International EPD Program
GlobalGreenTag

GENERAL PROGRAM INSTRUCTIONS

VERSION 2.3

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1.1	20.10.15	D.Baggs	Updates to incorporate EN15804 and ISO 21930 references and requirements.
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2.0	29.03.2023	Yathu Harikumar, Yasmin Kelly	Combined GreenTag Program Rules with Scheme Document. Added Arbitration, 3rd party verifier independence testing, data use.
2.1	06.09.2023	Yasmin Kelly	The Following sections have been altered: Terms and definitions have been expanded for readability 4.1- Clarify GPI update communication 4.3.2 Clearly defined ability to accept EPDs into the program 6.1 Clarify that GreenTag template is optional 7. Clarified background data and sampling method 7.6 Reference to EPD process verification removed 7.7.2- LCA practitioner and verifier. Update LCA practitioner and verifier organization requirements, Clarify template. 9. Clarify that GreenTag template is optional Additional Acronym explanations have also been added throughout the document to improve readability.
2.2	03.10.2023	Yasmin Kelly	Chapter title for 6.1 was added "ORGANISATIONS CREATING EPDS" 7.0 Data quality requirements were clarified.
3.0	05.12.2024	Jyothi Ajithkumar	PCR updates Technical committee Transparency Rules for Products with under 1 year of data ECO Platform Compliance Annex C: General LCA Methodology

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QUALITY STATEMENT

This Program is assessed under the Global GreenTag Quality Management System (QMS) which is certified to ISO 9001:2015. GreenTag management and employees are committed to providing excellent customer and stakeholder communication and services, as well as committing to the pursuit of continual improvement and environmental and social sustainability within our own organization.

DOCUMENT ABSTRACT

These General Program Instructions have been developed specifically for the administration of the Global GreenTag EPD Program, PCR development, EPD development, and EPD verification processes to support development and dissemination of environmental product-related information that complies with requirements of ISO 14025:2006, Environmental labels and declarations – Type III Environmental declarations – Principles and procedures.

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REFERENCED STANDARDS

ISO 14025:2006	Environmental labels and declarations – Type III Environmental declarations – Principles and procedures. (Equivalent to EN ISO 14025:2010).
ISO 14067:2013	Carbon footprint of products — Requirements and guidelines for quantification and communication
EN 15804:2012+A1:2013	Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products;
EN 15804:2012+A2:2019	Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products;
ISO 21930:2007	Sustainability in building construction -- Environmental declaration of building products

RELEVANT SCHEMES OR BODIES

TGA	Therapeutic Goods Administration
GBCA	Green Building Council of Australia
USGBC	US Green Building Council
IBWI: WELL	International WELL Building Institute

TERMS & DEFINITIONS

For the purposes of this Document, the relevant definitions given in ISO/IEC Guide 2 and IS0 8402 apply, together with the following definitions:

Applicant	The party that is responsible for ensuring that products meet and, if applicable, continue to meet, the requirements on which the certification is based.
Complying Life Cycle Assessment (LCA)	A Life Cycle Assessment (LCA) conducted in accordance with ISO 14040, ISO 14064, or PAS 2050 relevant to the product assessment under consideration. A complying LCA may use partial data derived from third party audited sources such as other ecolabels or LCA or life cycle inventory (LCI) etc.
Environmental Label	A claim which indicates the environmental aspects of a product or service.
Environmental Declaration	NOTE: An environmental label or declaration may take the form of a statement, symbol or graphic on a product or package label, in product literature, in Expert bulletins, in advertising or in publicity, amongst other things.
Environmental Product Declaration (EPD)	A standardised document reporting LCA results that complies to ISO 14025, a GPI and any PCR's that are applicable.
General Program Instructions (GPI)	Defined in ISO 14025 to regulate how a Program Operator functions and defines the Program rules and administration processes.
Global GreenTag International (GGTI)	The Global GreenTag product assessment program, as described by this Standard and its rules of operation operated by Global GreenTag International Pty Ltd and its various country Licensees all under License from Global GreenTag International Pty Ltd. Described herein variously as Global GreenTag^{CertTM}, or GreenTag.
Product Category Rules (PCR)	ISO 14025 defines the rules used to develop an EPD. These rules apply to a specific product category with similar functions and are used to base assumptions, mandate minimum indicators and other reporting requirements.
Program Operator	Defined in ISO 14025 to be an organization that regulates EPDs to ensure they are produced using the relevant rules and standards and publishes them. See ISO 14025 for further information.

OBJECTIVES OF GLOBAL GREENTAG EPD PROGRAM

Global GreenTag^{CertTM} is committed in promoting increased efficiency and choice of preferable, more healthy products that create change in protecting people and nature across the range of countries and markets, based on several objective, quantifiable and verifiable criteria, including quantified ecological and human health impacts associated with the product life cycle.

The main objective of this document is to provide a framework for developing ISO 14025, EN 15804 compliant Environmental Product Declarations (EPDs) as part of the assessment process that products undergoing GreenTag^{CertTM} LCARate certification are subject to as well as EPD's developed on their own. Depending on the purpose and geographic or program intent of the EPD documents may be additionally issued under ISO 21930:2017 and/or EN 15804:2012+A2:2019 for products wishing to claim compliance under various green project rating tool programs with specific EPD relevant credit standards requirements such as BREEAM, LEED, Green Star, Green Mark etc.

However, Global GreenTag^{CertTM} encourages national and international EPD programs to adopt elements of Global GreenTag EPD Program to support the objective of forming the foundation for comparability of product life cycle assessment (LCA) information generated under different efficient EPD programs.

The program supports harmonization of PCRs and mutual recognition with other EPD programs and supports the objectives of the Eco-EPD program.

SCOPE OF THE PROGRAM

Global Green Tag Environmental Product Declarations (EPDs) are compiled using the results of ISO 14040 and ISO 14044 compliant Life Cycle Assessment (LCA) studies conducted in compliance with the requirements of the applicable standards (EN 15804 and ISO 14025). The Product Category Rules (PCRs) for specific construction products are typically elaborated using the core rules contained in EN 15804 which can be used directly in LCA study. This EPD Program enables any organization to generate/communicate the life cycle product information to other clients or other businesses if there is a market demand to do so. EPD's may therefore be generated using any of the following:

1. Global Green Tag PCRs to EN15804: Product Category Rules for Type III Environmental Product Declaration of Construction and interior products to EN15804:2012.
2. Other PCR to EN 15804 developed under EPD Program Operators, other than Global GreenTag, in conjunction with mutual recognition agreements.
3. The core rules contained in EN15804 are critically reviewed in LCA study.

A Global GreenTag verified EPD encompasses the full life cycle, depending on the type of EPD, and is prepared either for a declared unit (e.g., per mass, area, length, volume, or item) or for a functional unit (e.g., area of a building element), based on the type of declaration.

This scheme provides verification and listing of EPD compiled as described above in accordance with the requirements of ISO 14025:2010 and EN 15804:2012. To ensure the transparency of the verification procedure, a report will be generated that documents the overall verification process involved.

This report will be available to any person upon request, whilst adhering to the rules for data confidentiality as set out in ISO 14025:2010 clause 8.3 and the GreenTag General Program Instructions (GPI).

PROGRAM ORGANIZATION

Global GreenTag EPD Program is administered by several parties having separate and mutual interrelated tasks and responsibilities divided into four different types of work, see Figure 1:

1. Administration of the Global GreenTag EPD System (described in section 3)
2. Product Category Rules (PCR) development (described in section 5)
3. Environmental Product Declaration (EPD) development (described in section 6)

4. EPD verification (described in section 7)

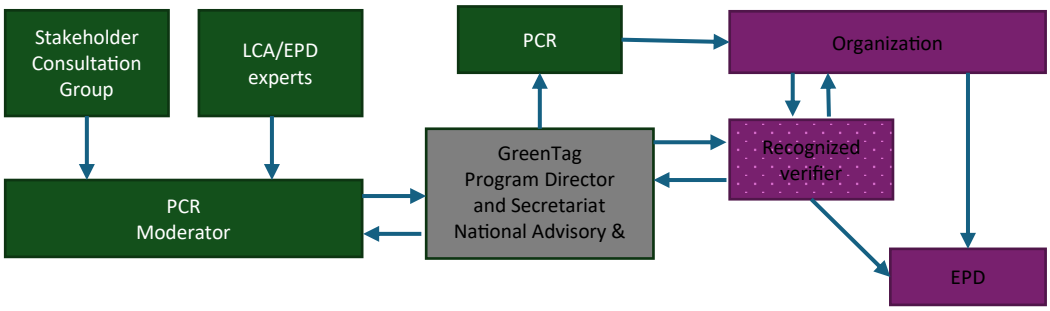


Figure 1 Organizational structure of Global **GreenTag** EPD System: administration, PCR development, EPD development and EPD verification

Global GreenTag^{CertTM} acts as the Program Operator of the Global GreenTag EPD Program. The Program is managed by the GreenTag Program Director and secretariat assisted by a National Advisory Committee (NAC) and an Expert Committee (EC).

