

General Program Instructions

Version 1.3

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EPD Hub Limited

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Key updates in this document

This amended version 1.3 is the applicable GPI and valid for EPDs published from 24 March 2025, or later. A transition period of up to six months is granted for the previous version.

Version	Date	Summary of changes
1.0	1 February 2022	First public version of the document
1.1	6 June 2022	Amendments and clarifications for sister EPDs, project EPDs, design phase EPDs and scaling tables. New processes for verification of Automated EPD Generators and EPD Configurators.
1.2	1 December 2023	<p>Several updates to align with Eco Platform EPD requirements, including express prohibition of mass balance method for feedstock, add background report as a document requirement, and making module B mandatory for electrical products.</p> <p>In addition, allowing multiple additional scenarios for some life-cycle stages, inclusion of verifier guidelines and rules for managing internal verification within EPD publisher organisations.</p> <p>Changed project EPD definition to be for non-published EPDs which are internally verified.</p> <p>Alignment with French decree of 14 December 2021 for regulatory EPDs to be used on the French market.</p>
1.3	24 March 2025	<p>Editorial changes</p> <p>Removal of rules related to EPDs compliant with French regulatory.</p> <p>Update on version of EN 15804+A2:2019 to the latest EN 15804:2012+A2:2019/AC2021</p> <p>1.2 Clarification on the Scope of GPI</p> <p>1.3 Clarification on Supported languages</p> <p>1.6 Clarification that all digital EPDs are based on ILCD+EPD format</p> <p>2.4 Definition of white-label EPDs</p> <p>2.6 Clarification on Environmental impact data covered by the EPDs</p> <p>2.8 Clarification of appendix content that is verified; and ban on extrapolation tables for different performance ratings</p> <p>2.10 Definition of Sector EPD</p> <p>3.2 Definition of system verification</p> <p>3.2 Clarification that tool verification can be done by more verifiers</p> <p>4.2.1 PCR review panel</p> <p>4.4.1 Addition of Procedures for selection of verifiers</p> <p>4.4.2 and 4.4.3 Clarification on impartiality requirements</p>

		Annex I Clarification on EPDs of Multiple products and Multiple Manufacturing sites; and examples of scaling tables Annex III Clarification on Project EPDs Annex IV Rectification on verifier guidelines
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Terms and definitions

The GPI uses the definitions of terms set out in the EPD Hub Core PCR V1.2.

1 Introduction to the EPD program

EPD Hub Limited was founded to digitize EPD processes. EPD Hub Limited operates with full independence in its decision-making, governance, and procedures, with its own staff, management and independent verifiers. EPD Hub Limited has no restrictions on operations on technical or commercial partnerships, processes and operations, other than those arising from its own rules and procedures, accreditations and compliance with governmental regulations. EPD Hub Limited is open to new partnerships and collaborations where it's meeting EPD Hub's and its customers' interest.

Disclosure: One Click LCA Ltd, who provides EPD Generator software to the market, including for customers who publish them via EPD Hub, is one of EPD Hub Limited's shareholders. One Click LCA Ltd's shareholders in turn include PSG Equity and Infravia Capital.

1.1 Program operator identification

The program operator is EPD Hub Limited, whose purpose is to expand transparency and availability of environmental information to understand impacts and to make justified choices.

EPD Hub is created to address the market failure to produce the required amount of trustworthy environmental and carbon impact transparency data to achieve the decarbonization for the construction sector to stay within the 2-degree scenario.

EPD Hub Limited is a member of the ECO Platform association.

Operating this program is the core business of the company, and it is funded by the income from EPD Generator verification, declaration verification and publishing services.

1.2 Scope and Objectives of the program

The scope of the programme encompasses all types of products from any organization, in any country, where there is a market demand to communicate life cycle-based environmental information. The programme operator reserves the right to refuse the publication of EPDs for certain product categories or countries.

EPDs within the programme can be used for a variety of applications and target audiences, including but not limited to business-to-business (B2B) and business-to-consumer (B2C) communication. It is the responsibility of the EPD owner to ensure that any claims made comply with all relevant laws and regulations in the applicable regions.

