



An Overview of Carbon Neutrality: Measure, Manage, Offset, Improve

Dr Craig Jones &
Liam Seprini

What We'll Cover

- What 'carbon neutrality' is (and is not)
- How it is applied across different contexts
- Measurement, management, and mitigation (offsetting)
- Key standards and reporting expectations
- Carbon Neutrality vs. Net Zero Carbon
- 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



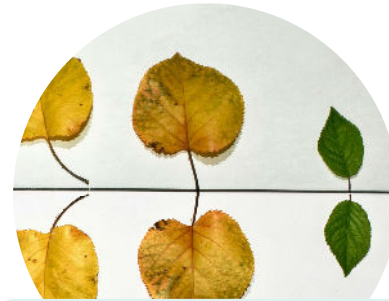
Community



Quality



Ethical



Continuous Improvement



Celebrating 850,000 Trees Planted

- We have facilitated the planting of **over 850,000 trees**
- Through our partnerships with **Eden: People+Planet** (formerly Eden Reforestation) and **Ripple Africa**
- Tree planting available on our online store for **£1 (ex. VAT) per tree**
- **25%** of tree planting sales diverted to our **SCRI fund**





What is Carbon Neutrality?

Liam Seprini

What is 'Carbon Neutrality'?

i

A concept of mitigating or balancing carbon emissions to a state of neutrality for a specific reporting period

- **For example:**

- A company emitted **1,000 tCO₂e** from operations in 2024
- **Carbon hotspots** are identified and targeted, leading to reductions of **150 tCO₂e emissions**
- Following reductions, they may then **offset at least 850 tCO₂e** to become carbon neutral

What Carbon Neutrality is Not

Carbon Neutrality does not:

- Eliminate need for emissions reductions
- Represent a permanent achievement
- Indicate alignment with long term pathways on its own
- Remove need for future transition planning, governance, or transparency



Carbon Neutrality Claims Carry More Risk & Relevance

From a survey of 439 institutional investors:

 **79%** consider climate risk disclosure to be at least as important as financial disclosure

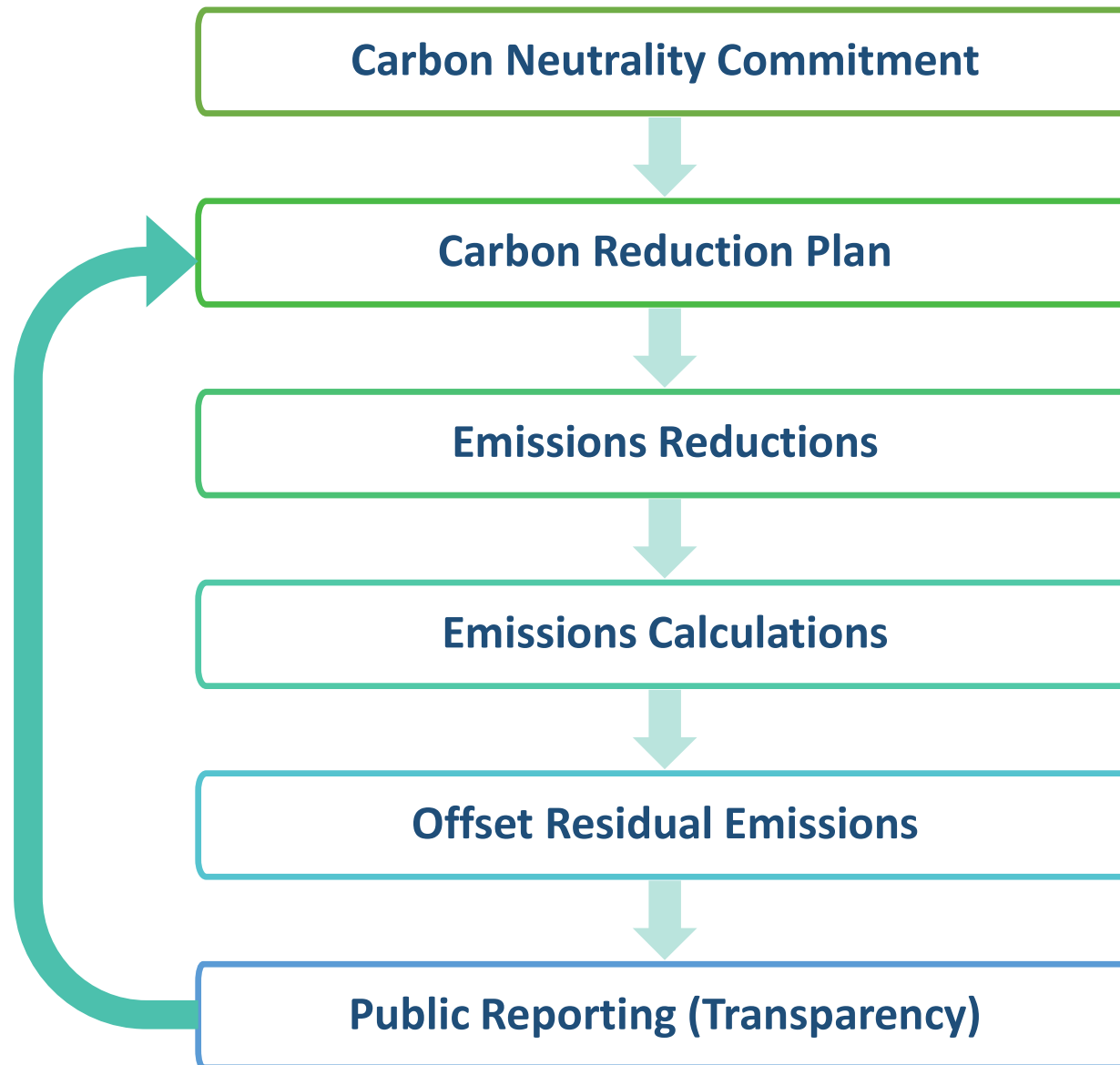
 **67%** believe current corporate disclosures are not sufficiently precise