The development of PCR documents involves work by a PCR Moderator coordinating the work of LCA/PCR experts and the Product Category Stakeholder Consultation Group. EPDs are developed by the organizations, as companies or branch organizations and the EPDs are verified by recognized third party verifiers as per this document.

PROGRAM ADMINISTRATION

Global GreenTag^{CertTM} acts as the Program Operator and has the overall responsibility for managing the Global GreenTag Environmental Product Declaration (EPD) Program. According to ISO 14025:2006, an environmental declarations program operator has a number of mandatory obligations when fulfilling the duties to manage the EPD Program. These duties will be divided by the Program Director, Secretariat, National Advisory Committee (NAC), and the Expert Committee (EC).

4.1 PROGRAM DIRECTOR AND SECRETARIAT

The Program Director and Secretariat are responsible for the overall management of Program including:

• To prepare and communicate the General Program Instructions	• To ensure that the General Program Instructions are followed
• To monitor changes in procedures and documents and modify the Program and General Program Instructions, if necessary	• To ensure appropriate consultations for maintaining credibility of the Program
• To facilitate participation and involvement of interested parties	• To ensure a credible procedure to safeguard the consistency of data handling
• To guide the development of the Product Category Rules (PCR) documents,	• To establish a transparent procedure for the definition of product categories
• To establish an accepted open consultation procedure for the Program structure and the PCRs	• To ensure the consistency of transparent verification procedures for PCR review, verification of LCA and verification of EPDs

• To define additional tasks for the PCR review procedure and for the external individual verifiers (if found necessary)	• To guide an organization in the selection procedure of competent independent verifiers (if requested)
• To decide upon the necessity to use third-party verifications (specifically in the case of "business-to-consumer communication)	• To decide whether to accept an EPD for publication based on the verification report
• To make publicly available lists and records of PCRs and EPDs within the Program	• To publish all PCRs and EPDs registered in the Program
• To make publicly available explanatory materials	• To establish procedures to avoid misuse of the program and information in the EPDs
• Monitor validity of PCR's and initiate updates with the PCR Moderator when required	• To handle complaints or feedback on published EPDs or other documents
• To monitor updates in EPD standards and practice and update the General Program Instructions and PCRs accordingly	• To communicate new developments in EPD standards and practice to verifies, GreenTag employees and other related parties using newsletters, mass emails, Public consultations and publishing updated on https://www.globalgreentag.com/epd-program.html

4.2 THE NATIONAL ADVISORY COMMITTEE (NAC)

The NAC shall consist of experts from different industry sectors and shall oversee and assist the Secretariat in the overall management of the Program in order:

- to support the work to prepare, revise and update the General Program Instructions
- to appoint members of the EC,
- to consider new potential audience and applications of Environmental Product Declarations (EPDs), and
- to follow the market acceptance and uptake of the Program and suggest activities aimed at promoting the establishment of the Program.

The NAC can decide to place additional selected activities to be carried out by the Secretariat.

4.3 THE EXPERT COMMITTEE (EC)

The EC shall consist of a group of at least three Life Cycle Assessment (LCA) or Environmental Product Declaration (EPD) experts to assist the NAC and Secretariat in order:

- to act as the Product Category Rules (PCR) review panel for considering and approving PCR proposals according to the requirements on PCRs in the General Program Instructions,
- to suggest measures for further development of Expert and LCA-oriented issues within the framework of the Program,
- to consider applications and appoint LCA/EPD/PCR experts to act as external verifiers and suggest measures for the surveillance of their competences, and
- to check that verifications done by individual verifiers are carried out according to the requirements in the General Program Instructions.

The EC shall be constituted in such a manner that their expertise covers as many product categories as possible, if there is need for additional expertise, for example when reviewing PCRs, independent experts can be consulted. The chair of the EC is a member of the National Advisory Committee. The EC shall operate according to routines specified in a separate procedure.

4.3.1 The PCR Moderators

Global GreenTag shall assign a Product Category Rule (PCR) Moderator to each PCR produced. The PCR Moderator will work with the PCR review panel to create and update PCRs. The PCR Moderator shall follow the PCR development procedure detailed in this document in section 5.1.

4.3.2 LCA Consultants

A Life Cycle Assessment (LCA) consultant conducts systematic analysis of environmental impacts over the course of the entire life cycle of a product, material, process, or other measurable activity. LCA models the environmental implications of the many interacting systems that make up industrial production.

The Program Operator can recommend LCA and Environmental Product Declaration (EPD) service providers however any LCA report and attached EPD can be entered into the program, provided that:

- the documents were prepared by individuals with sufficient experience with LCA and with the product category
- Provide evidence there was no conflict of interest; and
- The EPD passes verification using an appropriate GGT or mutually recognised verification checklist, report and communication log.
- Consistently monitor and implement any necessary updates as instructed by Global GreenTag and ECO Platform.

Any LCA provider can apply to be on the recommendation list by contacting the Program Operator at epd@greentag.com and provide the information given below:

- Name of their company
- Contact information,
- A clear and correct description of LCA and EPD projects which the LCA practitioner has worked in the past.
- Sample/reference projects, preferably related to Global GreenTag and our clients and their specific products.

4.4 MUTUAL RECOGNITION BETWEEN PROGRAM OPERATORS

In order to harmonize PCR development and use, as well broaden the use of environmental declarations throughout the globe market, the Global GreenTag EPD Program collaborates with other program operators acting according to ISO 14025:2006 through mutual recognition agreements and seeks to harmonise Product Category Rules (PCRs) to meet the principles of comparability, add up information in the supply chain and avoid unnecessary barriers to trade. Such a mutual recognition shall include the procedures for organisations wishing to register environmental declarations in both programs.

The mutual recognition shall, when relevant, include:

- scope of the mutual recognition (e.g. only for environmental declarations for a specific product category),
- licensing fee structures,
- procedures for harmonisation of PCRs and PCR development,
- procedures for Environmental Product Declaration (EPD) verification, and
- procedures for EPD registration and publication.

A special procedure shall be established between the program operators to ensure that the conditions for the mutual recognition are continuously kept valid. The list of current mutual recognition agreements is available at www.globalgreentag.com.

4.5 GENERAL LCA METHODOLOGY

The general LCA methodology of Global GreenTag International is described in Annex C.

4.6 WEBSITE

The website of Global GreenTag EPD Program is found on https://www.globalgreentag.com/epd-program.html. The Secretariat is responsible for keeping the website up to date with the correct information about the Program and information on registered Product Category Rules (PCRs) and Environmental Product Declarations (EPDs). Any additional information regarding the necessary services can be provided by the Global GreenTag team.

4.7 PCR AND EPD REGISTRATION AND PUBLICATION

The Program Operator shall publish a list of approved Product Category Rules (PCRs) on the website, to make them available to all interested parties, together with complementary information about the parties involved in developing the PCR and contact details of the PCR moderator. Further information on PCR development is found in Section 4.

When an organization wishes to register an Environmental Product Declaration (EPD), the document shall be sent into the Secretariat together with the necessary information. A registration form, and instructions on what information must be provided and the address to send the information are available on the website. More information on EPD development is found in Section 5. The Secretariat shall register and publish approved EPDs on the website supplemented with complementary information about the organization and the overall management work, contact details of reference persons etc. and keep this information continuously updated in a list of all registered EPDs.

EPDs will be kept published until the company contacts the Program Operator for deregistration and withdrawal of the EPD.

Additional to the list of registered EPDs, the Secretariat shall also keep a list of EPDs withdrawn from the official EPD register. Withdrawn EPDs can be made available upon request, provided the acceptance by the organization having the EPD.

4.8 COST AND FEES

There is a fee structure connected to the registration and publication of approved Environmental Product Declarations (EPDs) within the framework of the Global GreenTag EPD Program including a registration fee and an annual fee. The registration fee is to be paid for registration and certification of EPDs. The annual fee is to be paid per organization and covers all EPDs registered by that organization. The organization shall inform the Program Operator when the EPDs are to be deregistered and no longer published. The Program Operator has the right to deregister EPDs if the registration fee or annual fee is not paid in time.

The registration fee and an annual fee are waived for the products receiving EPDs as part of the Global GreenTag^{CertTM} certification for the period the products stay Global GreenTag^{CertTM} certified.

4.9 FEEDBACK OR COMPLAINTS

Any person with feedback or complaints can contact the Program Operator and register feedback or complaint provided:

- The complaint is fully and clearly described;
- The person lodging the complaint is clearly identified and provides contact details;
- The clause or requirement of this document, ISO 14025, EN 15804, ISO 21930 standard or other reference that is the basis of the complaint is provided and the context clearly explained.

Global GreenTag operates procedures for complaints and appeals. Details of this procedure can be obtained on request from epd@globalgreentag.com.

The complaint will be dealt with in accordance with the GreenTag QMS requirements for Complaints including potentially temporarily withdrawing the document subject to investigation and any corrective or preventative actions.

A complaint is deemed to be serious if it is at risk of affecting the complainant's personal or corporate wellbeing or public reputation, if it is liable to create legal ramifications, or if it is likely to affect the GreenTag public reputation; it is considered non-serious if it does not meet above criteria, is procedure based, or of a minor technical nature.