An EPD in the programme may represent one or more products from a single company (including multiple manufacturing sites) or an average product across companies in a defined sector and geographical area.

The objectives of the EPD program are following:

- Increase transparency and availability of environmental information by publishing it.
- Accelerate the rate of adoption of ISO 14025 Type III EPDs by improving scalability.
- Improve the quality of ISO 14025 Type III EPDs with improved verification processes.
- Advance simple, clear, and effortless process for businesses operating globally to publish a range of EPDs meeting various requirements on different markets.
- Help buyers, specifiers, and suppliers to do well-founded comparisons
- Encourage environmental performance improvements
- To comply with EN 15804:2012+A2:2019/AC2021, EN 50693:2019, ISO 21930:2017 and EN ISO 14067:2018.

1.3 Operating model of the program

The program operating model is designed to meet its objectives, and it includes following:

Digital format required	The program accepts EPDs in a machine-readable format.
Accepted submissions	EPDs can be submitted electronically from pre-verified EPD generators that fulfil the program requirements.
Third party verification	The program itself is the body acting as the exclusive third-party verifier. The program employs a combination of qualified staff, EPD generator pre-verification, digital analysis tools and supporting third party experts to perform verifications. The validation of verifiers is described in chapter 4.4.
Internal verification	Internal verification is the manufacturer's internal system of controls and verification, applied on project EPDs only. Such EPDS need to have an identifying document control record. The validation of internal verification processes is described in chapters 4.5 and 4.6.
Supported languages	EPD Hub primarily supports EPDs in English, French and German. Other languages are also supported, for which translation to English is mandatory.
Intended audience	This program is targeted for business-to-business use.

1.4 Organization of the EPD program

EPD Hub was founded based on its shareholders and operates with fully independent procedures, ensuring that all decision-making, governance, and operations remain separate and autonomous. One Click LCA is one of the shareholders, and EPD Hub remains open to shareholder agreements as well as other contractual arrangements, including partnerships with resellers and similar collaborations.

The EPD Hub is open for any stakeholder to read EPDs, participate in PCR development, and contribute to the future development of the programme. Its organisational structure includes several parties, with tasks and responsibilities divided into below processes:

1. Administration led by the Programme Manager, Secretary, and Board of Directors.
2. EPD development by organisations such as manufacturing companies.
3. Verification, led by the Verification Committee, involving independent verifiers.
4. PCR development led by the Technical Committee, which coordinates the work of a broader PCR stakeholder consultation group.

The company employs internal and external experts for performance of its duties. The following functions ensure EPD program operations.

Function	Description	Responsibility and authority
Program manager	Expert managing internal and external verifiers and analysis and approving results and approving connecting EPD generators.	Final decisions on verification on behalf of EPD Hub as the body performing 3 rd party verification, and conduct duties as set out in the ISO 14025 chapter 6.3.
Technical committee	Independent panel of experts reviewing the PCR(s) and providing expert advice on operation and future development of the program.	Review of PCR(s) as set out in ISO 14025 chapter 8.1.2, review GPI and provide advice for program future developments.
Verification committee	Supporting third party EPD verification experts with experience from various sectors, chosen by EPD Hub	Create guidance for verifiers and perform duties as individual third-party verifiers under program responsibility as outlined in ISO 14025 chapter 8.
Tools committee	EPD Generator developers working with EPD Hub	To advise on technology development & automation.

1.5 Key documentation for the EPD program

General Programme Instructions

This document is the GPI of the program. Latest version can be found on www.epdhub.com.

List of PCR documents

The program currently has a single PCR, which can be found on www.epdhub.com.

List of Type III Environmental Declarations (independently verified)

List of all valid EPDs can be found on www.epdhub.com.

Commercial terms for the EPD program

Please contact EPD Hub for further information at hub@epdhub.com.

EPD program privacy policy

Can be found on www.epdhub.com.

