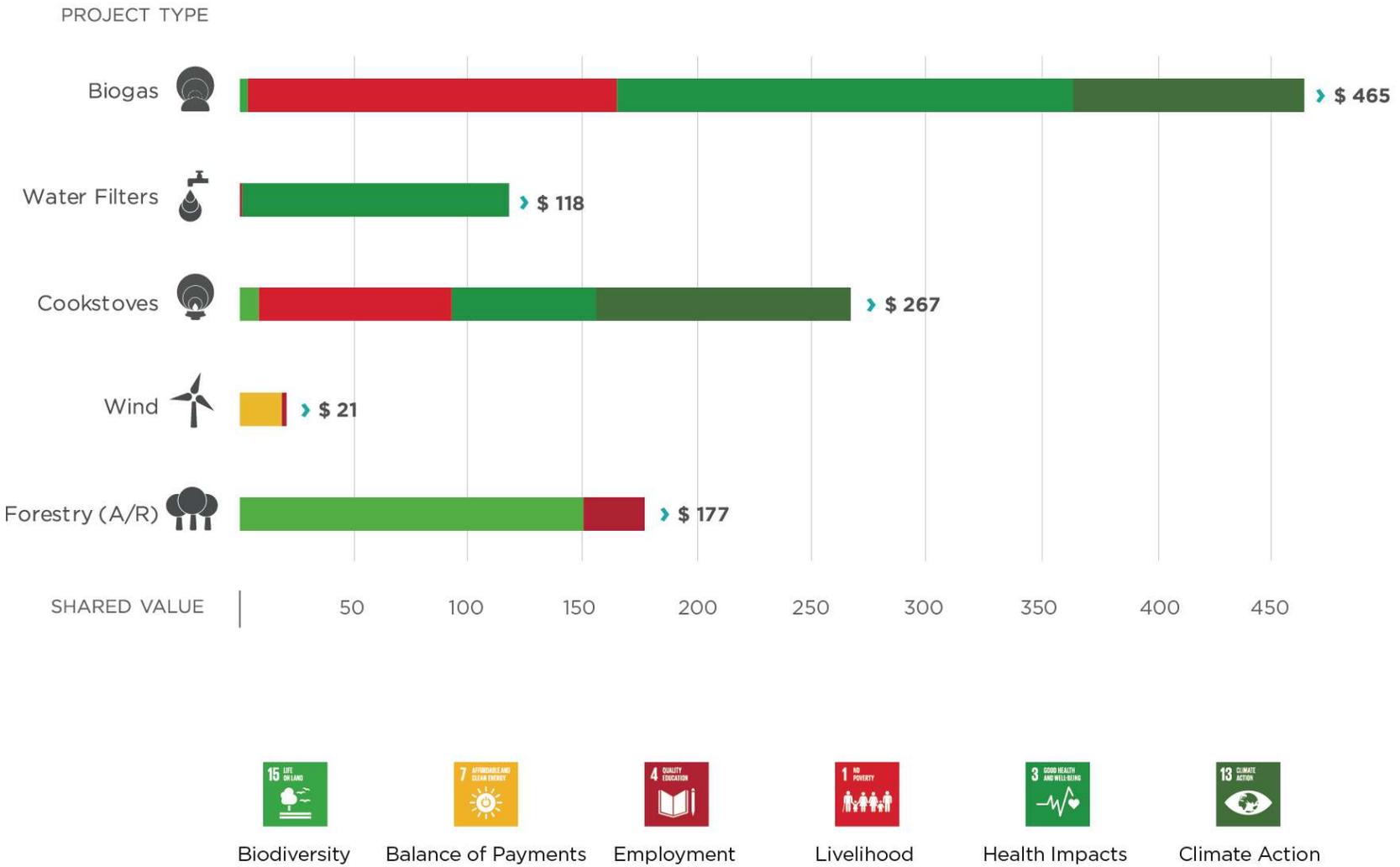
- There are many **wider environmental, social, economic & environmental benefits** of carbon offset projects
- These can paint a **positive narrative**, to balance out the perception of using carbon offset credits
- *The Gold Standard* have estimated the **wider socio-economic-environmental benefits** of their offsets, aligned with the **UN Sustainable Development Goals...**

Gold Standard[®]