4.10 MANAGING CLIENT INFLUENCE

The Program Operator will ensure that there is not conflict of interest between the client, Life Cycle Assessment (LCA) practitioner, third party verifier, and the Program Operator. All involved parties are required to act in good faith towards Global GreenTag and need to be aware of the potential for a conflict of interest to arise. This includes ensuring there is no conflict relating to Global GreenTag's clients, contractors, or industry interests.

Individuals within the involved Organisations may have private interests that from time-to-time conflict, or appear to conflict, with the Global GreenTag EPD Program. Individuals should aim to avoid being put in a situation where there may be a conflict between the interests of Environmental Product Declaration (EPD) Program and their own personal or professional interests, or those of relatives or friends. Where such a conflict occurs (or is perceived to occur), the interests of Global GreenTag will be balanced against the interests of the staff member and, unless exceptional circumstances exist, resolved in favour of Global GreenTag.

It is impossible to define all potential areas of conflict of interest. If an individual is in doubt if a conflict exists, they should raise the matter with the Secretariat. The Secretariat and Program Director will review the potential areas of conflict with the employee and mutually agree on practical arrangements to resolve the situation.

Failure to declare a potential, actual or perceived conflict of interest or to take remedial action agreed with Global GreenTag, in a timely manner, may result in performance improvement proceedings including withdrawing approved verification status.

4.11 AVOIDING MISUSE

The Program Operator shall strive to avoid misuse of the information provided in the Environmental Product Declarations (EPDs) registered in the program, the use of ISO 14025 and its logotype.

- The Global GreenTag^{CertTM} system logotype is a registered trademark which shall only be used for EPDs which are registered within the program.
- According to ISO 14025, Type III environmental declarations are subject to the administration of a Program Operator. If a document is identified on the market claiming to be compliant with ISO 14025 or EN 15804, but without the involvement of Global GreenTag International or any other program Operator, the secretariat will contact the organization responsible for using the EPD document.

PCR DEVELOPMENT

The Product Category Rules (PCR) development process is managed by the Program Operator who is responsible that the PCR development following the requirements in ISO 14025:2006, EN 15804. The preparation of a specific PCR is managed by a PCR moderator, an expert appointed by the Program Operator. The created PCRs are able to generate consistent results for the same product category while product assessment and also assist in comparability for mutual recognition. Relevant stakeholders are involved in the PCR development or open consultation.

The PCR development process is as follows:

i. Commencement: Appoint moderator, research and consider existing PCRs; announcement on website, interested parties' engagement;

ii. Preparation: using a Master PCR as template with input derived from existing PCRs;
iii. Consultation: Expert Panel, Stakeholder Consultation invitation and comment review;
iv. Approval and publication;
v. Periodic review

5.1 PCR DEVELOPMENT ROLES

Developing Product Category Rules (PCR) is a procedure consisting of the following phases:

1. Initiation
2. Preparation
3. Open consultation
4. Review, approval and publication

A checklist for PCR development is available at https://www.globalgreentag.com/ . After publication, a PCR may be updated and later de-registered if expired and no longer relevant. The primary reference for developing a PCR will be the general program instructions. Some PCR will not be publicly available and can be assessed with permission from the Program Operator only. Most of the PCR generated by the Global Green Tag will have a global scope with all environmentally relevant aspects of the product life cycle.

A time plan shall be developed by the Program Moderator for the PCR development which includes any physical or web-based meetings.

5.1.1 PCR Moderator

The PCR moderator has several tasks related to the development of PCR documents, primarily:

• To identify CPC codes,	• To invite LCA/PCR experts to take part in the development of PCR documents,
• To submit a time plan for the PCR development to the Secretariat, and inform the Secretariat of any changes to the time plan during the development,	• To inform the Secretariat about relevant industry and trade publications when PCR development should be announced,
• To be responsible for the overall drafting of the PCR proposals,	• To help in appointing a Product Category Stakeholder Consultation Group,
• To identify stakeholders to invite to the open consultation,	• To revise the PCR document according to the comments received.(make a short summary of comments included and rejected (and their rationale) and submit it to the Secretariat for publishing on the Program website)
• To draft the final PCR proposal,	• To alert all people being involved in the process about the final outcome of the work and publication of the document on the GreenTag EPD Program website, and
• Maintain as the contact person during the time when the PCR document is being used on the market (e.g. collecting suggestions for improvement in upcoming revisions.)	• Remain as contact person for quality control and improvements whilst PCR documents are current.

5.1.2 LCA/PCR Experts

All interested parties can take part in the work to develop PCR, both companies and organizations. Typically, LCA/EPD experts contribute in the process of the PCR development with their knowledge and expertise in business

sector of relevance for the PCR category under study. This might include expert input to the LCA-based information as well as views on the proper way of presenting the results in the EPD.

Global GreenTag International are preparing EPD based on ISO 14025, EN 15804 with highest accepted level of quality which are also mutually recognized with the proficiency of expert panel of LCA consultants and PCR developers.

An invitation is available on the Global GreenTag EPD Program website for all interested parties to express their interest in joining our PCR review panel. This opportunity is open to individuals who wish to contribute their expertise and insights to the review and development of Product Category Rules (PCRs).

5.1.3 The Product Category Stakeholder Consultation Group

The Product Category Consultation Group is expected to take part in the PCR preparation. The members should be selected to representatively cover knowledge and skills in different sectors of society both nationally and internationally relevant for the PCR under development. Some new protocols/ideas should be adopted to harmonize new and existing PCRs

5.1.4 PCR Public Consultation

All PCRs will be given at least 30-day public consultation and efforts will be made to contact key stakeholders. The PCR will also be made available to the wider public on the Global GreenTag website and a notification will be published in the GreenTag Newsletter. The PCR Moderator will address any concerns brought up by the public and modify the PCR when appropriate. Once this time has elapsed and all concerned have been addressed, the PCR will be sent to the PCR Review Panel for approval. The approved PCR shall be published on the Global GreenTag website and may then be used for developing EPDs.

5.2 PCR DEFINITION

A set of rules for developing Type II Environmental Product Declarations for one or more product categories. The PCR provides the instructions for how the life-cycle assessment (LCA) should be conducted. It sets out what you need to consider, including but not limited to:

- System boundaries, i.e. which processes and stages of the product's life cycle need to be considered
- Declared/functional unit: the amount, weight and service life of the product being assessed
- How to define e.g. the use phase and end-of-life options
- What impact categories need to be assessed in addition apart from the standard set as described in our General Program Instructions (GPI)

5.2.1 PCR Master Document

The Global GreenTag EPD Program adopted a PCR Master Document containing information required to develop a product category specific PCR. The PCR Master Document can be used as guidelines for PCR development and act as a template for the PCR document. PCRs may deviate from the recommendations in the PCR Master Document. Such deviations should be highlighted and are to be approved by the Expert Committee during the Expert review of the draft PCR. The new PCR Master Template will be implemented for all upcoming PCRs starting January 2025.

5.2.2 Content of PCR documents

The PCR shall define the criteria according to assigning a product to a specific category, which parameters are set out to prepare the EPDs, the data quality requirements and the collection and calculation rules for data to be included in the EPD, as well as what kind of information is required and suitable for inclusion into the EPD.

The PCR document shall include:

• Products covered by the PCR	• Product category definition and description (e.g. function, Expert performance and use)
• Goal and scope of the PCR (e.g. functional unit/declared unit, system boundaries, description of data and data quality, cut-off rules and units to be used)	• Materials and substances to be declared in a product content declaration
• Inventory analysis results (e.g. data collection and calculation procedures, and allocation of material flows and releases)	• Pre-determined parameters for reporting LCA data (e.g. inventory data categories and impact category indicators), as appropriate
• Impact category selection and calculation rules, if applied	• Description of the type of information to be included for the downstream processes, i.e. the use and end-of-life stages
• Rules for provision of additional environmental information	• Instructions of the content and format of the EPD
• Information if life cycle stages are not considered and omitted in the EPD, if appropriate	• Validity of the document and renewal Schedule

When the database's choice is relevant for the impacts calculation, the PCR should specify which database should be used for the EPD preparation.

5.2.3 Recognition of PCR's Developed by Other Programs

The Global GreenTag EPD program may make agreements to recognize PCRs developed by other programs in accordance with ISO 14025:2006 that fulfill these Program Instructions specifically regarding:

• Compliance with appropriate standards;	• Functional unit definition;
• Scope and system boundaries;	• Use of attributional LCA approach;
• Impact categories;	• Allocation rules;
• Recycled material and material recycling system boundary setting approach;	• Rules for inclusion of similar products;
• Period of validity;	• Stakeholder engagement process compliance with ISO 4025:2006.

After acceptance of the Secretariat and the Program Director to use the PCR, information specifying the recognized PCRs shall be published on the Global GreenTag website and may then be used for developing EPDs.

5.3 PCR UPDATES

A PCR is updated at a regular interval to ensure its validity for a pre-determined period. An expired PCR shall not be used to develop and register a new EPD and shall not be used to update a published EPD to give the EPD a prolonged period of validity.