1.6 Machine-readable data and documents

The EPD program always requires machine-readable data. The below table summarises the requirements in more detail per each of the documents.

Function	Author	Machine readable data	Document format
EPD document	Manufacturer	Always required	Always required
Background data	Manufacturer	Always required	Always required
Verification report	EPD Hub	Always generated	Machine readable data, printout available

All the digital EPDs are based on ILCD+EPD format. The accepted document format for the EPD document is determined in connection with the used pre-verified EPD Generator. The background data submitted by the EPD generator shall contain all information necessary for performing verification on each submitted EPD for types of EPDs that the given EPD generator has been pre-verified for.

1.7 Principle of fact-focused and purposeful verification

The EPD publisher is always ultimately responsible for the accuracy and truthfulness of their EPDs. The program does not promote non-value adding tick-the-box EPD verification.

Where the PCR, the applicable reference standard or c-PCR provides detailed procedural rules, detailed documentation may be covered by statement that confirms that the declaration is aligned with the specific provision(s) of the PCR, the said standard or c-PCR.

The purpose of the EPD Hub verification process is to ensure that LCA and EPD data are in line with the actual facts, as they exist in the business and on the marketplace and reliably and truthfully represent the object of the study, meet the requirements of targeted standards and PCR, and do not give ground to concerns about their accuracy. Any verifier performing verifications for EPD Hub is allowed to require any additional information to ensure above principles are respected.

Guidance for conduct of the EPD verification can be found in Annex III.

1.8 Principle of non-redundancy

The program allows using a single, confidential set of machine-readable background data (LCA report) for multiple declarations. In such case, the LCA report must be linked to every declaration verification document to ensure they are accessible to verifiers.

When standard requests for the same information are available on both the EPD and the LCA report, the information on the EPD is deemed to represent the information in the LCA report, and the third-party verifier shall verify the information only on the EPD.

When multiple EPDs do not vary on other aspects except those documented on the EPD, the verification process can use same LCA report for entire set of EPDs.

1.9 Prices for EPD verification and publishing on EPD Hub

EPD Hub charges EPD Generator pre-verification at an hourly rate based on quote, which depends on complexity of the EPD Generator and sectors and scopes supported. Verification requires a minimum down payment before the verification can commence.

Prices for EPD verification and publishing from pre-verified EPD Generators are determined by 1) degree of automation and process guarantees for the tool and its users, and by 2) complexity of the EPD: standards (2.2), scope, use of c-PCR and inherent variance (2.9). EPD Hub establishes reference pricing applicable for the EPD tool and complexity parameters.

2 Types of Environmental Product Declarations supported

2.1 Supported sectors as an EPD program operator

The program is targeting the following sectors, products and services, as an EPD program:

1. Construction products (any type, including non-permanently installed equipment)
2. Electrical products (any type)
3. Manufactured products (other than construction and electrical products, any type)
4. Processes, energy, and services

2.2 Standard-alignment for the declarations per sector

The allowed standards per sector are shown in the following table.

Sector	Eligible standards
Construction product	EN 15804:2012+A2:2019/AC2021, ISO 21930:2017, ISO 14067:2018, EN 50693:2019
Electrical product	EN 15804:2012+A2:2019/AC2021, ISO 21930:2017, ISO 14067:2018, EN 50693:2019
Manufactured product	EN 15804:2012+A2:2019/AC2021, ISO 21930:2017, ISO 14067:2018
Processes, energy, and services	EN 15804:2012+A2:2019/AC2021, ISO 21930:2017, ISO 14067:2018

For clarity, manufactured products (also others than construction products) are allowed to create EPDs under above named standards and under EPD Hub’s core PCR.

2.3 System boundary for the declarations

EPDs can be created with the following scopes, provided the standard allows the given scope to be applied for the EPD in the case of the given product.