Climate Security & Sustainable Development



The Wider Benefits of Offsetting

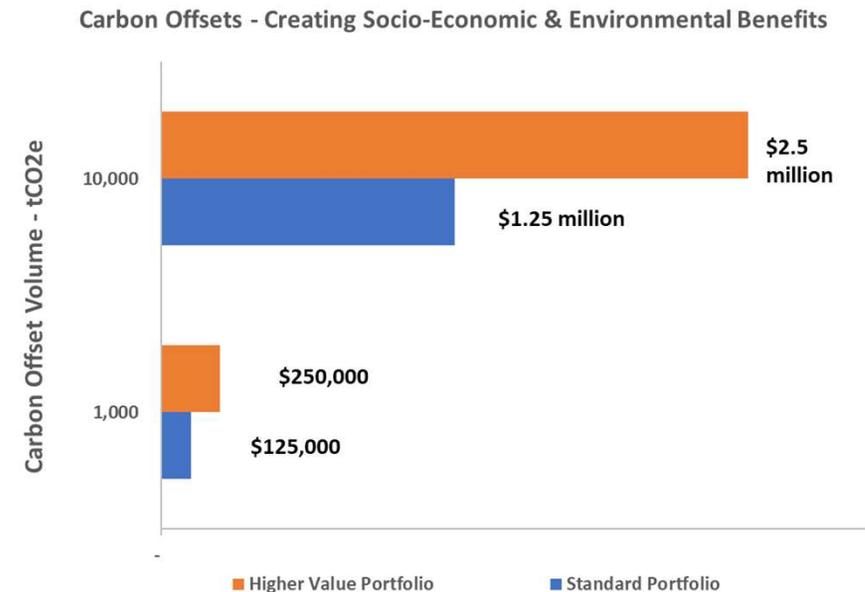


Source: The Gold Standard

Socio-Economic & Environmental Portfolio

Overview:

- For example, wider socio-economic & environmental benefit created:
 - **1,000 tCO₂e**
 - \$125,000 (standard)
 - \$250,000 (higher)
 - **10,000 tCO₂e**
 - \$1.25+ million (standard)
 - \$2.5+ million (higher)
- Amplifying socio-economic & environmental value



Gold Standard[®]



Offset Projects

Portfolio: Gold Standard Biogas

Project Overview:

- Biogas projects are estimated to have the highest wider socio-economic-environmental benefits
- **\$465 wider benefit per 1 tCO₂e**
- Benefits for UN Sustainable Development Goals:

Gold Standard[®]



Gold Standard Biogas – Cambodia

- Highest socio-economic-environmental benefits
 - **\$465 societal benefit per 1 tCO₂e**
- Biogas kitchen **air pollution reduced by 88%** (Particulate Matter, **PM 2.5**)
- **\$143 per year saving** on cooking fuels per household
- **Over 90,000 direct beneficiaries**
- On average, **5 tCO₂** is reduced per digester per year
- **117 minutes daily time saving** per household
- **Over 250,000 tonnes of wood saved**
- **21,000 households use bio-slurry as fertiliser**



