



# How to Produce an EPD: An Overview

Dr Craig Jones

[circularecology.com](http://circularecology.com)

# Your Presenter Today



***Dr Craig Jones***

*Managing Director*

20+ years' experience

LCA, embodied carbon, WLCs

Original author of the ICE Database

# Contents

- The steps involved in producing an EPD
- The role of Life Cycle Assessment
- What standards need to be adhered to?
- What primary data is needed to produce an EPD?
- What secondary LCA data can be used?
- Software and tools to produce an EPD
- The key roles of those involved
- Verification process of an EPD
- Publication of an EPD
- The Circular Ecology EPD Programme



# Background & Introduction

# Circular Ecology – Introduction



Environmental consultancy, founded in 2013, delivering evidence-based sustainability services

Our core areas of expertise include:

- Whole Life & Embodied Carbon Assessments for Construction Projects
- Organisational Carbon Footprinting (Scopes 1, 2 & 3)
- Product Carbon Footprints & Life Cycle Assessments (LCA)
- Carbon Footprint Verification & Assurance
- Net Zero & Carbon Reduction Strategy
- Carbon Footprint Database Development
- Online eLearning Training Courses
- Carbon Offsetting and Tree Planting



Hosts the Inventory of Carbon & Energy (ICE) Database

# 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 Included in an EPD?

**Product or Product Range Name**

**EPD Information**  
(Manufacturer, LCA Producer, Verifier, EPD Programme)

**Date of both publishing and expiry (5 years)**

**Declared Unit** (of the study – e.g., 1 kg, 1 tonne, 1 m<sup>2</sup> or 1 litre of product)

**Details of PCR used**  
(Product Category Rules)

**Product Composition & Technical Description of Product and Process**

**LCA module details, including inclusions and exclusions**

**Results of each indicator by LCA module**

**Environmental Product Declaration**

*in accordance with ISO 14025 & EN 15804+A2*

**Programme Operator**  
Circular Ecology EPD Programme

**EPD Registration Number**  
[EPD Number]

**Publication Date**  
[DD-MM-YYYY]

**Valid Until**  
[DD-MM-YYYY]

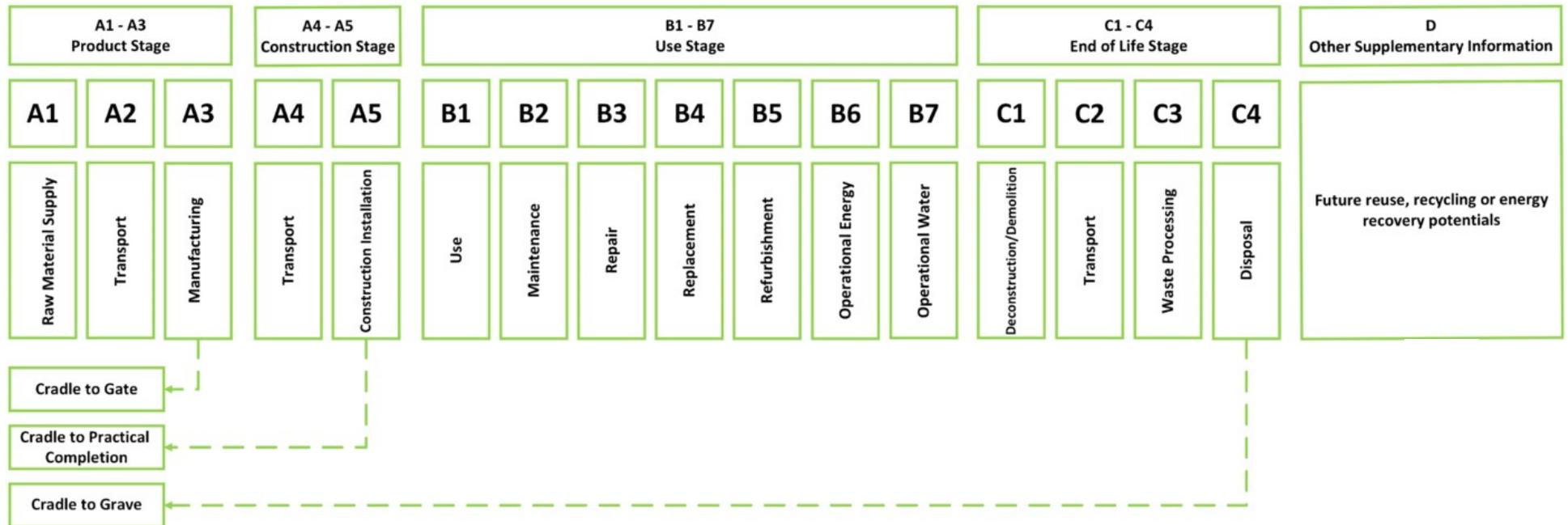
**Product Information:**  
[Product Names(s)]  
[Company Name]  
[Company Address]