Cradle to gate	These EPDs only cover phases from raw materials to manufacturing (A1-A3). EN 15804:2012+A2:2019/AC2021 severely limits the application of cradle to gate EPDs, but allows it for intermediary products with no biogenic carbon. Definitions shall apply also in case of EN 50693:2019 and ISO 14067:2019.
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Cradle to gate with end of life and options	These EPDs cover phases from raw materials to manufacturing (A1-A3) and end of life (C1-C4) and impacts outside system boundary (D), with potentially other life-cycle phases included (including A4, A5, B1-B7). Including use stage (B) is mandatory for Electrical and Electronic Equipment (EEE) products.
Cradle to grave	Cradle to grave scope with all modules are declared. See note for EEE products above.

2.4 Categories of EPDs

This program has the following categories of EPDs. Some of them have limitations on use.

Third-party verified EPD	Third-party verified EPD. No limitations on use. Three specific versions of these EPDs exist: Design phase, Private EPDs and White-label EPDs
Sister EPD	Sister EPD is a variant of an existing third-party verified EPD (parent EPD). Sister EPD must carry the EPD number of its parent EPD published on EPD Hub. Further rules are provided in Annex II.
Project EPD	Project EPD is a non-published Sister EPD, that is internally verified by the issuer (by a person or by the quality management processes implemented by the company). Project EPDs do not get reviewed by EPD Hub or published on EPD Hub. Project EPD is a variant of an existing published EPD (parent EPD). Project EPD must carry the EPD number of its parent EPD published on EPD Hub. Further rules on creation & verification of project EPDs are provided in Annex III.

A third-party verified EPD can be created with variant versions:

- Design phase EPD: EPD created for a new product before 12 months production data is available. The product is not necessarily yet on the market. Such an EPD is only valid for 18 months. Design phase EPDs still need live production data for at least one month, but it can be from pilot production if it is the only available data. Design phase EPDs can also be created for yet to be launched products, if the manufacturing process and inputs and outputs are similar as for existing, already manufactured products.
- Private EPD: Private EPD is created without intention to publish it for example for competitive reasons. Such EPD will be third-party verified and EPD number will be issued. However, it will not be available on the EPD Hub website for download.
- White-label EPD: Variant of already published EPD with identical results, only different branding. For EPD owners who are traders (e.g., retailers, wholesalers), including module A4 is required. This module shall, at minimum, cover transport to a central

warehouse or the market boundary of the EPD scope. It can also include subsequent transport from the central warehouse or market boundary to an average customer.

Further, an EPD can have the following special states. If EPD is in one of these states, the EPD Hub website mentions the state of the EPD. It will not be reflected on the document itself. EPDs that have expired or have been withdrawn will no longer be downloadable.

EPD withdrawn	EPD that has been published, but is no longer, is withdrawn. Such an EPD is no longer publicly available on the EPD Hub website. Withdrawal can be done by the publisher or by the EPD Hub.
EPD expired	EPD that has expired because of reaching the last date of validity.
EPD under review	EPD that is being reviewed, possibly because of 4.3.3.

2.5 Mandatory statements and data required from all EPDs

Every EPD must carry very prominently on the first three pages of the EPD the following information as a single summarised, clearly readable table. One of the mandatory options must always be selected and shown on each EPD. If the mandatory data answer is very long, it's allowed to present the data outside the table.

EPD information	Mandatory options	Mandatory data
EPD Number	-	Number from EPD Hub
Validity	-	Start & end of validity
Last updated	-	Date EPD last updated
Standards compliance	EN 15804:2012+A2:2019/AC2021, ISO 21930:2017, EN 50693:2019, ISO 14067:2019	-
EPD category	See in 2.4.	-
System boundary	Cradle to gate Cradle to gate with end of life and options Cradle to grave	-
c-PCR	-	Must mention if it is used
Verification status	Third party verified (ISO 14025) Internally verified (ISO 14025)	-
Verifier	-	Verifier must be stated
Products covered	Single product Multiple products	Product name(s) covered by the EPD.