Project in action: <https://www.youtube.com/watch?v=nsO>

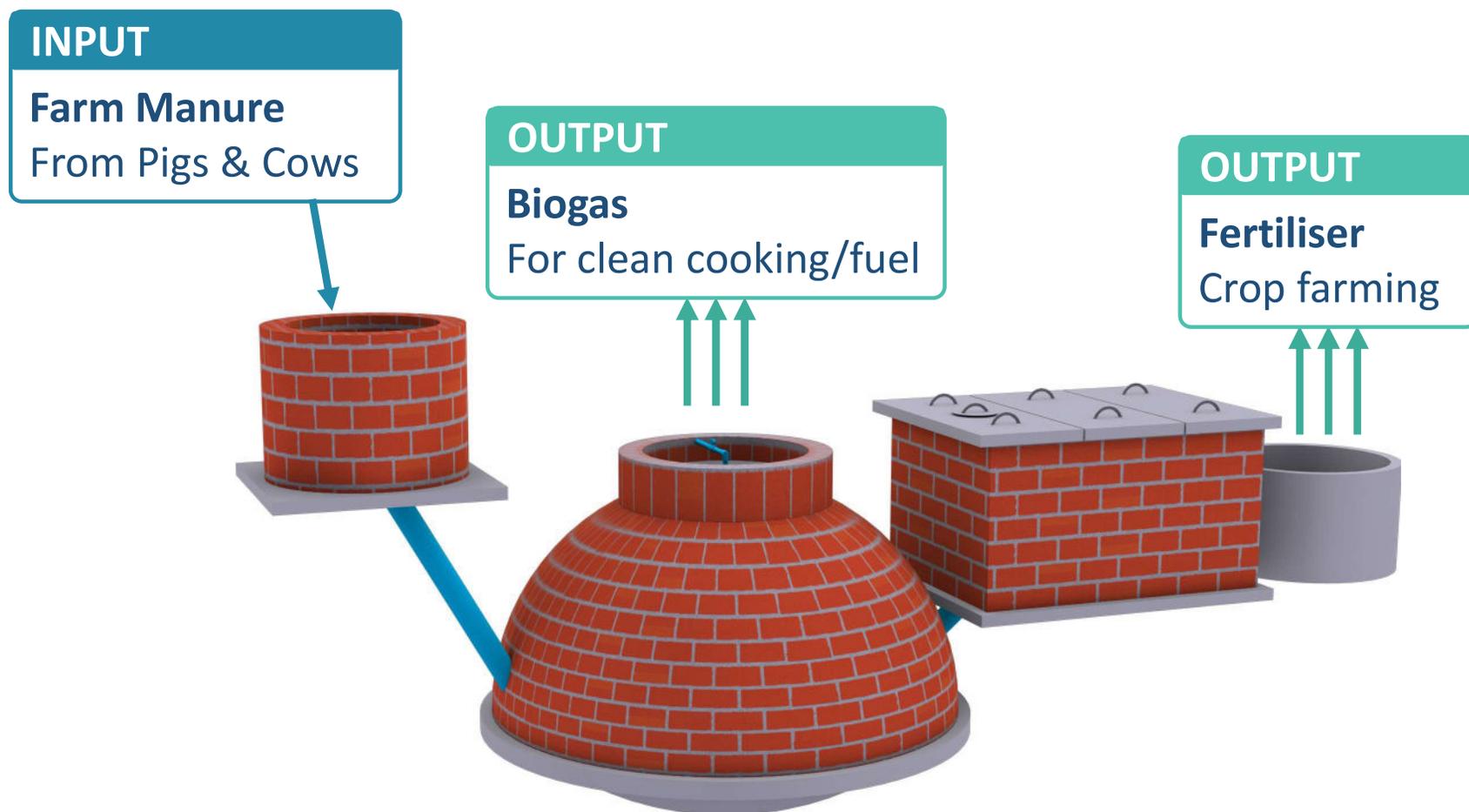
UN Sustainable Development Goal Benefits:



Gold Standard[®]

circular
ecology 

Gold Standard Biogas – Cambodia



Anaerobic Digestion Chamber

Gender Equality Certified – Gold Standard Lango Safe Water

- **First project to be certified under the *Gold Standard's Gender Equality Framework***
- Access to safe water is a major challenge, **requiring the water to be boiled using firewood**, which contributes to deforestation
- Creates a burden for women and children who typically collect the water and firewood
- **Estimated nearly 208 hours saved per year per household** (26 working days per year)
- **40,000 individuals** now enjoy clean water access, reducing the incidence of waterborne illness
- Reported incidents of domestic violence related to water collection have **dropped to zero compared to 35% prior**



UN Sustainable Development Goal Benefits:



Gold Standard[®]

circular
ecology 

CommuniTree – Nicaragua

Project Overview:

- **Agroforestry, Afforestation & Reforestation**
- *CommuniTree Carbon Program* uses reforestation to **create long-term income opportunities for smallholder farmers**
- **Improving livelihoods** in the **poorest parts** of the world, which are the **most vulnerable to the effects of climate change**
- Farmers typically **earn less than \$2 per day**



UN Sustainable Development Goal Benefits:

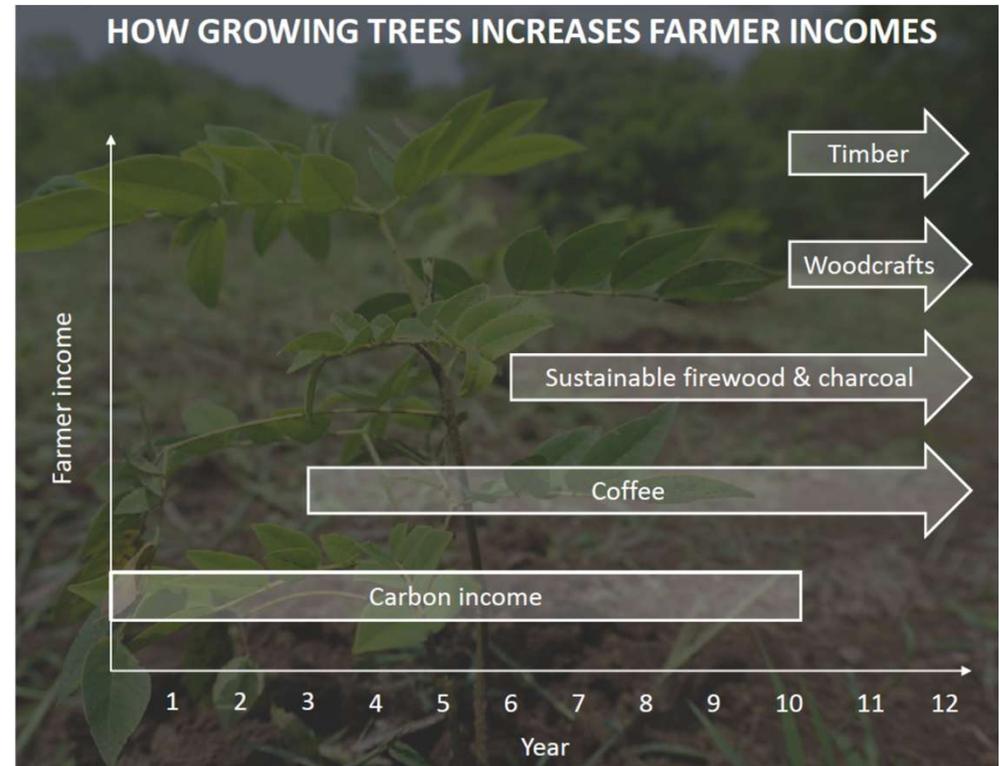


CommuniTree – Nicaragua

Trees are more resilient to droughts and flooding than traditional agricultural crops, so their livelihoods are partially hedged against the risk of extreme weather events caused by climate change

Building Circular Forest Enterprises

- Tree farming
- Growing coffee alongside trees
- Producing high-value wood products



“This forest is the inheritance for my grandchildren. The trees will provide the wood for their future homes and protect our community’s water supply for years to come.”

*Roumaldo Benavidez
One of the 1,000 CommuniTree farmers*

CommuniTree – Nicaragua: Project Benefits

- **Works with local farmers to build forest enterprises**, through creating and selling products from the forest they grow, such as high-value wood products, biochar and sustainably grown coffee
- **Creates thousands of local jobs annually** for non-land-owning farmers, **representing some of the poorest and most vulnerable communities**
- **12,000+ educational workshops delivered annually**, teaching families and communities sustainable farming practices, climate change, and local environmental laws
- **Working with over 800 female farmers**, who would otherwise have challenges seeking financing and resources
- **Over 25 million native trees planted**
- **Over 130 native tree species recorded**, balancing the forest ecosystem and wildlife habitats

CommuniTree:
Our Land Legacy



CommuniTree:
Carbon Program



Other Offset Projects

- **For more information** on other carbon offset projects, please visit our **online store**:
 - <https://circularecology.com/product-category/carbon-offset>
- We are working on **automating carbon offset certificates**. For now, we ask interested parties to request a certificate for their order via email
- **For larger volumes, we encourage people to contact us for bulk pricing (500+ tCO₂e)**
- **Currently 4 projects on sale – up to 20% off per tCO₂e**

Showing 1–12 of 14 results Default sorting ▼

		
<p>CARBON OFFSETS General Offset Portfolio £10.00</p>	<p>CARBON OFFSETS Gold Standard Portfolio – Renewable Energy £8.00</p>	<p>CARBON OFFSETS CommuniTree Forestry Project Nicaragua £18.00</p>
		
<p>CARBON OFFSETS Gold Standard Biogas and Clean Cookstoves Project Cambodia £19.00</p>	<p>CARBON OFFSETS Gold Standard Biogas and Clean Cookstoves Project Kenya £19.75</p>	<p>CARBON OFFSETS Gold Standard Biogas Digesters Project Indonesia £19.00</p>