From a global survey of 1,000+ large organisations:

 **98%** embedding ESG data into purchasing and supplier evaluations

 **48%** report visibility of ESG performance across most Tier 1 suppliers

Best Practice Carbon Neutrality



Best Practice Carbon Neutrality: ISO 14068-1

ISO 14068-1 Hierarchy



Reduce
Emissions



Remove
Emissions

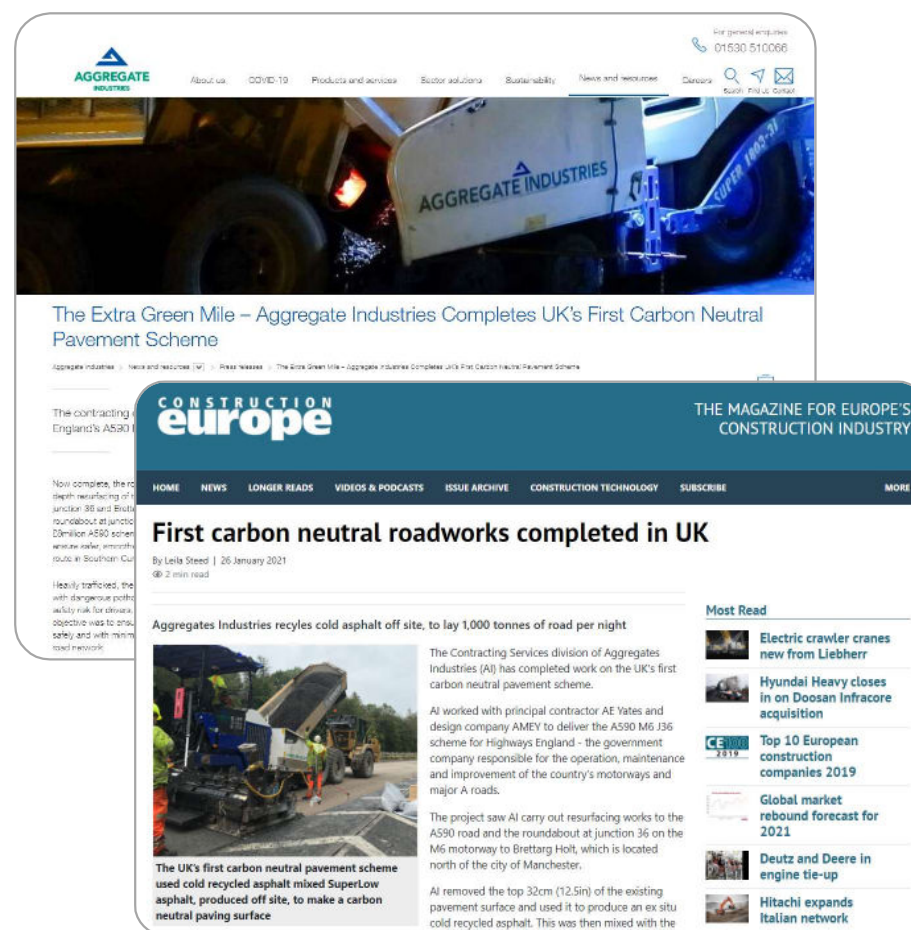


Offset Emissions

- Standards on neutrality started with PAS 2060 - a **public disclosure** to a recognised standard to **substantiate carbon neutral claim** which can be verified
- From 1st January 2025 it was **replaced by ISO 14068-1**
- ISO standard mandates Carbon Neutrality Management Plans be **in line with the Paris Agreement 1.5°C scenario**
- Offsets more than 5 years old **cannot be used**
- **Justification on any offsets** purchased rather than carrying out removals or reductions