**Company Logo:** [Company Logo]

**Product Image:** [Product Image]



# Scope & Boundaries



**"Cradle to Gate" (modules A1-3)** is mandatory for all EPDs, regardless of the product, or the core calculations rules used

**"Cradle to Gate" plus C1-4 and D** is the minimum mandatory scope when using EN 15804, unless exemptions apply



# What is the Process of Developing & Publishing an EPD?

# Steps to Produce and Publish an EPD

1

**Select EPD Programme** *(can also be selected later in process, but you will know the requirements of the GPI and PCR if selecting early)*

2

**Engage a competent LCA specialist to undertake the assessment** *(e.g., inhouse LCA specialist, Circular Ecology Consultants, Other LCA Consultants)*

3

**Produce an LCA and EPD following the requirements of the Programme's GPI and applicable PCR(s)**

# Steps to Produce and Publish an EPD

**4** Have the LCA & EPD verified by a verifier approved by the EPD Programme

**5** Provide the EPD, report, & verification statement to Circular Ecology

**6** Ensure publishing fees have been covered

**7** Circular Ecology undertake final checks & publish the EPD on their website

# EPD Development: Roles



## **EPD Owner**

The product manufacturer or brand owner that wants to make the declaration. They own the EPD, inline with the requirements of ISO 14025



## **LCA Practitioner**

Conducts the LCA in accordance with respective standards, PCRs and GPI. May be internal to the EPD Owner, or external consultants



## **Verifier**

A person independent of the LCA and EPD project, suitably qualified to verify the LCA and EPD