EPD information	Mandatory options	Mandatory data
Locations covered	Single location Multiple locations	List of locations covered, including city and country.
Manufacturers covered	Single manufacturer Multiple manufacturers	List of manufacturers covered by the EPD.
Sector	Construction product Electrical product Manufactured product Processes, energy and services	-
Declared unit	-	Declared unit
Functional unit	-	Functional unit
Mass / declared unit	-	Mandatory always

Following additional information may be provided on optional basis:

- GWP fossil (total carbon footprint, kg CO₂e per declared unit)
- Secondary material inputs % of mass (A1-A3, in the product)
- Secondary material outputs % of mass (C3, re-use, recycling, or energy recovery of the product at end of life)
- Total energy usage (A1-A3, during the product stage)
- Total water usage (A1-A3, during the product stage)

2.6 Environmental impact data covered by the EPDs

Every EPD can incorporate exactly one set of principal LCA result tables, comprising all life-cycle stages and impact categories as required by the standard being applied. If a standard has any optionally displayed categories, their display is not required.

Displaying additional LCA data for the same product, e.g., other characterisations or indicators, in separate and clearly labelled LCA result tables is allowed.

Displaying additional scenarios for transport, installation, use phase or end of life phases, indicated as additional scenarios, is allowed. For each scenario, the context where the scenario can be applicable must be defined and shown on the EPD.

2.7 Single product EPDs requirements

EPD can be deemed to be “Single Product” in following cases

- Variance in the supply during a period of last 12 months or another justified period is always considered to represent a single product, also when supply has seasonality.
- When the products are painted, all the different colours and hues can be handled as a single product.

- When there are variances in the stock keeping units, but the differences between them are only applied on the items that are or could be outside the cut-off.
- When the product is available in different sizes, and all components scale linearly, and scaling does not lead to change in proportions in terms of inputs and outputs.
- When product can be cut to different lengths or sizes and when such cutting has only very minor impact on the materials loss rate or packaging materials demand.

Additional Single Product rulings can be requested from EPD Hub. Approved and rejected cases will be recorded in a future appendix of this document.

2.8 Mass conversion tables, scaling tables and extrapolation rules

Any linearly scaling EPD is allowed to have a mass/size conversion table as an optional appendix. Such appendixes are presented as additional information and are verified. Linear scaling tables are allowed only for GWP impacts.

Any EPD is allowed to have size extrapolation rules and scaling tables as optional appendixes. Such appendixes are presented as additional information and are verified. Declaring additional GWP data in non-linear scaling tables in the appendix of an EPD is allowed. Scaling tables for different functional or performance ratings is not allowed.

2.9 Allowed averaging and aggregation for EPDs

Allowed combinations of different types of permutations of variability are shown below.

Products	Locations	Manufacturers	Is this combination allowed?
Single	Single	Single	Yes
Single	Single	Multiple	No, except for associations
Single	Multiple	Single	Yes
Single	Multiple	Multiple	No, except for associations
Multiple	Single	Single	Yes except for energy or services
Multiple	Single	Multiple	No, not for any sector
Multiple	Multiple	Single	Yes except for energy or services
Multiple	Multiple	Multiple	No, not for any sector

Following cases prevent representing data as averaged

- If some of the products contain REACH SVHC materials and others do not.
- If some products serve a different function.
- If some products are manufactured using a different main process or from different materials.

- If products have different end of life scenarios.
- If products have different use stages. In order to be accepted into the average declaration each included product must have the same use stage processes.
- Material difference in a functional or performance rating, such as strength class. Creating averages between products with a functional or performance rating or classification difference is allowed, when such differences are not material considering the intended purpose of the use of products, and when the averaged products can be generally used for the same functions and applications.

Detailed rules for allowed averaging and aggregation can be found in the Annex I. Every averaged EPD must mention every product, location, and manufacturer it represents.

2.10 Sector EPD

An industry association or a group (two or more) of companies can develop a Sector EPD to represent an average product. The sector EPD shall be limited within a specific sector and geographical area, use standardised declared or functional units for all covered products, and aggregate data from these organisations.