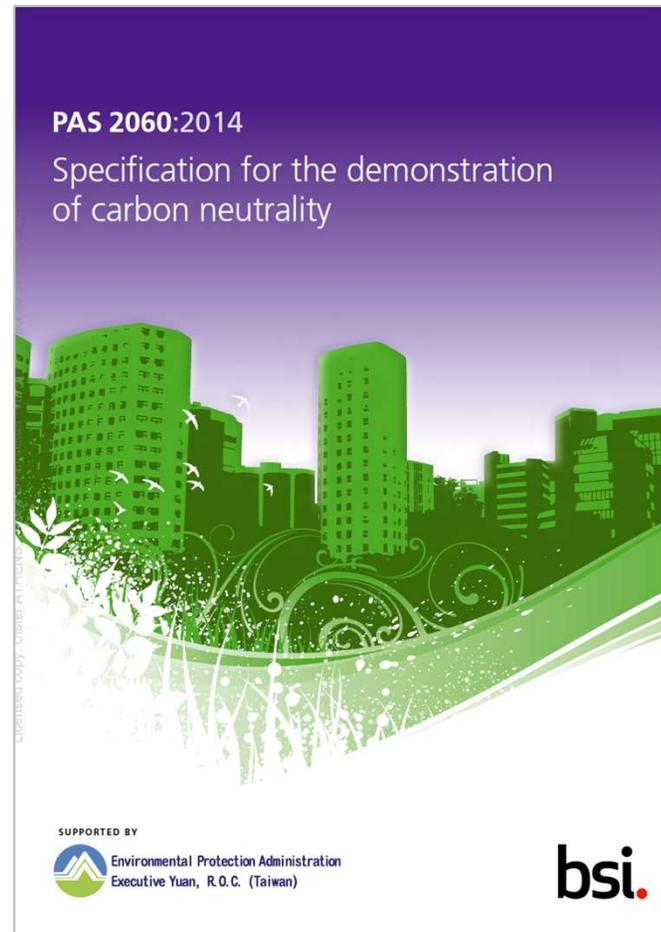
Carbon Neutrality

What is 'Carbon Neutrality'?

- Carbon neutrality is a concept of **mitigating or balancing your carbon emissions** to be neutral
- For example:
 - Company XYZ released 1,000 tCO₂e emissions from their operations in 2024
 - They can offset at least 1,000 tCO₂e to become carbon neutral
- It's important to make sure that any carbon neutral statements are **aligned with best practices**:
 - **Measurement according to accepted carbon footprint standards**
 - **Best practice carbon offsetting**
 - **Reduce emissions first, before offsetting**
 - **Commit to reducing your future emissions**