## **Programme Operator**

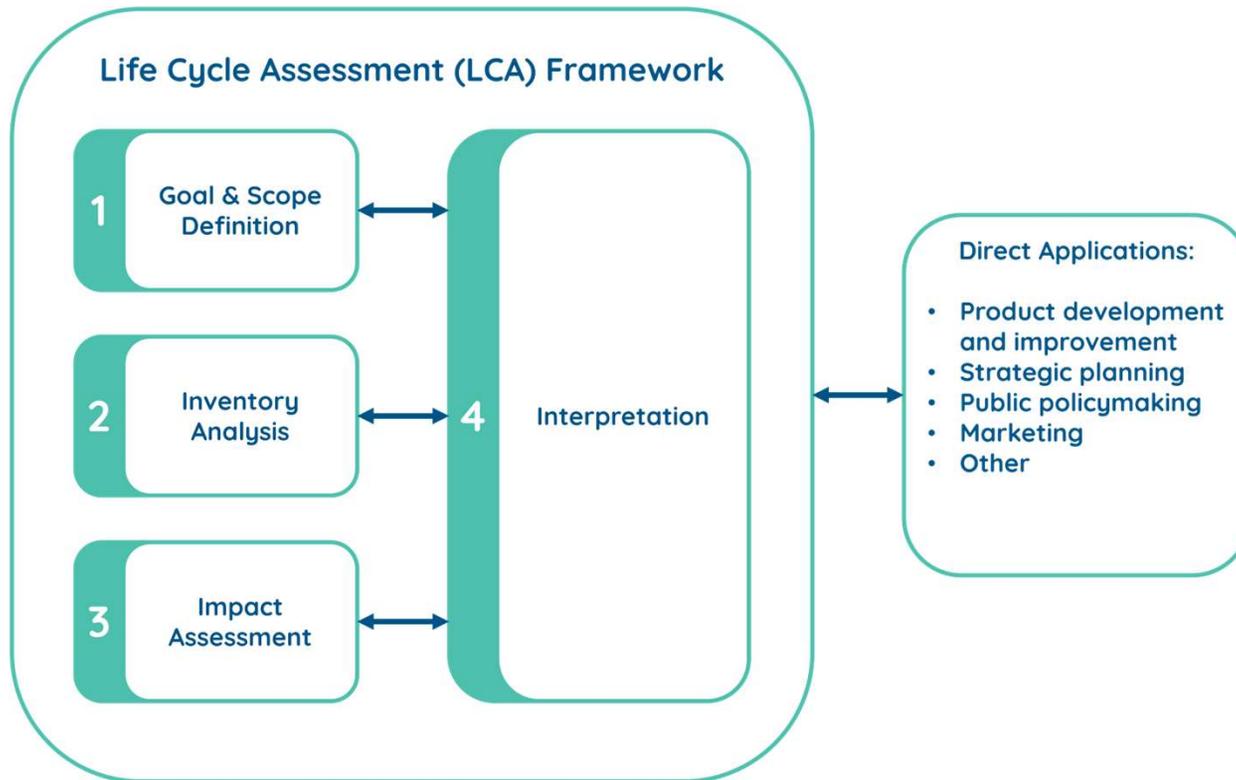
Publisher of the verified EPD



# The Role of Life Cycle Assessment (LCA)

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- All EPDs are **underpinned** by a Life Cycle Assessment (LCA)



# Life Cycle Assessment (LCA) Indicators

## Environmental Indicators

- Climate change – total (GWP-total)
  - Climate change – fossil (GWP-fossil)
  - Climate change – biogenic (GWP-biogenic)
  - Climate change – land use & land use change (GWP-LULUC)
- Ozone depletion potential (ODP)
- Acidification potential (AP)
- Eutrophication – freshwater (EP-freshwater)
- Eutrophication – marine (EP-marine)
- Eutrophication – terrestrial (EP-terrestrial)
- Photochemical ozone formation (POCP)
- Abiotic resource depletion – minerals & metals (ADP-minerals & metals)
- Abiotic resource depletion – fossil fuels (ADP-fossil)
- Water use – water deprivation potential (WDP)

## Additional Environmental Indicators

- Particulate matter emissions (PM)
- Ionising radiation – human health (IRP)
- Ecotoxicity – freshwater (ETP-fw)
- Human toxicity – cancer effects (ETP-c)
- Human toxicity – non-cancer effects (HTP-nc)
- Land use related impacts / soil quality (SQP)

# Life Cycle Assessment (LCA) Indicators

## Use of Natural Resources

- Renewable primary energy resources used as energy carrier (RPEE)
- Renewable primary energy resources used as raw materials (RPEM)
- Total use of renewable primary energy resources (TPE)
- Non-renewable primary energy resources used as energy carrier (NRPE)
- Non-renewable primary energy resources used as materials (NRPM)
- Total use of non-renewable primary energy resources (TRPE)
- Use of secondary materials (SM)
- Use of renewable secondary fuels (RSF)
- Use of non-renewable secondary fuels (NRSF)
- Use of net fresh water (W)

## Waste Indicators

- Hazardous waste disposed (HW)
- Non-hazardous waste disposed (NHW)
- Radioactive waste disposed (RW)

## Output Flows

- Components for reuse (CR)
- Materials for recycling (MR)
- Materials for energy recovery (MER)
- Exported electric energy (EEE)
- Exported thermal energy (ETE)

# Undertaking the LCA

- Decide if **undertaking in house or using external LCA specialists**
  - LCA is a complex topic. A high expertise is often required to undertake the LCA, so make sure you have suitable staff if undertaking in house, with enough time to digest key standards and LCA methodologies
- Select the LCA database and software
- **Collect the primary data for a consistent 12 month period**
  - Typically, the primary data is collected for the operations of the EPD Owner
  - However, if they don't manufacture the product, primary data should be collected from the main 1<sup>st</sup> tier supplier

# LCA Standards and Methods

- Understand the key methods, standards and Product Category Rules (PCRs):
- **Standards:**
  - **EN 15804:** “Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products”. This is the key method for construction products
  - **ISO 21930:** Very similar to EN15804, but an ISO standard. There are only a small number of differences in the rules between these 2 standards
  - **ISO 14025:** An ISO standard on Type III environmental declarations. The EPD programme guidance and selected PCRs will need to be compliant with this standard
- **PCRs:** EPD Programmes will have their own PCRs, to apply in addition to the above standards. Its therefore worth selecting the EPD Programme early in the LCA process

# Life Cycle Assessment (LCA)

- What is the difference between an LCA and an EPD?
- EPDs are essentially a more **standardised** way to report verified LCA data