The sector EPD must clearly define the products and companies included in the declaration. If the Global Warming Potential (GWP) fossil A1-A3 results for the sector EPD differ by more than 10% between the products or sites represented, these differences must be disclosed in the EPD, along with an explanation for the variation.

Any public communication of results from a sector EPD must make it clear that the data reflects average values across the sector, as defined within the EPD. It should not suggest that the results are representative of any individual manufacturer or specific product.

Same rules on averaging apply ([Annex I](#)).

3 Verification processes in the EPD Hub

3.1 Summary of the verification processes applied in different cases

EPD Hub applies different verification processes for EPDs created with different types of tools. Different types of tools provide a variable level of guarantee of quality at the tool level. The tool and verification definitions can be found in the following chapter.

The different types of EPDs can be distinguished by their verification statements, verification status and whether the EPDs can be found on EPD Hub’s public EPD repository.

Tool used	Pre-verified EPD Generator		Automated EPD Generator EPD Configurator	
Category of EPD	Third party verified EPD	Project EPD	Third party verified EPD	Project EPD
Verification process	EPD Hub third party verification	EPD tool and internal verification	Tool verification, system controls, sample verifications	EPD tool and internal controls or verification
Verification status	Third party verified (ISO 14025)	Internally verified (ISO 14025)	Third party verified (ISO 14025)	Internally verified (ISO 14025)
Verification statement	EPD verification statement included	Document control record required	Tool verification statement included	Document control record required
EPD publishing	Published in EPD Hub	-	Published in EPD Hub	-
EPD number	Numbered	-	Numbered	-

3.2 Definitions of verifications and types of EPD generators in EPD Hub

EPD Hub only accepts submissions from pre-verified EPD Generators. Exceptions to this can be accepted on case-by-case basis while pre-verified status for a software is not yet achieved, or in case a re-verification of an EPD Generator is ongoing. The processes for such EPDs are described in 3.10. Tool verification can be performed by one or more verifiers.

Pre- verification is a verification process that ensures that an EPD generator has a programmatic solution ensuring that it generates consistent quality EPDs meeting the minimum rules and requirements of EPD Hub for the targeted PCRs, standards and product

categories. The pre-verification does not cover every requirement – additional verification will still be performed on each generated EPD.

Pre-verified EPD Generator is an EPD Generator that has been inspected and approved by EPD Hub after the pre-verification process as a compliant EPD generator.

Third-party verification is the independent verification applied on all published EPDs.

Internal verification is the process of control and verification applied on non-published project EPDs. It is performed by the organisation issuing the EPD.

End-to-end verification is a verification process that ensures that an EPD Generator, when used, generates consistently and automatically EPD Hub compliant EPDs from consistent and controlled scope, LCA data and LCA model. The verification requirements are the same for both Automated EPD Generators and EPD Configurators, while the practical process and verification differ between the two types of tools. A tool that has completed this process can be used to publish third-party verified EPDs without separate human verification intervention on each EPD generated. Before end-to-end verification can start, the tool must pass the pre-verification as a preliminary qualification.

Automated EPD Generator is a pre-verified EPD Generator that has passed end-to-end verification, and that is used to generate EPD Hub compliant EPDs using an automated process in a specific context by specific users with a specific training for specific types of products for set standard(s) and PCR(s) with controlled choices and data available. This can be implemented e.g., with a manufacturing software that powers the EPD generation.

EPD Configurator is a pre-verified EPD Generator that has passed end-to-end verification, and that is used to generate EPD Hub compliant EPDs using a simplified, human driven process in a specific context by specific users with a specific training for specific types of products for set standard(s) and PCR(s) with controlled choices and data available. This can be implemented e.g., as a workflow-driven tool with limited, controlled choices.

System verification is a system put in place by the EPD publisher for creation of project EPDs. Essentially it is the process that ensures feeding consistent, error-free data to the pre-verified or end-to-end verified EPD tools to create project EPDs. The EPD publisher shall develop, document, implement, and maintain a structured EPD process, continuously enhancing its effectiveness in line with the requirements outlined in this document. Publisher duty is to define the sequence of the process, establish criteria to ensure effective creation of Project EPDs that will ensure availability of resources needed for monitoring.