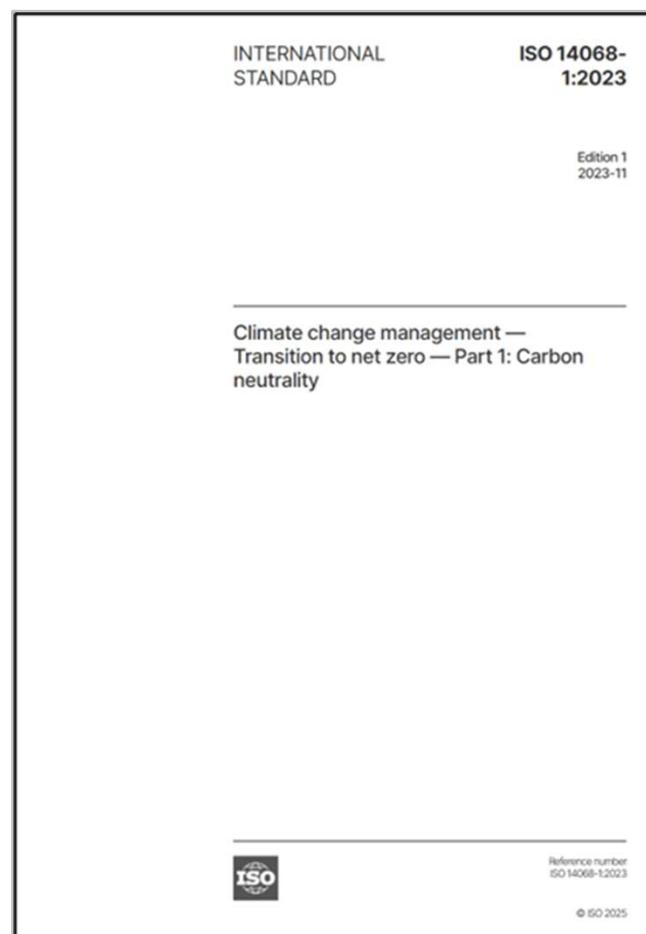
Carbon Neutrality Standards

- **PAS 2060:2014** was the first standard on carbon neutrality
- It laid the foundation for **best practice carbon neutrality statements**
- Had high levels of corporate **commitment for reduction**
- And high levels of **public disclosure**, including full disclosure on carbon offsetting
- However, it has **since been superseded by ISO 14068-1:2023**