An updated version number shall be assigned to an updated PCR or a new registration number if its scope has changed substantially. A PCR can be updated at any time during the validity period when proposed changes are deemed significant and necessary by the the PCR Review Committee. The validity of a PCR can be extended when updated prior to the expiry.

5.3.1 Method for PCR Update

The Secretariat shall inform the PCR Moderator when a PCR needs to be updated. Alternatively, the Secretariat will inform PCR Moderator when significant changes have been proposed during the validity period. The PCR Moderator and the Secretariat shall identify if a PCR shall be updated or deregistered based on market demand.

5.4 PCR DE-REGISTRATION

The Secretariat can de-register PCRs at their discretion to reduce overlapping PCR scopes. The PCR moderator and PCR Committee will be informed of all de-registrations.

EPD DEVELOPMENT

6.1 ORGANISATIONS CREATING EPDS

Organizations creating EPDs for registration and publication shall carry out the following tasks:

- to collect LCA-based information and other relevant additional environmental information to be included in the EPD according to the instructions in the General Program Instructions and the relevant PCR document,
- to convert input data into the prescribed information to be included in an EPD,
- to have the EPD examined by an independent verifier,
- to carry out routine work to follow-up the accuracy of the information in the EPD and to report to the verifier in case of significant changes in the input data occur causing a need for modifying the information in the EPDs when found necessary
- to provide the Program Operator with relevant associated information needed for registration and publication of the EPD,
- Have the option to use the GreenTag EPD template. This is recommended but not mandatory.

6.2 EPD VALIDITY

The maximum validity of an EPD is set for each product category in the PCR but shall not exceed five years after which the declaration must necessarily be revised and reissued, and where certified by Global GreenTag, in alignment with the renewal certification dates. An expired EPD will be withdrawn and removed from the GreenTag website and any other listing provided by the scheme. Similarly, EPDs may also be withdrawn when yearly administration fees are not paid.

During the period of validity, a change in the underlying data that is sufficient to generate a change of ±10% for any one of the declared parameters of the EPD shall be considered significant and in such an instance the EPD shall be recalculated and verified (EN 15804:2012, clause 9).

The organization can choose to let EPDs pass the date of validity and yet continue to publish them on the EPD website. This may be because for example products are discontinued but still available on the market or are still in use. However, in such instances, the organization shall not use the out-of-date EPDs in any promotional or marketing context. Exceptions, however, may be granted by the Program Operator, e.g. if the reference PCR is in the process of being updated.

The EPD owner has sole liability and responsibility for each EPD and therefore shall ensure that Global GreenTag is notified when any EPD require recalculation and verification. (EN 15804:2012, clause 5.5)

6.3 CONFIDENTIALITY

Confidential records are not allowed to be used in any form apart from working on the product or service it is related to. Third parties can access this information only if all the concerned parties agree. This agreement needs to be in writing, dated and signed. Global GreenTag International will safeguard confidentiality of the information obtained during its activities at all levels of its organization, including committees and external bodies or individuals acting on Global GreenTag International's behalf appropriate to the sensitivity of the documents.

Information gained during Global GreenTag International's activities about a particular product or supplier where not in the public domain, will not be disclosed to a third party unless the supplier agrees in written form. If a law requires disclosing to a third party, the supplier will be informed.

Confidential data shall not be made public in any form that breaches non-disclosure agreements binding parties.

6.4 DATA PRESENTATION

Data shall be presented as required by the GreenTag Program requirements and shall be compliant with the reporting requirements of the relevant standard depending on which standard the EPD is declaring against i.e., ISO 14025:2006, ISO 21930 or EN15804.

6.5 ADDITIONAL INFORMATION HANDLING

An EPD may include additional relevant information that relates to the product compliance with standards as per EN 15804.This information must be submitted, reviewed and approved by the party verifier.

6.6 MANUFACTURING DATA UNDER 1 YEAR

Actual manufacturing data for a minimum of one year should be used to generate an EPD, unless otherwise justified. GreenTag acknowledges the following justifications:

- The factory has been in operation for less than one year.
- The product or similar products have been produced for less than one year.
- Any other justification deemed appropriate by Global GreenTag.

The following requirements must be followed in such cases:

- The LCA consultant may base the assessment on the available data.
- The EPD must clearly state on the front cover: "This EPD is based on less than one year of data."
- The validity of the EPD will be restricted to a maximum period of two years.
- The EPD owner must begin updating the EPD as soon as one year of manufacturing data is available.

6.7 MAINTENANCE OF EPD

During the period of validity, GreenTag will contact the EPD owner on an annual basis to request a signed declaration that no changes have occurred to the product or production process or request information on any factors that resulted in a ± 10% change in any of the declared parameters. If any such changes have occurred, the EPD owner shall submit a new EPD for verification (see Section 6.2, Validity of the EPD).

6.8 WITHDRAWAL OF EPD

During the period of validity, in accordance with ISO 17067:2013, if a non-conformity with the certification requirements is substantiated the EPD owner shall be formally notified and the EPD shall be withdrawn and removed from the GreenTag website and any other listing provided by the scheme.

GreenTag implements a suspension and withdrawals procedure for handling cases of non-conformances through its Certification Scheme Quality Management System.

EPD VERIFICATION

Verification is an important part of ensuring EPDs contain reliable information and data in order to secure a common quality level. In order to be published, EPDs must have been successfully verified by a competent verifier. EPD verification involves bodies checking the competence requirements of verifiers, the verifiers and the organizations creating EPDs. The purpose of verification is to ensure the accuracy of LCA data and other information contained in the EPD and to ensure the process requirements of ISO 14025, EN 15804 (optional) and the General Program Instructions have been followed. EPD Verification shall cover main issues including:

i. LCA data, collection methods and calculations and compliance with ISO 14040, ISO 14044 and EN 15804;
ii. Compliance of LCA calculations with PCR requirements and calculations;
iii. Environmental Performance and any additional content;
iv. Accurate relevant methodology should be adopted to carry out;
v. Inventory analysis results and impact assessment calculations;
vi. Unit process definition is as per the PCR with reliability of the data validity;
vii. All relevant information is documented for each unit process, information module and PCR module, is consistent and understandable sufficient to allow independent verification; and
viii. Compliance with but not responsibility for compliance with environmental law by the applicant organization.

All data is to meet the data quality requirements of EN 15804+A2 section 6.3.8.2 and ISO 14044 section 4.2.3.6.

The EPD verification will also check:

1. The overall structure of the EPD will be credible, unbiased, transparent, and easily understandable.
2. Proper direction will be in the EPD for finding supplementary explanatory materials.

Verification and appointment of verifiers are dealt with within the individual EPD programs. Verifiers are related to specific EPD programs as this appears to be more practical (e.g. For language issues and local market requirements).

Upon initiating a Verifier the Program Operator will provide an appropriate Verification Checklist and Report template. Verifiers must use this template and enclosed Communication Log to complete and document the verification process.

7.1 APPLICATION FOR VERIFICATION OF AN EPD

To apply for verification of an EPD, members of any mutual recognition scheme shall complete the Global GreenTag Verified EPD Scheme Application Form and return it to Global GreenTag. On receipt, all applications are checked for eligibility and completeness. A formal quotation is prepared which includes the scope of verification, terms and conditions and the fees for the review and reporting.

7.1.2 Data Submission

Data to be submitted for verification includes:

• The LCA background report submitted should contain the following data for a desktop review.	• The completed EPD
• General information	• Goal and intended application
• Unit of assessment (functional / declared unit)	• Detailed product description (composition, technical specification) including process flow diagram

• Description of system boundaries (modules assessed)	• Criteria for exclusion of inputs and outputs
• Data selection and quality requirements	• Development of product level scenarios
• Data collection and calculation process	• Allocation procedure
• Mass balance	• Assignment of life cycle data to datasets of an LCA-software or database source
• LCIA results per modules or unit processes, e.g. structured according to life cycle stages in accordance with EN 15804 requirements;	• LCIA results per production plant/product if generic data is declared from several plants or for a range of similar products.
• Any other information not already provided in the LCA Background but considered necessary in aid of the verification of the EPD should also be submitted as additional information.	

7.2 VERIFICATION PROCESS FOR AN EPD

A GreenTag appointed verifier will review the submissions to confirm conformance of the LCA study and the resulting EPD with the requirements of ISO 14025:2010 and EN 15804:2012 (where applicable) using the appropriate Global GreenTag provided EPD verification checklist which covers the required standards.

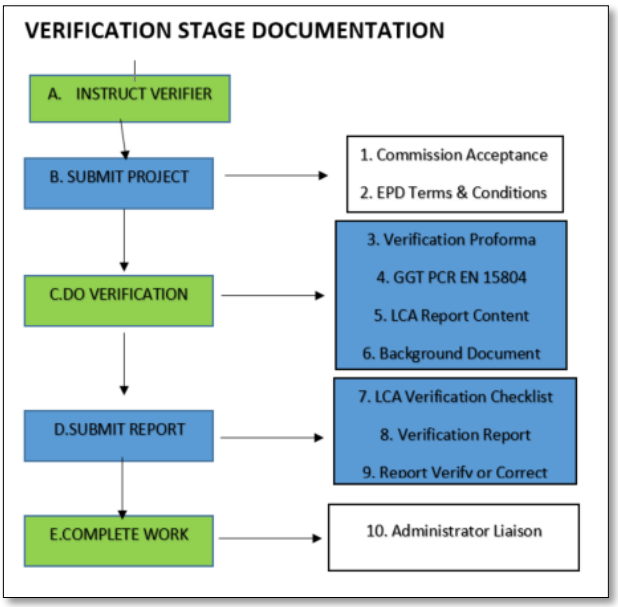
Where there are areas of non-conformance or queries, the EPD is returned to the applicant for corrective action and/or response to the queries. It is important that the Applicant seeks clarity if the Verifiers comments are unclear. Draft corrections may be submitted to the Verifier to check if the comments have been interpreted correctly. Following this, the Applicant is required to resubmit the EPD for a final round of verification.