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:
 - holcim.co.uk/news-and-resources/press-releases/first-carbon-neutral-pavement-scheme





Measurement: Requirements to Measure tCO₂e

Liam Seprini

What Needs to Be Measured?

- ✓ **Greenhouse Gases (GHGs), expressed as tCO₂e**
- ✓ **A defined boundary**
 - Org, product, building, project, etc.
- ✓ **A defined period of time**
 - Usually single reporting year
- ✓ **Relevant emission sources within the scope**
 - i.e., for an organisational footprint:
 - Direct emissions (Scope 1)
 - Purchased energy (Scope 2)
 - Selected value chain emissions (Scope 3)



Carbon Neutrality Across Contexts: What to Measure & Which Standards Apply

Company

Organisational emissions by period

Typically aligned with ISO 14064 or the GHG Protocol

Product

Life cycle emissions by functional unit

Typically aligned with ISO 14067 or product LCA approaches

Construction Project

Embodied emissions within defined project boundary

Typically aligned with RICS WLCA, EN 15978, and ISO 21931-1

Data Quality & Assumptions

Primary Data

Measured or specific to the supplier, where available

Secondary Data

Industry averages or generic emissions factors

Assumptions

Incomplete data
Use of proxy data
Estimates for future or unknown activities

Most footprints use a combination of all three
(Primary, Secondary, and Assumptions)