Documentation requirements:

- Publisher preparation (description of the process, tools used and data transfer options, ISO 9001 or ISO14001 certificate relevant for management system)

- Audit and controls (3 EPDs and data-lists are fully manually verified to check system consistency in data transfer and EPD creation; system is valid for 3 years and requires annual audit; publisher shall provide a list of generated project EPDs for audit)

3.3 Pre-requisite: EPD Generator pre-verification (mandatory)

The purpose of the pre-verification is to ensure that generated documentation is consistent in quality and to ascertain that the minimum requirements are programmatically guaranteed. The list of pre-verified EPD Generators and industry sectors they can support are available on the EPD Hub website.

The software pre-verification verifies which of the minimum requirements for EPDs can be programmatically guaranteed. The program reserves the right to reject a software pre-verification if a software cannot guarantee covering all the mandatory requirements.

The pre-verification requires the EPD Generator developer 1) to document processes required by the EPD Hub, 2) to provide a cost-free access to the software for purpose of verification, 3) to answer all questions arising from the verification, 4) fix any issues defined as mandatory by EPD Hub, 5) to generate digital documents for EPDs, and 6) to pay the applicable verification fee (see 1.9). The software pre-verification is conducted by the EPD Hub program manager or an appointed verifier.

All tool pre-verifications are valid for three years. Every tool is checked at least annually, and completely reverified after initial validity has expired. EPD Hub has the right to require checking of the tool at any time if tool reports or shows changes impacting the LCA results.

3.4 Data quality requirements for pre-verified EPD generators

The data quality requirements for the pre-verified EPD generators are set according to the EN ISO 14044 (4.2.3.6) and the targeted standards (see 2.2).

The LCA data sources used in pre-verified generators shall use datasets based on attributional / cut-off methodology. The cut-off approach follows the “polluter pays” principle, in which the emissions of wastes are fully allocated to the producer. These wastes are burden-free when used as secondary materials in the next product system. This requirement shall apply also for pre-verified EPD generators used for ISO 14067 compliant declarations. The same requirements apply to generic, private and primary LCA data.

EPD Hub recognizes that some LCA data may have economic allocation applied for parts of allocation. Performing a recalculation for all LCA data shall not be required, when EPD Hub judges that there is no risk of misrepresentation of results.

3.5 Starting point for the verification (mandatory)

EPD verification and publishing is only performed when the declaration and supporting documents are submitted to the EPD Hub portal. The declaration can no longer be modified, except in between verification rounds if applicable. When the declaration is successfully verified, program shall automatically publish it. The party uploading the documentation has the obligation to provide correct and truthful data in formats required.

3.6 Third-party verification or internal verification (mandatory)

The final verification is the third-party or internal verification. Verification does not cover scopes that is not applicable to the EPD in question, or aspects ensured by software pre-verification. The principle of the verification is described in 1.7 and verification guidelines are given in Annex IV, or as amended by EPD Hub from time to time.

	Third-party verification	Internal verification (control by persons)	Internal verification (control by system)
When to apply	For published EPDs	Project EPDs from Pre-verified tools	Project EPDs from End-to-end verified tools
Who chooses the verifier	EPD Hub	EPD publisher	EPD publisher
Who does the verification	Third party verifiers and EPD Hub systems	Internal expert of the EPD publisher	The control system put in place by the EPD publisher; if no such system, verify via an internal expert
Requirements	Set out in 4.4.2	Set out in 4.4.3	Set out in 4.4.4

Third party verification is carried out at the prices determined based on the principles set out in 1.7, on which the person(s) supporting the verification have no influence over. Central management of the verification process guarantees consistent high quality of the verifications and avoids race to the bottom in terms of contracting the verifiers.

Verification for subsequent EPDs from the same publisher from the same Pre-verified EPD Generator for similar products can be streamlined and automated by EPD Hub. For such EPDs, the minimum checks include input data and results, including result and input plausibility, text or other information and EPD formatting and formal parameters.