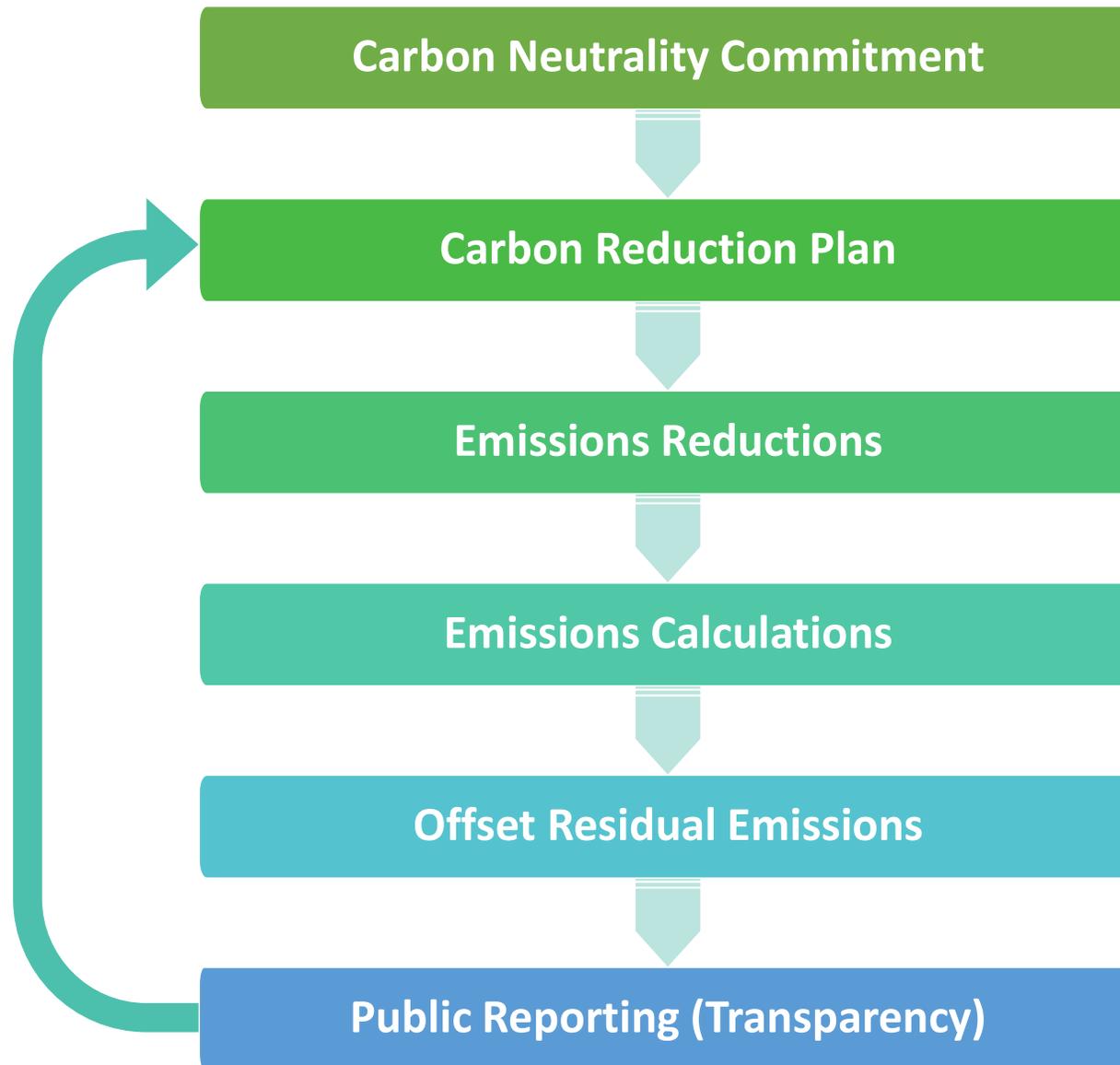


Carbon Neutral – ISO 14068-1

- **ISO 14068-1:2023** sets the modern standard for carbon neutrality
- Builds upon **PAS 2060**
- **With increased alignment to carbon footprint standards**
 - **ISO 14064** for organisational footprints
 - **ISO 14067** for products
- Stronger requirements on **carbon management plans** over a timeline, to **reduce to residual emissions**



Carbon Neutral Process - Best Practice



Carbon Neutrality

- **Carbon neutrality is achieved through carbon offsetting**
- If going carbon neutral, it's important to **adhere to best practices**
 - Measurement aligned with carbon footprint standards
 - **Offsetting best practices**
- It's also important to **reduce your emissions before offsetting**
- And making sure you are **committed to reducing your future emissions**
- Adherence to **ISO 14068-1 is recommended** for modern carbon neutrality statements



Tree Planting

Liam Seprini

Tree Planting as a Core Initiative

- Tree planting is embedded in all our activities at Circular Ecology, including:
 - **Consultancy projects**
 - **Carbon offsetting**
(4 trees planted per tonne of CO₂e offset)
 - **eLearning and training courses**
 - **We plant a tree for every new customer**
- **Scaling Carbon Reductions Initiative (SCRI):**
 - **25%** from our tree planting sales is diverted into the SCRI to help fund the development of free resources and tools



Reflecting on Our Tree Planting Journey

- Circular Ecology are **Forest Partners of Eden: People+Planet**
- By 2023, Eden had planted **over 500 million trees** in regions that needed it the most
- With your help, we've funded the planting of **over 780,000 trees**



Tree Planting: Alignment With UN SDGs

Tree planting activities align with the following **United Nations Sustainable Development Goals** (UN SDGs):

- **UN SDG 1 – No Poverty**
- **UN SDG 2 – Zero Hunger**
- **UN SDG 3 – Good Health and Well-Being**
- **UN SDG 5 – Gender Equality**
- **UN SDG 8 – Decent Work and Economic Growth**
- **UN SDG 10 – Reduced Inequalities**
- **UN SDG 13 – Climate Action**
- **UN SDG 14 – Life Below Water**
- **UN SDG 15 – Life on Land**
- **UN SDG 17 – Partnerships for the Goals**



The Benefits of Tree Planting

- **The role of trees in climate action:**
 - **Trees sequester CO₂** as they grow, contributing to long-term reductions in atmospheric carbon
 - **Forests absorb around 7.6 billion metric tonnes of CO₂ annually**, playing a key role in climate change mitigation *[NASA, 2021]*
 - Trees **improve soil health** and **water regulation**
 - They can reduce urban heat islands by **lowering city temperatures by up to 12°C** *[New Scientist, 2021]*
- Learn more: <https://circularecology.com/tree-planting.html>

The Future Carbon Storage Potential of Tree Planting

- Some of the trees planted have been mangrove trees
 - Mangrove trees are particularly beneficial to the environment as they have been **found to store 2-4 times the carbon** of mature tropical forests [*Fatoyinbo et al., 2017*]
- Eden established that the average amount of CO₂ absorbed by a mangrove forest is **308 kgCO₂ per tree**
 - With an average growth life of 25 years, this works out to **12.3 kgCO₂ per tree per year** [*Donato et al., 2011*]
- Mangroves have an extensive root system that allows them to thrive in muddy coastal areas
 - Additionally, they are **cost-effective to grow and maintain**, so they are more likely to survive once planted
 - Mangrove forests also **encourage biodiversity** [*Komiyama et al., 2008*]
 - They provide a natural coastal barrier, reducing storm surge wave height and **protecting life and property in low-lying coastal areas** [*Asari et al., 2021*]