Management: Priorities Ahead of Offsetting

Liam Seprini

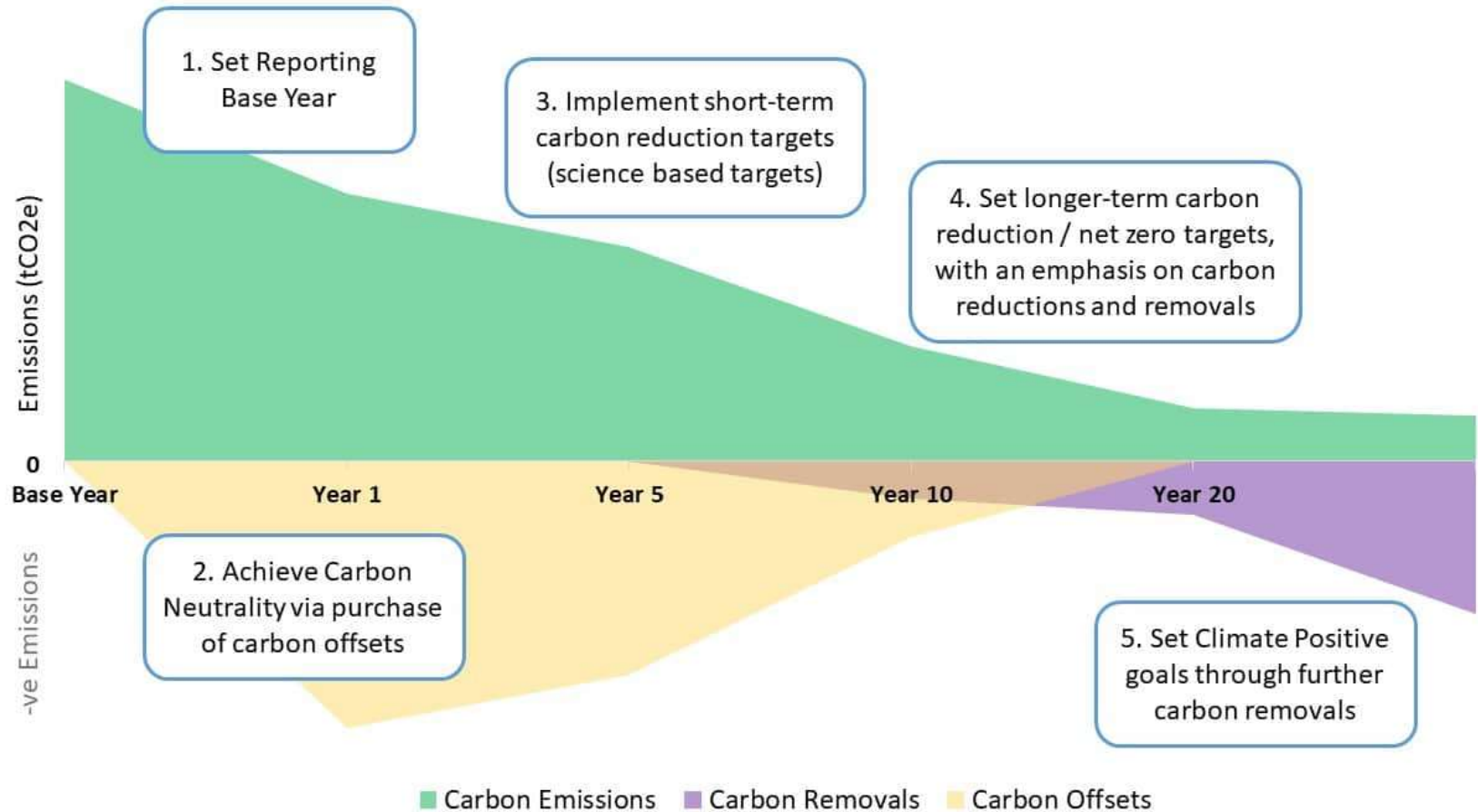
Best Practices Before Offsetting

Before offsetting, credible approaches will require you to:

- ✓ **Use the right method for the claim**
 - *ISO 14064, ISO 14067, RICS WLCA, etc.*
- ✓ **Identify hotspots and reduce first**
 - *ISO 14068-1 prioritises reductions before neutrality claims*
- ✓ **Set out a Carbon Reduction Plan**
 - *Actions, priorities, timescale, tracking*
- ✓ **Report transparently on what remains**
 - *Boundaries, assumptions, limitations*



Setting a Strategy: Carbon Reduction Plans



Why Management Matters

- Shows emissions are being actively addressed
- Provides context for how remaining emissions are treated
- Reduces long term reliance on balancing
- Demonstrates progression and transparency

Companies disclosing via CDP report >\$54 billion in annual savings from lower carbon initiatives

Of 12,000 companies, 72% have reduction initiatives in place



Mitigation: Carbon Offsetting

Liam Seprini

What is a Carbon Offset?

- A useful mechanism to compensate for unavoidable **greenhouse gas (GHG) emissions**
- **Fund carbon emission reductions** occurring elsewhere
- Carbon offset credits are the **currency** (commodities) of carbon offsetting

1 Carbon Offset Credit
=
Emission Reduction of 1 tCO₂e

How Do Carbon Offset Credits Work?

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

Someone looking to offset an annual footprint of 11.7 tCO₂e would need to offset 12 tCO₂e to cover these emissions

Carbon Offset Verification Schemes

- 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:

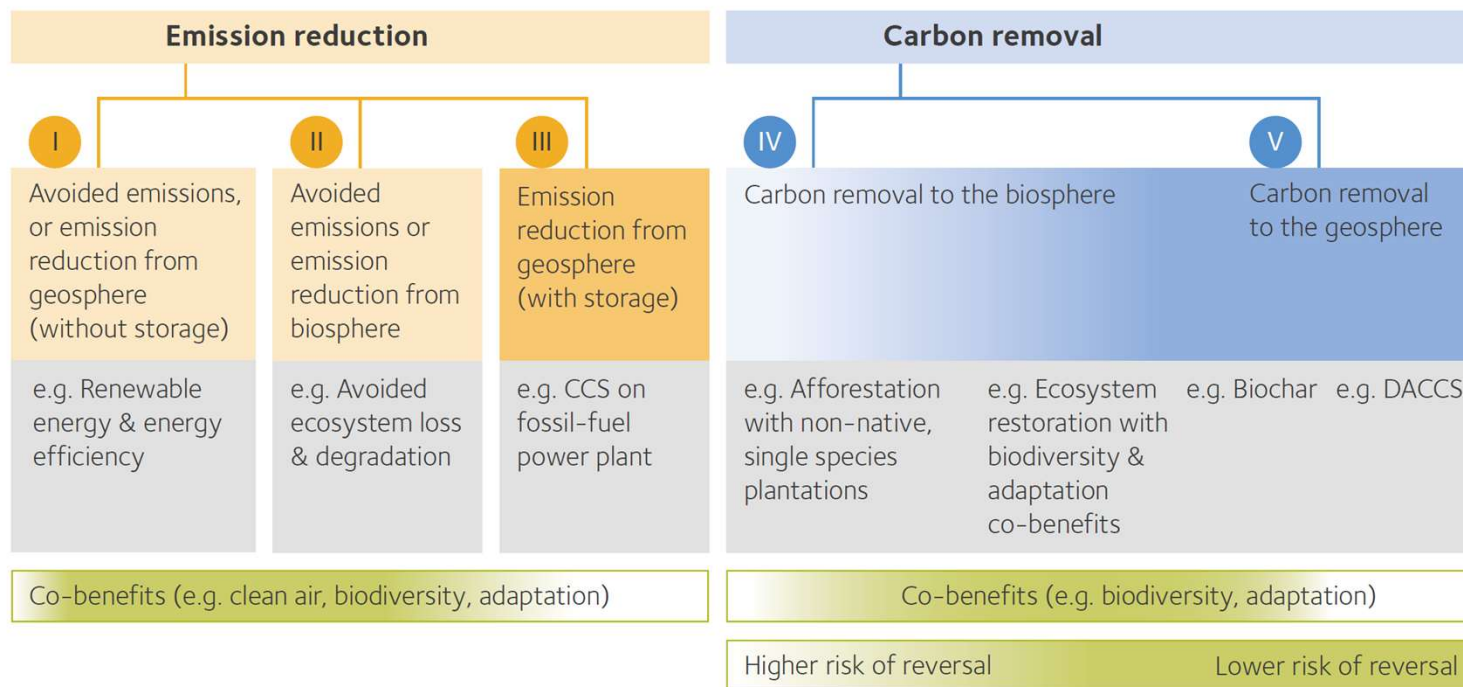
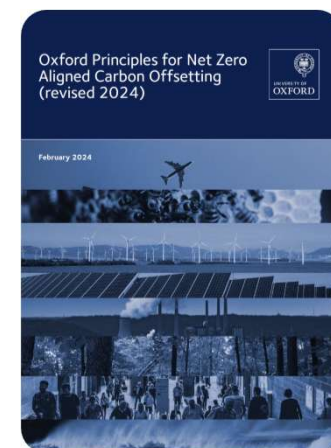