	LCA	EPD
Purpose	analysis for internal or external insight	verified disclosure in a standardised format
Scope	flexible	defined by PCRs
Verification	recommended	required
Application	improve product sustainability, compare to competing products	disclose product environmental impacts, support tender requests



## Data & Tools

# Data Collection

- A detailed LCA needs to be completed
- This requires data:
  - **Primary Data:** Data that is specific to the manufacture of the product
  - **Secondary Data:** Data that is generic, from literature resources or LCA databases
- Primary data will therefore need to be collected from the main manufacturer of the product
- This is complemented by secondary data to complete an LCA



**Slide 21**

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**CJ1**

[@Liam Seprini] please can you change this image, it is very blurry, makes me dizzy

Craig Jones, 2026-03-11T10:29:32.169

# Primary Data

- Typically, primary data is needed for the same 12 month period
- This requires a point of contact at the organisation commissioning the EPD to facilitate the data collection

**Manufacturing energy**  
*(Electricity, natural gas,  
heating oil, etc.)*

**Production Output Volumes**  
*To divide energy of operations  
down to 1 product*

**Raw Material Inputs or  
Product Composition**

**Transport Routes for Raw  
Materials**

**Manufacturing Waste**

**Evidence of Green  
Electricity Tariffs**  
*If applicable*

# Secondary Data: LCA Database

- The key secondary data source is the LCA database:
  - **Ecoinvent**
    - >26,000 processes on processes and human activities
    - Highly adaptable, when using “Unit Processes”, which allows the data to be tailored and adapted to your situation
    - [ecoinvent.org](http://ecoinvent.org)
  - **SpheraMLC**
    - Formerly called GaBi
    - ~20,000 datasets
    - [sphera.com/solutions/product-stewardship/life-cycle-assessment-software-and-data/managed-lca-content/](http://sphera.com/solutions/product-stewardship/life-cycle-assessment-software-and-data/managed-lca-content/)
- Both are commercial databases, requiring purchase of a user license

# LCA Software & Tools

- The LCA database needs software or a tool to use:
  - **openLCA**
    - Free LCA software, by GreenDelta
    - [openlca.org](http://openlca.org)
  - **SimaPro**
    - Commercial license needed
    - [simapro.com](http://simapro.com)
  - **Ecochain**
    - Commercial license needed
    - Cloud based solution
    - [ecochain.com](http://ecochain.com)

# Solution

- At Circular Ecology we use
  - **Ecoinvent + openLCA**
    - *Note: GreenDelta have an EN15804 add-on database for ecoinvent, which is needed too*
- Recommend to purchase through openLCA Nexus for a version of ecoinvent compatible with openLCA
  - [nexus.openlca.org](https://nexus.openlca.org)
- This is a good solution for experts, where ecoinvent is an adaptable LCA database and openLCA a powerful software
  - Although those less experienced in LCA would likely want some training and time to learn the software and the nuances of ecoinvent, which is a detailed LCA database



**Bringing it Together**

# EPD Development: Roles



## EPD Owner

The product manufacturer or brand owner that wants to make the declaration. They own the EPD, inline with the requirements of ISO 14025



## LCA Practitioner

Conducts the LCA in accordance with respective standards, PCRs and GPI. May be internal to the EPD Owner, or external consultants



## Verifier

A person independent of the LCA and EPD project, suitably qualified to verify the LCA and EPD



## Programme Operator

Publisher of the verified EPD

## Slide 27

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**LS1**      **Repeated slide - is this intentional?**  
Liam Seprini, 2026-03-09T15:20:54.523

**CJ1 0**      **Yes it is**  
Craig Jones, 2026-03-11T10:31:04.255

# EPD Verification Process

- Use a Verifier approved by your selected EPD Programme
- Needs sufficient LCA knowledge and understanding of key standards
- They will undertake verification checks on the LCA and EPD
- Can be completed in several weeks, all going well, but might also take several months (if various changes to LCA are needed)



# Verification of EPDs

- In alignment with ISO 14025, verifiers shall not have been involved in the execution or development of the LCA or EPD and shall not have a conflict of interest (e.g., independent to the project)
- **Our definitions of verification types:**
  - **Internal verifier:** A verifier (person) internal to the EPD owner, e.g., they are an employee of the EPD owner
    - Recognised, but no current plans to allow internal verification
  - **External verifier:** A verifier (person) external to the EPD owner, e.g., they are not an employee of the EPD owner
  - **Third party verifier:** A verifier (person) that is both external to the EPD owner and external to the LCA practitioner
    - This definition is stricter than ISO 14025
- Circular Ecology EPD programme intends to use a mix of external verification and third party verification, but only approved verifiers may be used
- Qualified EPD verifiers are welcome to get in touch through our website