The Future Carbon Storage Potential of Tree Planting

Benefits of Mangrove Trees

2-4x

More carbon is stored than in mature tropical forests

12.3

kgCO₂e stored per tree per year

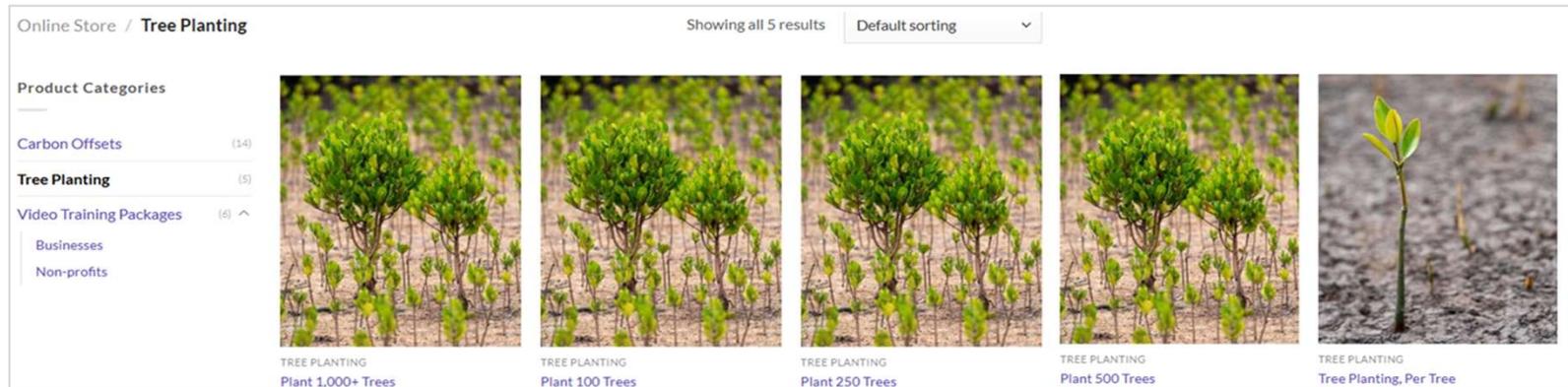
308

kgCO₂e per tree over a 25-year life

[Click Here to Watch
Eden's Work](#)



Circular Ecology Tree Planting Products



- We offer tree planting options through **our online store**
- How this works:
 - **Choose the number of trees** and place an order
 - **Our partner plants the trees** in regions affected by deforestation, in collaboration with local communities
 - *(Optional)* Email us for a **digital Tree Planting Certificate**
 - **25% of tree sales** through our store is allocated to our **SCRI** pot to fund **free open-access resources, tools, and data for emissions reductions**
- **Visit our online store:** <https://circularecology.com/product-category/tree-planting>

Tree Planting: What it Can (& Can't) Do

What it Can Do

- Remove CO₂ from the atmosphere
- Restore ecosystems & biodiversity
- Improve local livelihoods
- Improve soil health and water regulation
- Act as nature-based adaptation strategies

What it Can't Do

- Deliver instant climate impact
- Offset continued high emissions from polluting activities
- Guarantee permanence without care
- Succeed without appropriate species and site selection
- Work everywhere, equally well



Summary

Summary

- Carbon offsetting is a **process to mitigate carbon emissions** elsewhere
- It's recommended to **adhere to best practices**
 - **Reduce emissions first**
 - Align measurement with **carbon footprint standards**
 - **Best practice offsetting**
 - **Carbon management plan** for future emission reductions
- Carbon neutrality **best practice defined by ISO 14068-1:2023**
- **Tree planting** is available on our online store
- **We are diverting funds** from all carbon offsets and tree planting to support the development of **free carbon footprint data and tools**
 - Including ICE Database updates (free embodied carbon database for materials)

Upcoming Webinars

- We plan to wrap up 2025 with two more free webinars:
 - **Product Footprinting & EPD Programme Launch** (November)
 - **ICE Database webinar** (TBD – early December)
 - **Carbon Libraries Development** (TBD)
- For more information:
 - Follow us on [Eventbrite](#)
 - Follow us on [LinkedIn](#) (circular-ecology)
 - Visit our [Website](#)
 - Subscribe to our [Monthly Newsletter](#)



Q&A

Please use the Q&A interface to ask your questions



Thank You for Joining Us

Sign up for the latest sustainability stories and future updates:

<https://circularecology.com/newsletter.html>