Gold Standard®



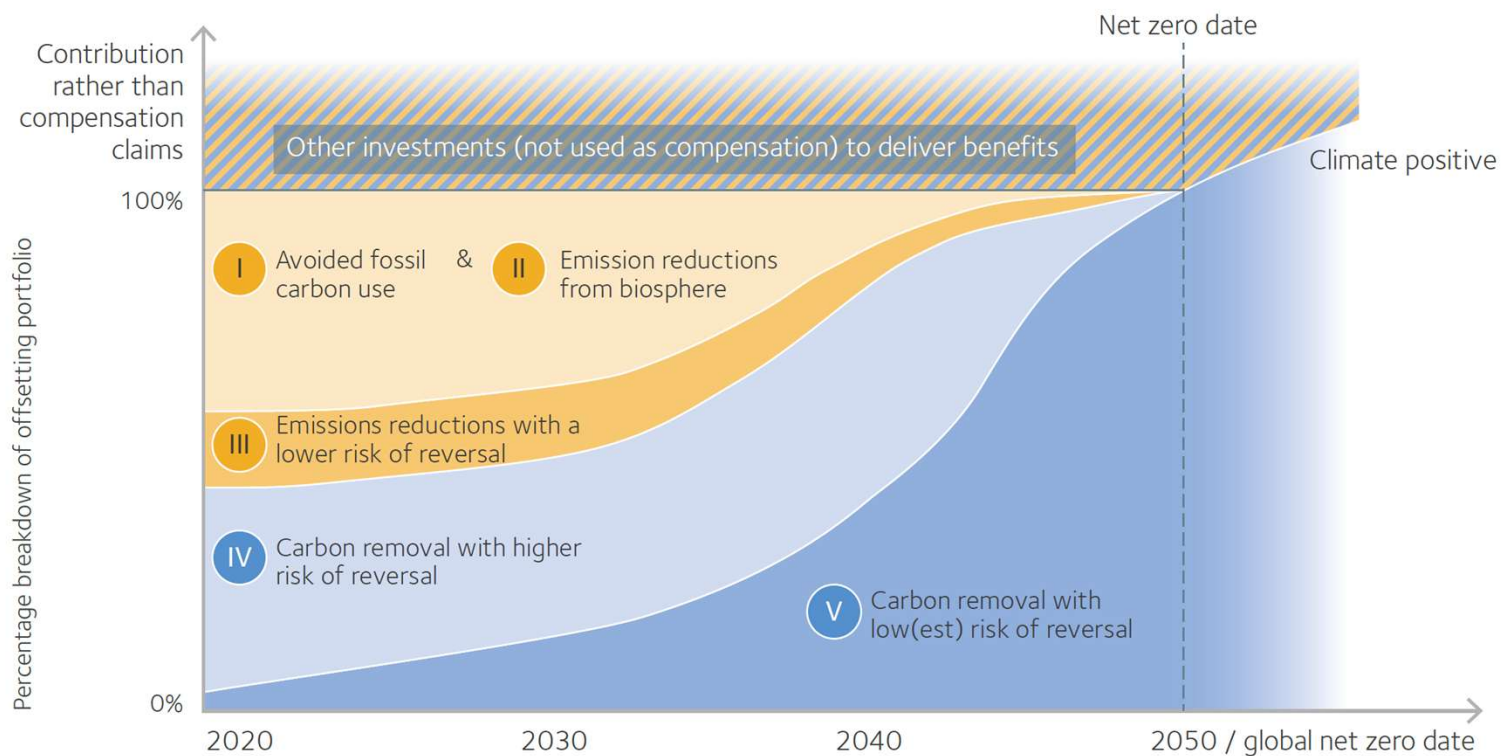
Carbon Offsetting: Best Practice

- 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...



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:

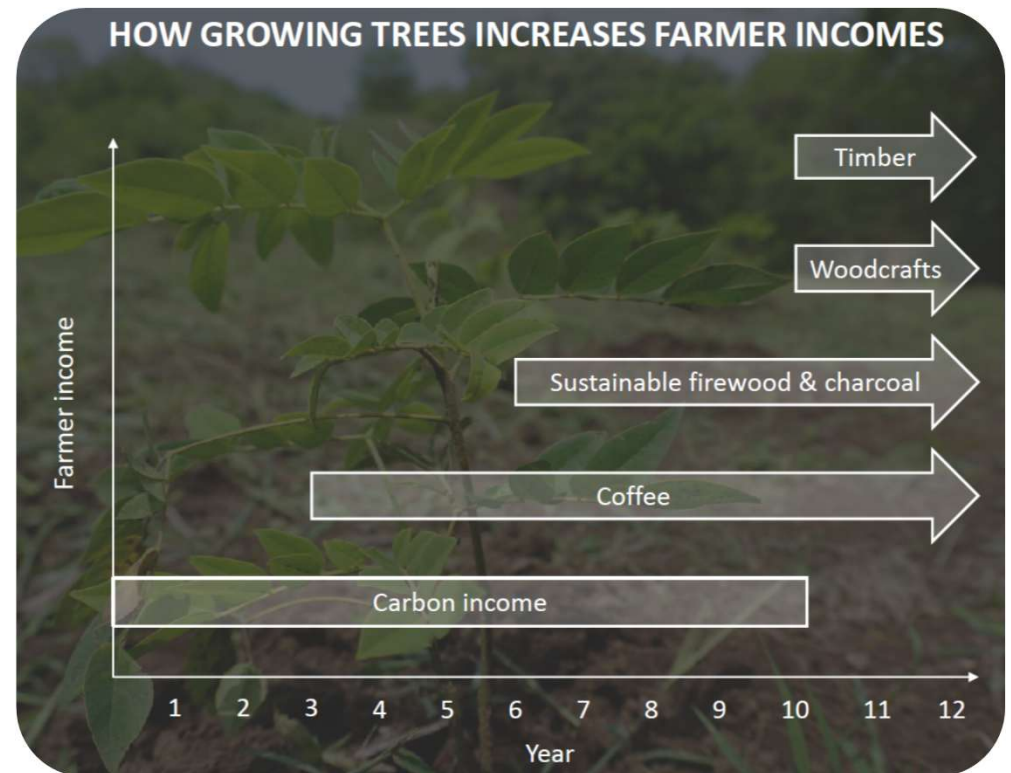


CommuniTree – Nicaragua

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**

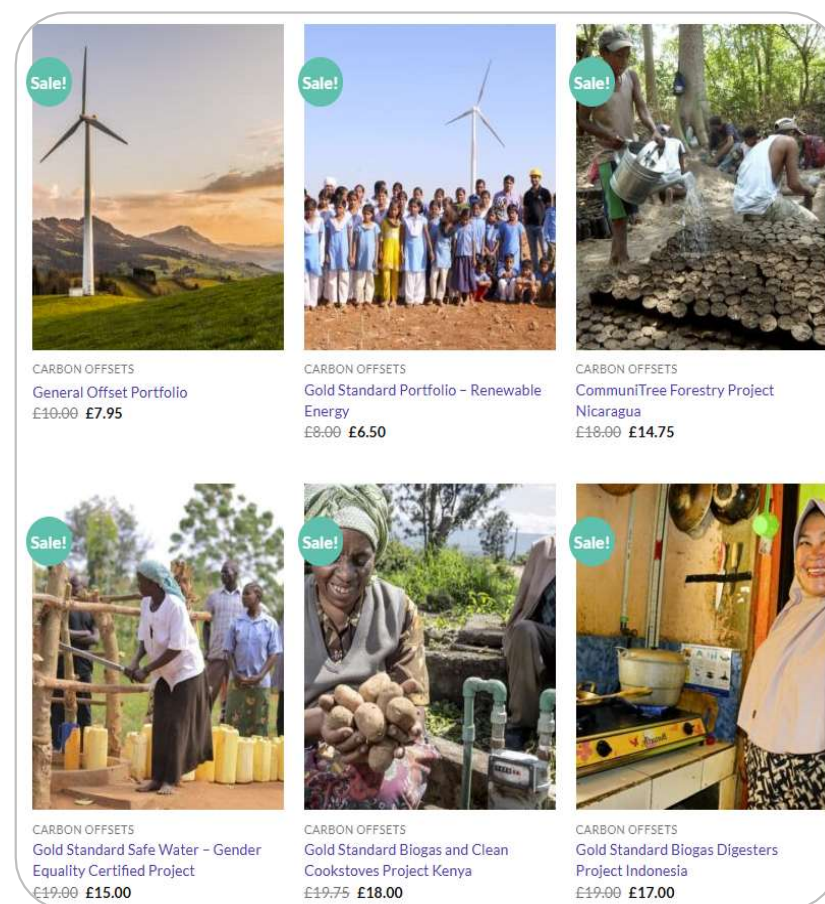


**CommuniTree:
Carbon Program**



Circular Ecology Offset Projects

- **For more info:**
 - Visit our online store:
circularecology.com/product-category/carbon-offset
- Proof of Offset certificate available upon request
- For larger volumes, please contact us for bulk pricing (500+ tCO₂e)
- 6 projects currently on sale from just **£6.50 per tCO₂e**



The image displays six project photos arranged in a 2x3 grid. Each photo has a green circular 'Sale!' tag in the top-left corner. Below each photo is text identifying the project and its price.

Project Name	Original Price	Current Price
General Offset Portfolio	£10.00	£7.95
Gold Standard Portfolio - Renewable Energy	£8.00	£6.50
CommuniTree Forestry Project Nicaragua	£18.00	£14.75
Gold Standard Safe Water - Gender Equality Certified Project	£19.00	£15.00
Gold Standard Biogas and Clean Cookstoves Project Kenya	£19.75	£18.00
Gold Standard Biogas Digesters Project Indonesia	£19.00	£17.00

The Role of Carbon Offsetting



- Offsets are projects which **store or reduce carbon**, and carbon credits can be purchased to **compensate for emissions** produced elsewhere
- Supports achievement of net zero carbon or carbon neutrality
- Can also create **positive social and economic impacts** beyond carbon avoidance, reductions, or removals
- Projects certified to internationally recognised standards are recommended (e.g., **Gold Standard, Verified Carbon Standard**)
- One part of the solution
 - Not the only solution



Can Carbon Neutrality be Achieved Through Tree Planting?

Dr Craig Jones

Carbon Neutrality Through Tree Planting

- Many businesses are interested in carbon offsetting through tree planting
- It's possible, but a complex area
- First of all only certified / verified carbon offset credits should be used
 - e.g. VCS, Gold Standard...etc
- E.g. you can't just plant a forest and claim its carbon neutral
 - BrewDog tried this and the project failed for various reasons



Carbon Neutrality Through Tree Planting

- There are 2 types of carbon offset credits:
 - **Ex-post:** Credits are certified and issued after the carbon reduction occurs, e.g. in the past
 - **Ex-ante:** Credits are issued before the carbon reduction occurs, more of a promise to reduce future carbon emissions
- **Most Carbon Neutral Frameworks only allow ex-post credits to be used**
 - E.g. VCS and Gold Standard offsets are on ex-post basis
- With trees not sequestering notable carbon for the first 10-20 years of their lifetime, this means the ex-post carbon credit are for trees planted a long time ago
- This makes achieving carbon neutral statements through tree planting projects challenging
 - There is a limited supply of suitable carbon offset credits and they are amongst the most expensive credits around
 - Its more possible if you only need a small tCO₂e of carbon offsets, but expect to pay higher prices for the carbon offset credits