# EPD Publication

- Once the verifier has completed their verification report, it will be sent to the EPD Programme
- They will undertake final checks to make sure everything they need has been provided
- Then issue EPD numbers and publish the final EPDs
- They are typically valid for 5 years
- Although some EPDs are updated before then, if anything has changed in the production process, locations...etc, it may require an EPD update





# **Introducing the Circular Ecology EPD Programme**

# Circular Ecology EPD Programme

- Circular Ecology are now an EPD Programme Operator
  - This means we can **publish EPDs** in adherence with ISO 14025 (Type III environmental declarations)
- Our Objectives:
  - **Improve the transparency** of published EPD information
  - **Improve the use of primary data** in EPDs
  - **Produce higher quality LCAs**
  - **Implement a robust verification process** with increased focus on the review of the LCA results
  - **Comply with relevant international standards**, e.g., ISO 14025, ISO 14040, ISO 14044
  - **Encourage manufacturers and suppliers** to publicise their environmental declarations and reduce the environmental impacts of their products
  - **Encourage clients, buyers, specifiers, and other interested parties** to use environmental declarations

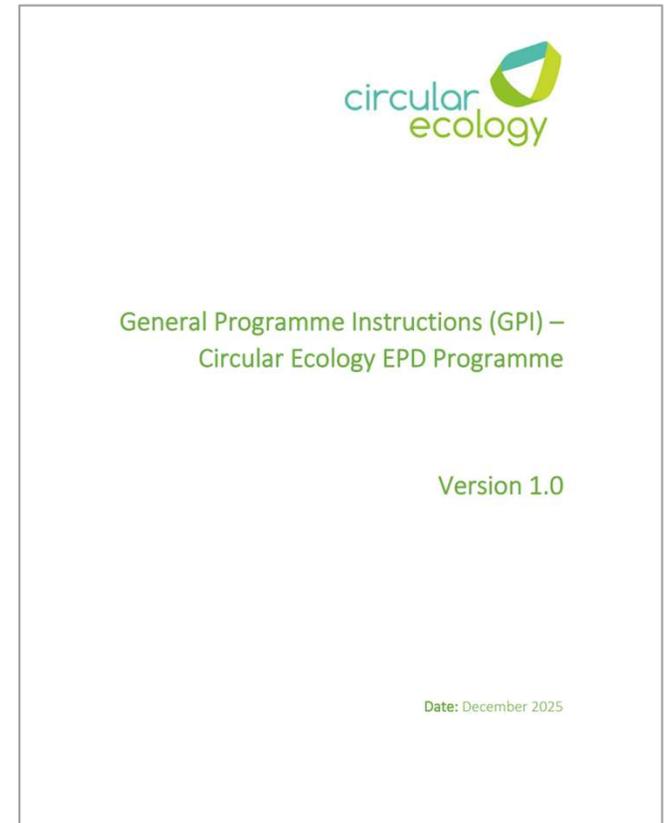
# Circular Ecology EPD Programme

## Key documents:

### General Programme Instructions (GPI)

- Describes how the Circular Ecology EPD Programme is developed and operated in compliance with ISO 14025
- It outlines the rules and procedures that apply to all EPDs issued under the programme, including processes for EPD development, independent review, and verification