Important: Resubmission is permitted only once, and if there are still areas of non-conformance, the EPD will be considered unsuccessfully verified and the verification process concluded.

7.2.1 Principles for Verification

The verification shall cover the following main areas based on the GPI, the PCR, and relevant standards:

- The presentation of environmental performance in the EPD,
- The way the LCA-based calculations have been carried out,
- The underlying data collected and used for the LCA calculations, and
- The presentation of additional environmental, social, and economic information and any other information included in the EPD.



7.3 DELIVERABLES TO THE EPD OWNER (APPLICANT)

Following successful verification:

- A Global GreenTag Verified EPD
- Publication on www.globalgreentag.com
- Completed Verifier Checklist, Report and communication Log will be retained on file by the Program Operator. Program Operator will provide the Verification report to relevant parties on request. If the verification is unsuccessful:
- Completed Verification checklist,showing the outcome of the verification process and clearly identifying the reasons for the unsuccessful verification.

Completed Verifier Checklist, Report and Communication Log will be retained on file by the Program Operator. Program Operator will provide the Verification report to interested parties on request.

7.4 COMPETENCE REQUIREMENTS FOR VERIFIERS

The verifier of the EPD will have a certain quality level of competence and qualification for the verification process. Global GreenTag strive for the highest level of quality that can currently be expected on the market, and which can be mutually recognized.

The person conducting the verification will be independent and possess the necessary competencies as listed in the table below. EPD verifiers are selected from applicants who meet the verifier requirements outlined in the Expression of Interest (EOI), which is available on the GGTI EPD website,https://www.globalgreentag.com/get/files/1277/verifier-lca-consultant-eoi-2024_v2.pdf

	TOPIC KNOWLEDGE	CRITERIA
1	**GENERALL ENVIRONMENTAL MATTERS**	Industry related
		Product related
2	**GOOD ON PROCESS & PRODUCT**	Property Development Expertise & or Asset Management Experience
		Infrastructure & Industrial Operation &/or Manufacture Building Product
3	**IN DEPTH OF ISO 14040 LCA**	>5 years' experience in ISO 14040 LCA method series related practice
4	**IN-DEPTH ON STANDARDS RELEVANT TO**	ISO 14025:2006 & EN15804:2012+A1:2013
		Environmental labelling & EPD declarations
		General competencies in accordance with ISO 17065 requirements;
5	**UNDERTAKEN ≥3 INDEPENDENT 3RD PARTY LCA REVIEWS COMPLIANT ISO 14044:2006 SECT 6 REQUIREMENTS**	>1 LCA study involving assessment of multiple environmental impacts
		Shown by evidence of critical independent review of in/ external studies
		In panel review according to ISO 14044 Section 6.2 & 6.3
6	**OVERALL REGULATORY FRAMEWORK IN EPD INTRODUCED**	Refer General Program Instructions, section 6
		Compliance with Relevant Environmental Legislation
7	**IN-DEPTH Knowledge of Global GreenTag EPD Program**	Global GreenTag General Program Instructions.
8	**AUDITING MANAGEMENT SYSTEMS**	Following ISO 19011 Guidelines criteria for auditor skills & competences

7.5 CHECKING THE COMPETENCE REQUIREMENTS OF VERIFIERS

Examining the compliance of external verifiers with the prescribed competence requirements as well as carrying out supervisions of verifiers are vital parts in an environmental declarations program for rising and maintaining market acceptance of EPDs. Some of the procedures adopted by the Global GreenTag for checking the competence of the verifier is ensured by:

- The verifier skills in certain product groups are selected according to their experience in their CV and efficient EPD/PCR training will be provided to the verifier by the Program Operator.
- The technical information regarding LCA/EPD standardization work, their corresponding networks, platforms information will be regularly updated by the verifier to keep it up to date.
- The language skills of the verifier are ensured before accepting the verification task and further necessary training is provided by the Program Operator before committing any specific projects.
- The individual verifiers are trained to remain proactive in the technical knowledge of verification in their respective field of environmental declarations according to specific products.

At minimum verifiers must achieve a score of 5 in the table below:

Topic		Experience Criteria	Barrier to		Score	**Max**	Min

Metrics	Scoring	minimum	Pass entry	0.5	1	2	3	4	score	score
1. Verification & Audit Practice	Mandatory	Years' work[1]	3 years	1	3-4	5-8	9-14	>14	4	1
		Number Reviews[2]	3 reviews	1	3-5	6-15	16-30	>30	4	1
	Optional	Scores[3] for EPD Scheme, ISO14001 or other EMS		Accredited 3rd party reviewer for >1 EPD Scheme					2	
				Attended courses on environmental audits					1	
				Chair >1 review panel for LCA study or Enviro					1	
				Qualified trainer in environmental audit course					1	
2. LCA methodology & Practice work	Mandatory	Years' work[4]	3 years	1	3-4	5-8	9-14	>14	4	1
		LCI datasets[5]	5*(10 LCI)	10	50-80	81-150	151-300	>300	4	1
	Optional	LCA projects & papers		> 5 articles in peer-review journals or books					1	
				Worked >3 research projects on issue/case					1	
3. Technology[6] or experience represented by LCI datasets	Mandatory	Recent years[7]	3 years	1	3-4	5-8	9-14	>14	4	1
	Optional	Formal Scientific		At least one PhD obtained					1	
				≥1 Master thesis or equivalent completed					0.5	
		Ex Private		≥ 3 years' experience in professional work					1.0	
		In Private Sector		0.5 point for each added industry sector up to 5					2.5	0.5
Point Score				Overall Maximum Possible					32	5

The independent verifier who would like to perform verification of EPD shall have a minimum point score of 5 out of maximum 32 mentioned in the table above which primarily focuses on the three important metrics which are:

- Verification& Audit practice
- LCA methodology& practice work
- Technology or experience represented by LCI datasets.

Most verifiers of the GGTI include have profound experience in LCA methodology.

7.6 VERIFIERS REVIEW AND APPROVAL

Verifiers shall review EPDs from different viewpoints including:

- the accuracy of the data used for the LCA calculations,
- the way the LCA-based calculations has been carried and their compliance with the calculation rules set up in the PCR,
- the compliance of product related environmental laws and processes associated with LCA methodology. Any other additional environmental information is included in the declaration.

[1] Years of experience in the field of review & audit in the environmental field
[2] Number of reviews as a reviewer, or ISO 14025 compliant verifications of EPDs, or LCI data sets
[3] Additional scores are complementary & scores are maxima unless otherwise stated e.g. 1 point not 5 for peer-reviewed LCA papers
[4] Years of experience in LCA work, starting from University Masters or Bachelor degree if Master thesis on LCA
[5] Participant in LCI dataset development/modelling in LCI database as verified or documented. 10 data sets = 1 "experience
[6] Qualification of technologies or activities knowledge is according to NACE code classes (*Regulation (EC) No 1893/2006 of the European Parliament & of the Council of 20 December 2006*. Equivalent classifications may be used. Experience in sub-sector is valid for whole sector
[7] Years of professional production, R&D or environmental work in private sector, technology or system of LCI under review

- the presentation of environmental performance in the declaration and the documentation of the review and positions taken in a verification report.

If stakeholders (verifier, LCA practitioner, competitor, user of EPD, etc.) have comments, questions or suspect an error in the EPD issued by Program Operator, this issue should be brought forward to the respective Program Operator. The Program Operator has an arbitration procedure in place for handling any disputes and complaints concerning the quality and validity of the EPD and sufficient information can be provided by epd@globalgreentag.com.

Global GreenTag International follows the below verification procedures in developing an EPD for our clients:

- **EPD verification**: This internal verification process is conducted by an individual verifier/accredited certification body who checks the precision of the LCA data and controls/eliminate any errors in the calculation process. Information regarding environmental, social and economic aspects which are present in the EPDs are also analysed by an individual verifier/ accredited certification body.

7.7 VERIFIER INDEPENDENCE

7.7.1 Principle

Each source of data and information regarding the EPD program will be independently verified by the verifier. The verifiers do not have any conflict of interest regarding the execution of the LCA or the development of the declaration as they are not involved in any stage of LCA project.

There is no economic pressure on the verifier irrespective of the outcome of the result of verification of the EPD program. The payment to the verifier is settled in advance to secure independence of the verifier and is undertaken at a fixed fee.