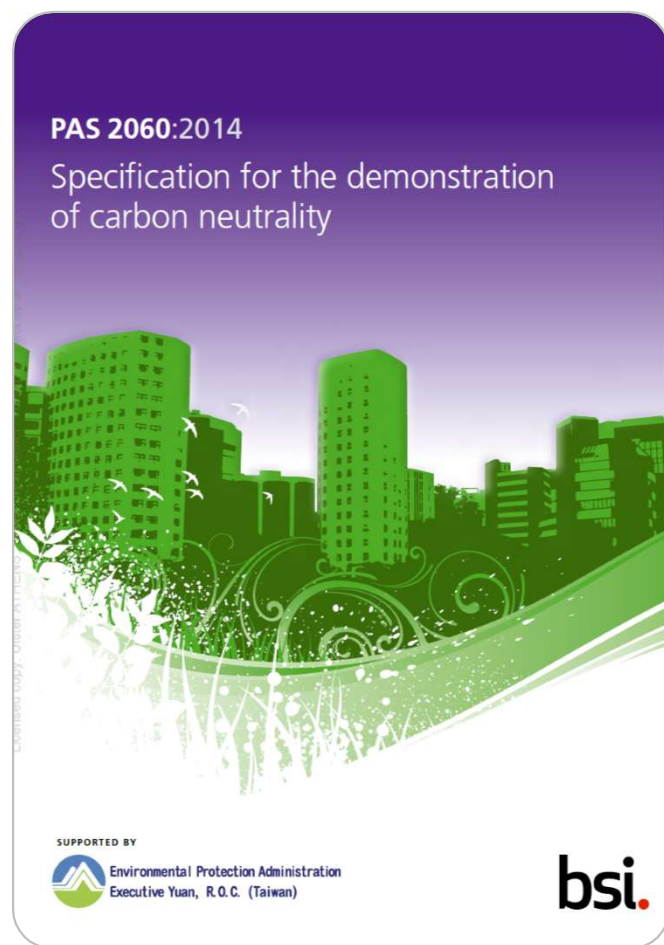


Reporting Carbon Neutrality: The Standards

Dr Craig Jones

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**



Reporting Carbon Neutrality

- PAS 2060 (now a legacy standard) set the standard for public disclosure on carbon neutrality, requiring a public disclosure to be released
- **ISO 14068 also required a carbon neutrality report to be made publicly available**
- Including, for example:
 - System boundaries, method
 - Carbon footprint results
 - Carbon management plan details
 - Reduction progress against carbon baseline
 - Carbon offset retirement serial numbers

Net Zero Aligned Organisations: ISO 14060

- **Under development**

- At the time of writing, this has just entered **Enquiry** stage
- Sets out requirements for how organisations can demonstrate their net zero strategy (inc. targets & delivery) are net zero aligned
- Also focuses on deliverability, credibility, and verifiability of progress
- Does not include an organisation's products



Carbon Neutrality vs. Net Zero Carbon

Dr Craig Jones

Carbon Neutrality vs. Net Zero

Carbon Neutrality

- Applies to defined reporting period, (often a single year)
- Balance is achieved within the period after reductions
- Reductions are expected but not prescribed in depth
- Offsetting used to address remaining emissions
- Often covers selected scopes
- Commonly applied to products, projects, or services
- Can be achieved without a long term reduction pathway

Net Zero

- Applies to the long term, aligned with climate science
- Deep, sustained emissions reductions define success
- Reductions are central and must be science aligned
- Neutralisation limited to truly residual emissions
- Expects full value chain coverage where emissions are material
- Primarily applied at organisational or value chain level
- Requires a defined reduction pathway and governance



Summary

Summary

- Carbon offsetting is a **process to mitigate carbon emissions** elsewhere
- **Carbon neutrality is achieved via carbon offsetting, ideally residual carbon emissions**
- If going carbon neutral, it's important to **adhere to best practices**
 - Measurement aligned with **carbon footprint standards**
 - **Reduce** your emissions **before** offsetting
 - **Offsetting best practices**
- Commit to **reducing your future emissions**
- Adherence to **ISO 14068-1:2023 is recommended** for modern carbon neutrality statements

Upcoming Webinars

- Coming up in May 2026:
 - **Carbon Reduction Plans: PPN 006 & NHS Net Zero Supplier Roadmap**
7th May
 - **Product Carbon Footprinting, LCA & EPDs: A Practical Introduction**
21st May
- For more information:
 - Follow us on [Eventbrite](#)
 - Follow us on [LinkedIn](#) (circular-ecology)
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Q&A

Please use the Q&A interface to ask your questions



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circularecology.com/newsletter.html