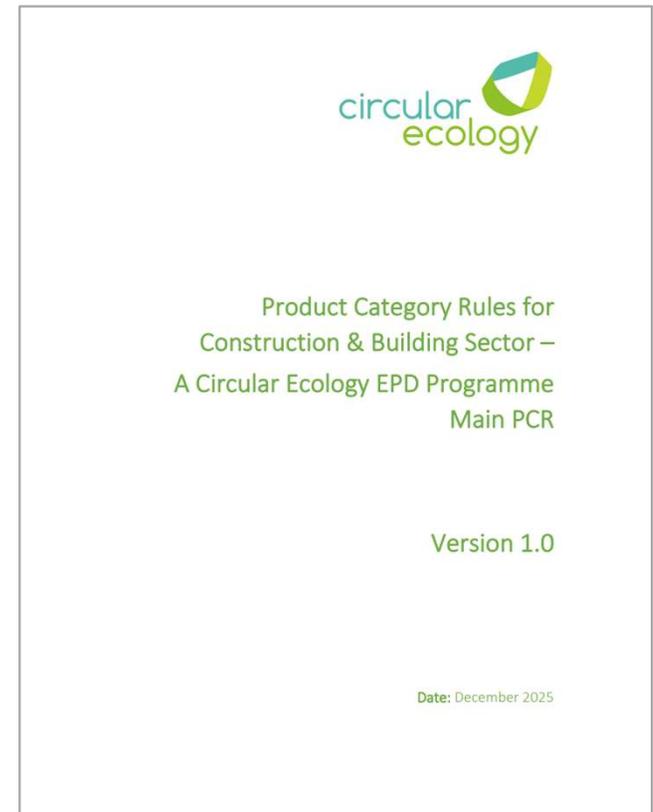
[circularecology.com/epd-programme-key-documents.html](https://circularecology.com/epd-programme-key-documents.html)



# Circular Ecology EPD Programme

## Product Category Rules for Construction Sector

- Defines the principles and methodological rules for developing EPDs for construction products and services within the Circular Ecology EPD Programme
- It is intended to **align with international best practice**, including lifecycle assessment calculation requirements from the ECO Platform (we intend to apply to join once we have enough published EPDs)
- Triple panel peer reviewed:
  - Dr Jane Anderson (Chair)
  - Dr Matthew Fishwick
  - Chloe McCloskey



# Eligible Standards

- Our construction products PCR is aligned with:
  - **EN 15804:2012+A2:2019** – Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products
  - **ISO 21930:2017** – Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services
- Climate declarations (carbon only) are also permitted

# Improving LCA Quality

- One of our core aims is to **improve overall quality** of the LCAs being used to produce EPDs
- We have therefore implemented the below requirements:
  - EPD **verifier is required to have access to the LCA model**, at a minimum through a screenshare call
  - Verifier is required to **check key emissions factors for plausibility**
  - **Evidence of primary data to be provided** as part of the verification process
  - **Most recent versions of background LCA databases** should be applied (with 1 year grace period for transition)
  - Various **reporting requirements for transparency around key assumptions**

# Scaling Carbon Reductions Initiative (SCRI)

All EPDs include a contribution 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>



## Summary

# How to Get Started with the Circular Ecology EPD Programme

- Circular Ecology are the programme operator, but are also able to help with:
  - Conducting the Life Cycle Assessment
  - Verifying the EPDs
  - Arranging a third party verifier
- If you are a manufacturer or brand owner, feel free to contact us to discuss your interest in producing EPDs
- If you are an LCA consultant, it is recommended to check out our PCR and GPI to assess suitability to publish through our programme, contact us for a quote for EPD programme fees
- If you are a verifier, we intend to build up our network of approved verifiers as the programme grows

# Key Information

More information about the Circular Ecology EPD Programme can be found at:

[circularecology.com/epd.html](https://circularecology.com/epd.html)

Here, you can find:

- **Key Programme Documents** (GPI, PCR, Verification Template)
- **The EPD Library** (will publish first EPDs once verified)
- **EPD Programme Fees** (fee structure information)
- **Frequently Asked Questions (FAQs)**



# Today's Webinar - Recap

- ✓ The steps involved in producing an EPD
- ✓ The role of LCA in EPDs
- ✓ Primary data, secondary LCA data, software & tools
- ✓ Bringing it all together
- ✓ Introduce the Circular Ecology EPD Programme

# Next Webinars

Next Webinar:

- **An Introduction to Bespoke Carbon Datasets, Thursday 26th March 2026**

Watch our 2025 webinars on demand on our website:

- Carbon Offsetting, Neutrality, & Tree Planting
- Whole Life Carbon in Construction: What You Need to Know
- Product Carbon Footprints: What You Need to Know
- ICE Database Insights Series (5x webinars)

More webinars planned throughout 2026 to be announced soon

**Keep an eye on our networks** for more information:

- Website: [circularecology.com](https://circularecology.com)
- LinkedIn: [linkedin.com/company/circular-ecology](https://linkedin.com/company/circular-ecology)
- Eventbrite: [eventbrite.co.uk/o/circular-ecology-107259792351](https://eventbrite.co.uk/o/circular-ecology-107259792351)



# Thank you for watching

Sign up for more information and future updates

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