The Program Operator will not alter (improve) the result of the assessment in favor of the product manufacturer because improvement is another part of the certification process. As the assessment is impartial with the product details and process involved which is a common requirement for inspection by the certification bodies.

7.7.2 Requirements

The verifier will work independently and will not influence or be influenced by the manufacturer and / or the LCA practitioner, the latter will answer questions by the verifier and if needed substantiate claims or meta-information on data. Such clarification often leads to the elimination of errors or improves the background report.

The Program Operator will organize the following:

1. 3rd party verification process: Independent 3rd party verification is mandatory. This means that the verification is based outside the organizations of the manufacturer.
2. Confirm that the LCA practitioner and verifier are not operating under the same organization.
3. Prevent influence or pressure from manufacture or LCA practitioner on the verification.

The risk of pressure will be limited in the following ways:

1. The Program Operator has built in system to solve potential conflicts between manufacturer, LCA practitioner and verifier for the EPDs.
2. Verifier paid in advance and payment is independent of the outcome of the verification.
3. During verification, the Program Operator offers the possibility for verifier to discuss problems during verification.

USE OF THE MARK

Once an EPD has been verified, the EPD provider can use the GreenTag Certification Mark, in accordance with GreenTag's Rules for the Use of the Mark. If more information is needed about the usage of the mark, contact the Program Operator at the moment. For more information about the rules of the mark see: https://www.globalgreentag.com/get/files/1032/rules-for-use-of-mark-services.pdf.

It is essential that the Program's credibility is maintained throughout the service to the client. Also, the program works to ensure that GreenTag trademarks are used correctly in format to the requirement from the service provider.

The logotype may be used by organizations with EPDs currently registered with the Program for a specific product or service to EPD owners. It may be used in the following ways:

a. On the EPD.
b. On product specific promotional material (e.g. advertising, brochures, and website pages) for the organization's product or service covered by the EPD or on specific products covered by the EPD and/or their packaging materials.
c. On general organization promotional materials (e.g. advertising, brochures, business cards, websites).

OTHER SUPPORTING DOCUMENTS

In addition to this scheme document and the documents noted in sections 4, 8, 9 and 10, the scheme operates through other standard documents.

Together with the above, the documents below constitute the GTTI EPD Program Documents as updated from time to time:

- EPD Terms and Conditions of Use (GREENTAG Standard Terms and Conditions)
- EPD Template (not mandatory but recommended)
- PCR Master Template
- Sub-PCR Master Template
- EPD Verification Checklist and Report Templates for each type of EPD (ISO 14025, EN15804, ISO 21930:2007 etc.)

Relevant standards including ISO 17065, ISO 14025 and EN 15804 compliant projects and client details can be accessed on https://www.globalgreentag.com and necessary supporting documents regarding project services can be provided by **epd@globalgreentag.com**.

ANNEX A: USE OF EPD INFORMATION

An Environmental Product Declaration (EPD) reports the life cycle story of a product in a single, comprehensive report. The EPD provides information about a product's impact upon the environment, such as global warming potential, smog creation, ozone depletion and water pollution. EPD can be used externally for marketing materials and internally for the improvement of product manufacture, or process efficiency. The information provided in this annex is only intended as general guidelines and may not be complete.

Any environmental claims based on the EPD and use of the EPD logotype should meet the requirements in ISO 14021 (Environmental labels and declarations - Self-declared environmental claims), national legislation, and best available practices in the markets in which the EPD will be used and should not be used in any program unless approved by the Program Operator.

An organization developing an EPD cannot precisely determine the audience for the document. For an EPD intended for B2C communication, ISO 14025 sets up additional principles that shall apply.

ANNEX B: TERMS OF FOR EPD DATA

Global GreenTag International EPD Program acknowledges that EPD's are intended to be used for business to business, and business to consumer communication. All EPD use must be comply with Global GreenTag's General Terms and Conditions, specifically section 15.0 on copyright. Additional rules are listed below:

All data in the EPD is owned by the original EPD owner and the owner is usually the manufacturer or the commissioner of the EPD.EPD owners are listed on the EPD document.

It is possible to use EPD data for any application provided it follows the copyright rules stated in GreenTag's Terms and Conditions.

There is no transfer of ownership to the user of the data from the EPD. The user is not allowed to redistribute, sell or commercialize the data for data products without written approval from Global GreenTag.

The user of the data may only use the data as it is.

Please note that the Terms and Conditions are governed by Australian Law. For any enquires about rules of use please email epd@globalgreentag.com

ANNEX C: GENERAL LCA METHODOLOGY

C:1 GENERAL LCA METHODOLOGY AND CALCULATION RULES ACCORDING TO EN15804

Construction Products:

This Annex includes general LCA methodology to be used in EPDs published in Global GreenTag EPD programme.

As per ISO 14040/ ISO 14044 Life Cycle assessment Methodology Framework consist of 4 phases: Goal and Scope definition, Life Cycle Inventory Analysis, Life Cycle Impact Assessment and Interpretation. The general LCA method in this annex is according to EN15804, product category rules for construction products. The ECO EPD life cycle assessment calculation rules shall comply with ECO platform standards and guidelines.

The environmental information of an EPD covering all life cycle stages and module D (cradle to grave and module D) shall be subdivided into the modules A1–A3, A4–A5, B1–B7, C1–C4 and module. The information of modules within any life cycle stages are communicated depending on the type of EPD. The modules are explained section C4.1 below.

C2: DECLARED UNIT/ FUNCTIONAL UNIT

Based on the goal and scope of EPD, the EPD may relate to specific functions and scenarios using functional unit or declared unit. The functional unit or declared unit shall be clearly defined and measurable. The functional or declared unit provides the reference for combining material flows associated with the construction product and allows calculation of environmental impacts for the selected stages of the construction product's life cycle at the building or construction work.

C2.1 Functional Unit

The functional unit of a construction product shall specify:

- the application of a product or product groups covered by the functional unit;
- the reference quantity for the functional unit when integrated in the construction works;
- the quantified key properties, when integrated into a building, for the functional use, quantified performance characteristics or minimum performance of the construction product, taking into account the functional equivalent of the building;
- the minimum performance characteristics under defined conditions shall be fulfilled over the defined time period of the functional unit;
- a specified period under reference in-use conditions considering the RSL. If the functional unit uses a different time period than the RSL, the RSL shall be given as technical information in the EPD.

For the development of scenarios, for example for transport and disposal, conversion factors to mass per declared or functional unit shall be provided.

C2.2 Declared Unit

The declared unit shall be applied if a functional unit cannot be defined properly. An EPD based on a declared unit may cover all modules of the life cycle stages. The declared unit in the EPD must be one of those listed in EN 15804, section 6.3.3, it must be compliant with the declared unit in reference PCR.

For the development of scenarios, conversion factors to mass per declared unit shall be provided. An EPD based on a declared unit may include one or more alternative scenarios for its information modules.

C3: Reference service life

The manufacturer must provide the RSL information to be included in an EPD that addresses the use stage. The RSL should be specified under clearly defined reference in-use conditions. For EPD based on functional units, the reference in-use conditions used to define the RSL, functional unit and any scenarios shall be consistent.

C4: System boundaries

LCA is conducted by defining product systems as models describing the key elements of physical systems. The system boundary defines the unit processes to be included in the system model.

C4.1. Life cycle stages

A1-A3: Product stage, information modules

The product stage includes:

- A1: raw material extraction and processing, processing of secondary material input (e.g. recycling processes)
- A2: transports to the manufacturer of the product
- A3: manufacturing of the product
- A1-A3 processing up to the end-of-waste state or disposal of final residues including any packaging not leaving the factory gate with the product

A4-A5: Construction process stage, information modules

The construction process stage includes:

- A4: transport of the product to the building site/ storage/user
- A5: installation of the product
- A4-A5 Storage of products, including the provision of heating, cooling, humidity control, etc.
- A4-A5 wastage of construction products
- A4-A5 waste processing of the waste from product packaging and product wastage during the construction processes up to the end-of-waste state or disposal of final residues;

B1-B5: Use stage, information modules related to the building fabric

The use stage, related to the building fabric includes:

- B1: use or application of the installed product
- B2: maintenance

The boundary of "maintenance" shall include in addition:

- The production and transportation of all components and ancillary products used for maintenance, including cleaning products.
- The transportation of any waste generated from maintenance processes or related activities.
- The end-of-life management of waste resulting from transportation and maintenance processes, including any components and ancillary materials that are removed. B3: repair

- B3: repair

The boundary for "repair" shall include:

- The repair process of the component's repaired part, which encompasses:
  - The production of the repaired part and any ancillary materials.
  - The use of related energy and water.
  - The production and transport aspects, as well as impacts associated with any material waste generated during the repair process.
- The transportation of the repaired part and ancillary materials, including the production aspects and impacts of any waste generated during repair-related transportation.
- The end-of-life management of waste resulting from both transportation and the repair process, including any removed parts of the component and ancillary materials.

- B4: replacement

The boundary for "replacement" shall include:

- The production of components and ancillary materials used for replacement.
- The replacement process, including water and energy use, as well as the production impacts and waste generated.
- The transportation of the component and ancillary materials, including impacts from material losses or damage during transit.
- The end-of-life management of any losses incurred during transportation and the replacement process, along with any removed components and materials.B5: refurbishment

- B5: refurbishment

Restoration activities should be included within refurbishment. The boundary for refurbishment shall include:

- The production of components and ancillary materials used.
- The refurbishment process, including water and energy use, along with waste impacts.
- The transportation of components and ancillary materials, including impacts from any losses during transit.
- The end-of-life management of losses from both transportation and the refurbishment process, including removed components and materials.

B6-B7: use stage, information modules related to the operation of the building

The use stage related to the operation of the building includes:

- B6: operational energy use (e.g. operation of heating system and other building related installed services)
- B7: operational water use

C1-C4 End-of-life stage, information modules

The end-of-life stage for a construction product starts when it is replaced, dismantled, or deconstructed and no longer serves a functional purpose.

The end-of-life stage includes:

- C1: de-construction, demolition
- C2: transport to waste processing
- C3: waste processing for reuse, recovery and/or recycling
- C4: disposal

D: Benefits and loads beyond the system boundary, information module

Module D includes:

- D: reuse, recovery and/or recycling potentials, expressed as net impacts and benefits.

For products in the Scope of EN15804 comprehensive declaration of modules A1-A3, C and D as a minimum requirement, with exceptions mentioned in EN15804+A2 chapter 5.2.

Only products which fulfil all three of the conditions below shall be permitted to be exempt from this requirement:

- the product or material is physically integrated with other products during installation so they cannot be physically separated from them at end of life, and
- the product or material is no longer identifiable at end of life as a result of a physical or chemical transformation process, and
- the product or material does not contain biogenic carbon.

C4.2: Pooled Energy resources with contractual agreements

Energy resources with contractual agreements must be compliant with ECO Platform requirements. Contractual instruments can include energy attribute certificates, renewable energy certificates (RECs), guarantee of origin (GOs) or green energy certificates.

For an entity producing more than one product, pooled energy resources with contractual instruments shall not be virtually allocated to specific products unless a separate energy supply and contract is in place.

Electricity Rules:

In cases where GO is accepted, there will be no electricity double counting. Also, if databases lack residual mix data, note this must be mentioned in the project report. Consumption mixes without GO will be presented as additional information. If GOs are not permitted, all EPDs must use the national consumption mix for electricity generation.

However, residual mix or GOs can still be included as additional information within the EPD, either presented as textual details or within a result table.

Biogas Rules:

Biogas usage should follow specific rules based on its source and certification. For biogas from the gas network, biogas certificates or GOs must be used if the supplier guarantees compliance with tracking and traceability requirements, as per EN 15941. If no certificates are available, the residual mix applies. For biogas from a directly connected supplier, life cycle data can be used if there is a dedicated pipeline or supply connection with no contractual instruments sold to third parties; otherwise, the residual mix applies. Internally generated biogas can use its life cycle data if no contractual instruments have been sold to third parties; otherwise, the residual mix applies. Until the AIB system provides guidance or datasets for residual gas mixes, these must be calculated using the AIB guidance for green electricity as closely as possible, supplemented by appropriate background database information.

C5: DATA QUALITY REQUIREMENTS

The data quality used to calculate an EPD shall be addressed in the project report (as per ISO 14044:2006). The data quality requirements shall be compliant to EN 15804 and EN15941.

The following are the specific requirements as per EN15804:

- The documentation format and data sets for the LC inventory data used in the LCA modelling shall use the current ILCD format and nomenclature as defined in the document, “International Reference Life Cycle Data System (ILCD) Handbook - Nomenclature and other conventions”;
- Guidance for selecting and utilizing generic data is provided in CEN/TR 15941.
- Generic data must be verified for plausibility through methods such as mass balance, energy balance, comparison with indicators from reviewed or verified data sets, or comparison with other relevant sources.
- Data sets shall be complete according to the system boundary within the limits set by the criteria for the exclusion of inputs and outputs
- Data sets should be as current as possible. They must be valid for the current year and represent a reference year within 10 years for generic data and 5 years for producer-specific data.
- The reference year is defined as the year that best represents the overall inventory, considering the age and representativeness of specific and background data. It is not necessarily the year of modelling, calculation, or publication. Validity pertains to the date up to which the inventory remains sufficiently valid with respect to documented technological and geographical representativeness.
- Data sets shall be based on 1 year averaged data; deviations shall be justified;
- The time period for accounting inputs and outputs is 100 years from the reference year of the data set. For solid waste disposal of products containing biogenic carbon declared as GWP-biogenic, refer to section 6.3.5.5 in EN15804.

The data quality assessment shall cover at least the following criteria:

- Time-related coverage; refer EN15941 section 6.3 for time related criteria data quality assessment and selection of data for both construction products and buildings.
- Geographical coverage: criteria associated with geographical coverage are explained in EN15941 section 6.4.
- Technological coverage: criteria associated with technological coverage are valid at the product and building level. They are used in both assessment of data quality and selection of data. Refer section 6.5 EN 15941.

Generic data must include data quality assessment information according to EN ISO 14044:2006, covering time, geographic, and technological aspects. The technological and geographical coverage shall reflect physical reality for declared product or product group by considering requirements as per EN15804. The

generic datasets used in the EPD, the type of data quality assessment system used, and the data quality results shall be documented in the project report.

C6: Inventory analysis

Data collection and calculation procedure shall follow the guidance provided in EN ISO 14044:2006. The same calculation procedures shall be applied consistently throughout the study.

C6.1 Allocation of Inputs and Outputs:

Industrial processes often produce multiple products and involve recycling, making allocation complex. When dealing with systems involving multiple products and recycling processes, allocation should be avoided as far as possible. If unavoidable, allocation should be considered carefully and should be justified.

The inputs and outputs shall be allocated to the different products according to clearly stated procedures that shall be documented and explained together with the allocation procedure. The sum of the allocated inputs and outputs of a unit process shall be equal to the inputs and outputs of the unit process before allocation. Whenever several alternative allocation procedures seem applicable, a sensitivity analysis shall be conducted to illustrate the consequences of the departure from the selected approach.

C6.1.1. Allocation procedure for reuse, recycling and recovery

Allocation procedure for reuse and recycling shall follow the procedure defined as in ISO 14044 section 4.3.4. The end-of-life system boundary of the construction product system is set where outputs of the system under study, have reached the end-of-waste state.

In module D the net impacts are calculated as follows:

- Calculate net output flows of secondary material or fuel by summing all outputs and subtracting all inputs for each sub-module (e.g., B1-B5, C1-C4), then for the modules (e.g., B, C), and finally for the entire product system.
- Add impacts from recycling or recovery processes beyond the system boundary (post end-of-waste) up to the point where the secondary material or energy replaces primary production. Subtract impacts from the substituted primary production or energy generation.
- Apply a justified value-correction factor if the secondary material or energy does not achieve the same functional equivalence as the process it replaces.

C.6.2. Information on biogenic carbon content

The biogenic carbon content of a construction product and its packaging must be separately declared, quantifying the amount of biogenic carbon leaving the factory. For wood-based products, this can be measured or calculated according to EN 16449.

If the biogenic carbon content in the product is under 5% of its total mass, declaration is not required. Similarly, if the biogenic carbon content in the packaging is under 5% of the total packaging mass, declaration is not required. However, the mass of the packaging must always be declared.

C7: Impact assessment

According to ISO 14044, in life cycle impact assessment the environmental impacts are expressed as impact category indicators. The EPD shall contain a core set of pre-determined environmental impact indicators. The EPD may also contain additional environmental impact indicators.

C7.1 Core environmental impact indicators

The core environmental impact indicators as per EN15804 are listed in Table below

Impact category	**Indicator**	**Unit (expressed per functional unit or per declared unit)**
Climate change – total	Global Warming Potential total (GWP-total)	kg CO2 eq.
Climate change - fossil	Global Warming Potential fossil fuels (GWP-fossil)	kg CO2 eq.
Climate change - biogenic	Global Warming Potential biogenic (GWP-biogenic)	kg CO2 eq.
Climate change - land use and land use change	Global Warming Potential land use and land use change (GWP-luluc)	kg CO2 eq.
Ozone Depletion	Depletion potential of the stratospheric ozone layer (ODP)	kg CFC 11 eq.
Acidification	Acidification potential, Accumulated Exceedance (AP)	mol H+ eq.
Eutrophication aquatic freshwater	Eutrophication potential, fraction of nutrients reaching freshwater and compartment (EP -freshwater)	kg PO4 eq.
Eutrophication aquatic marine	Eutrophication potential, fraction of nutrients reaching marine end compartment (EP-marine)	kg N eq.
Eutrophication terrestrial	Eutrophication potential, Accumulated Exceedance	mol N eq.
Photochemical ozone formation	Formation potential of tropospheric ozone (POCP)	kg NMVOC eq.
Depletion of abiotic resources -	Abiotic depletion potential for nonfossil resources (ADPminerals & metals)	kg Sb eq.
Depletion of abiotic resources -	Abiotic depletion for fossil resources potential (ADP-fossil)	MJ, net calorific value
Water use	Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	m3 world eq. deprived

The additional environmental impact indicators are listed in Table below.

Impact Category	**Indicator**	**Unit (expressed per functional unit or pe declared unit)**
Particulate Matter emissions	Potential incidence of disease due to PM emissions (PM)	Disease incidence
Ionizing radiation, human health	Potential Human exposure efficiency relative to U235 (IRP)	kBq U235 eq.
Eco-toxicity (freshwater)	Potential Comparative Toxic Unit for ecosystems (ETP-fw)	CTUe
Human toxicity, cancer effects	Potential Comparative Toxic Unit for humans (HTP-c)	CTUh
Human toxicity, non-cancer effects	Potential Comparative Toxic Unit for humans (HTP-nc)	CTUh
Land use related impacts/ Soil quality	Potential soil quality index (SQP)	dimensionless

C8. Content of EPD

C8.1. Declaration of general information

The following items of general information are required and shall be declared in an EPD.

a. the name and address of the manufacturer(s);
b. the description of the construction product's use and the functional or declared unit of the construction product to which the data relates;
c. construction product identification by name (including any product code) and a simple visual representation of the construction product to which the data relates;
d. a description of the main product components and or materials
e. name of the program used and the program operator's name and address and, if relevant logo and website;
f. the date the declaration was issued and the 5 year period of validity;
g. information on which stages are not considered, if the declaration is not based on an LCA covering all life cycle stages;
h. a statement that EPD of construction products may not be comparable if they do not comply with EN15804 in the case where an EPD is declared as an average environmental performance for a number of products a statement to that effect shall be included in the declaration together with a description of the range/ variability of the LCIA results if significant;
i. the site(s), manufacturer or group of manufacturers or those representing them for whom the EPD is representative;
j. the declaration of material content of the product shall list as a minimum substance contained in the product that are listed in the "Candidate List of Substances of Very High Concern for authorisation" when their content exceeds the limits for registration with the European Chemicals Agency;
k. information on where explanatory material may be obtained.

In addition to the above declarations, the table below shall be completed and reproduced in EPD.

Product Category Rules (PCR)	CEN standard EN 15804+A2 2019 serves as core Product Category Rules (PCR); add if any other PCR used		
Sub-PCR	[PCR Name Version number (MM YYYY)]		
Verification Statement	Independent verification of the declaration and data, according to ISO 14025:2010 ☐Internal ☒ External Independent external verification of the declaration and data, mandatory for business-to-consumer communication according to ISO 14025:2010		
Signature	**Name**	**Details**	**Company Logo**
Third Party Verifier	Verifier name	[Company Name] [Address line1] [Address Line 2] [Contact Information] [Website]	

C8.2 Declaration of environmental indicators

To illustrate the product system studied, the EPD shall contain a simple flow diagram of the processes included in the LCA. They shall be sub-divided at least into the life cycle stages of the product: production, and if applicable construction, use and end-of-life

The information on environmental impacts and aspects relating to modules A1–A3, C1–C4 and D shall be included in all EPD. Information modules that generate any input or output flows considered in the declaration of module D shall also be declared.

The EPD shall specify which EPD-type is declared:

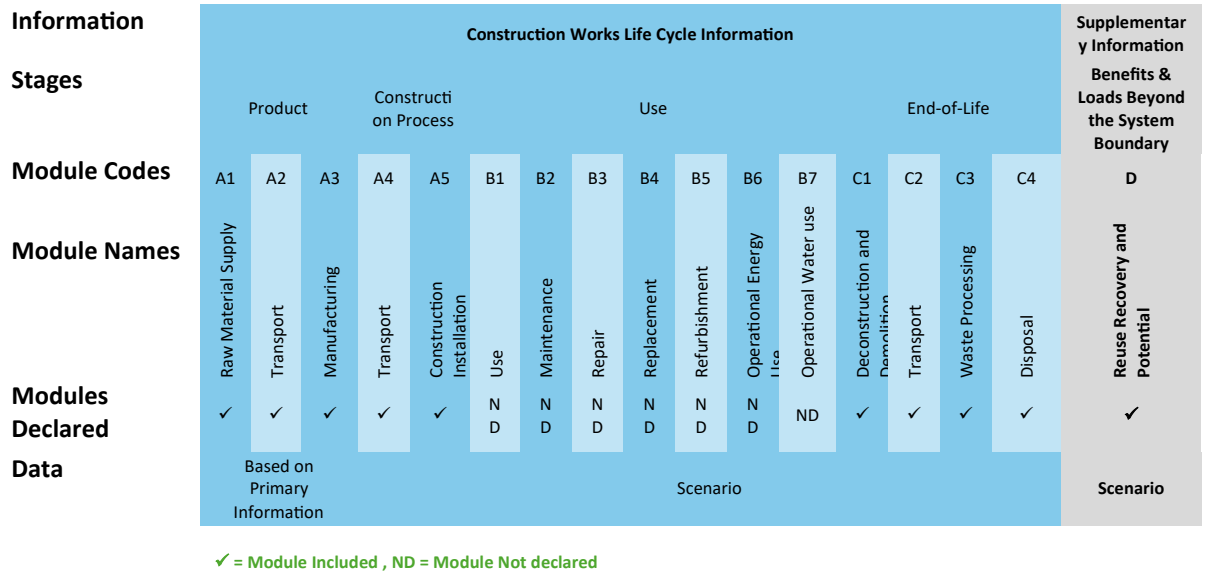
- cradle to gate with modules C1–C4 and module D (A1–A3, + C + D);
- cradle to gate with options, modules C1–C4, and module D (A1–A3 + C + D and additional modules. The additional modules may be one or more selected from A4 to B7);
- cradle to grave and module D (A + B + C + D);
- cradle to gate (A1–A3);
- cradle to gate with options (A1–A3 and additional modules. The additional modules may be A4 and A5).

The core environmental impact indicators shall be incorporated into each module declared in the EPD. Indicators related to resource use and environmental information derived from the life cycle inventory shall be included in the EPD. For further details, refer to EN 15804, section 7.2.4.

Biogenic carbon content information shall be included in the EPD in accordance with EN 15804, section 7.2.5. If the mass of biogenic carbon-containing materials in the product is less than 5% of the total product mass, the declaration of biogenic carbon content may be omitted. Likewise, if the mass of biogenic carbon-containing materials in the packaging is below 5% of the total packaging mass, the declaration of biogenic carbon content for

the packaging may be omitted. Additionally, any supplementary technical information utilised in the assessment must be declared in the EPD

A Product stages Table will also be included in EPD as per EN15804, 7.3. This shall illustrate all declared modules represented using: “ü” and non-declared modules represented using: “ND” Example shown in the Table below



C 9. LCA Report

The project report is a systematic summary of project documentation that supports EPD verification. It must confirm that the LCA-based information and additional details in the EPD meet the requirements of the European Standard.

The results, data, methods, assumptions, limitations, and conclusions of the LCA must be reported completely and accurately.

The project report shall give the following:

General aspects:

1) commissioner of the LCA study, internal or external practitioner of the LCA study;

2) date of report;

3) statement that the study has been conducted according to the requirements of this standard;

Goal of the study:

1) reasons for carrying out the study and its intended application and audience, i.e. providing

information and data for an EPD for business-to-business and/or business-to-consumer

communication;

Scope of the study:

1) declared/functional unit, with definition, including relevant technical specification(s) and calculation rule for averaging data e.g. when the declared/functional unit is defined for:

- a group of similar products produced by different suppliers or
- the same product produced at different production sites;

2) system boundary according to the modular approach, including:

- Omissions of life cycle stages, processes, or data requirements.
- Quantification of energy and material inputs and outputs, considering how plant-level data is allocated to declared products.
- Assumptions regarding electricity production and other relevant background data.
- Relevant assumptions about system boundaries, including calculations of net impacts in module D.

3) cut-off criteria for initial inclusion of inputs and outputs, including the description of application of cut-off criteria and assumptions, and list of excluded processes;

Life cycle inventory analysis:

- A qualitative and quantitative description of unit processes necessary for modelling the life cycle stages of the declared unit, adhering to EN ISO 14025 data confidentiality provisions.
- An overview of biogenic carbon transfers, emissions, and removals across different modules, as well as the biogenic carbon content of the functional or declared unit at the factory gate.
- Sources of generic data or literature utilized in the LCA.
- validation of data which includes the data quality assessment and treatment of missing data.
- allocation principles and procedures, including the documentation and justification of allocation procedures and uniform application of allocation procedures

Life cycle impact assessment:

- The LCIA procedures, calculations, and results, including all additional environmental impact indicators.
- The relationship between the LCIA results and the LCI results.
- References to all characterization models, factors, and methods used as defined in EN15804.
- A statement that LCIA results are relative expressions and do not predict impacts on category endpoints, thresholds, safety margins, or risks

Life cycle interpretation:

- The results.
- Assumptions and limitations related to the interpretation of results as declared in the EPD and for additional impact indicators, covering both methodology and data.
- Description of variance from the means of LCIA results when using generic data from multiple sources or similar products.
- Data quality assessment.
- Full transparency regarding value choices, rationales, and expert judgments.

The project report shall include additional environmental information declared in EPD as required in EN 15804 Standard.