3.7 EPD update and variance third-party verification (for updates)

If any of the content of the EPD is edited, either for purpose of updating description, energy mix, components or materials used or other parameters, or varied for purpose of creation of sister EPDs, only the variances will be subject to third party verification. The changes in this case cannot change number of products, sites or manufacturers covered.

Third-party verified EPDs are valid for five years from the verification report's approval date, beginning with its registration and publication on the EPD Hub library, or until it is removed from the library.

The EPD must be updated and re-verified during its validity period if any of the following occur:

- A 10% or greater increase in any indicator result listed in the result tables.
- Errors in the declared information.
- Significant changes to the declared product information, content declaration, or additional environmental information.

If such changes occur and the EPD is not updated, the EPD owner must contact support@epdhub.com to have the EPD removed from the EPD Hub library.

3.8 End-to-end verification for Automated EPD Generators & EPD Configurators

Pre-requisites of end-to-end verification

The pre-requisite of the end-to-end verification is successful pre-verification.

For publishing EPDs from Automated EPD Generators or EPD Configurators, a sufficient set of EPDs representing the different product or service types represented by the tool must be generated and successfully verified without verifier objections using the third-party verification. In case the process has raised verifier objections, the tool developer must demonstrate how the issues are remedied and ensured for future EPDs prior proceeding.

End-to-end verification process for Automated EPD Generators and EPD Configurators

The end-to-end verification process is always done for a specific context, where the applicant must demonstrate with documentation all the below:

1. Defined context: Where is the tool used, geographically and in terms of organisations? For what purposes? Which boundaries apply to the scope of the tool?
2. Defined users: Who are the users? What relevant competence do they have?
3. Defined training: How are the users trained? What materials do they have available to guide them during the process and workflow?

4. Defined types of products and services: What products can it be used for? With which processes? From which materials?
5. Defined standards and PCRs: Which standards and PCRs does it support?

The applicant must demonstrate with their tool and documentation that the tool generates consistently and automatically EPD Hub compliant EPDs. This requires the following:

6. Fixed or limited scope of the generated EPDs according to the standard and PCR.
7. Fixed or consistent, controlled, and limited LCA data that is used within the tool and that is suitable and sufficient for the context of the tool.
8. Fixed, controlled and verified LCA model that is used within the tool.
9. Fixed and well-defined tool limitations that prevent human errors in the process.
10. Error prevention measures and systems for the automation processes (if applied).

The technical verification inspects in addition the following requirements:

11. That the tool submits all required data, as well as all input data used and other user-defined data, in a digital format for review and archiving purposes for each EPD.
12. That the error detection mechanisms and systems, together with the systems provided by the EPD Hub, are adequate for quality and consistency of the results.

The applicant must demonstrate with documentation that they are able to manage the tool according to the set requirements over the tool's lifetime. This requires the following:

13. Defined party who has the responsibility for the tool and their resources to maintain the tool, associated processes and documentation and delivering trainings.
14. Processes how the tool is updated and what is the expected update frequency and nature of the updates.
15. Processes on how users are added to the tool, including how their competence is ensured or verified.
16. Tool management procedure and times and process for updating tool log files.
17. Optional: if an internal review for EPDs generated with the tool is performed, this shall be documented.

Approval and non-approval of submitted EPDs and sample checking

EPDs generated and published from approved Automated EPD Generators or EPD Configurators, that pass automated verifications and do not trigger errors, warnings, or alarms, are considered as third-party verified by EPD Hub. However, EPD Hub is entitled to conduct sample verification on any submitted EPDs and deny or revoke their verification status, setting it to EPD withdrawn or EPD under review at the EPD Hub option. EPD Hub reserves the right to require tool re-verification if deviations arise in the process.

Annual review

EPD Hub shall also annually review log files for all tools and a set of EPDs created and published using those tools. This shall also include a sample-based verification deemed representative for a set of EPDs published. If the annual review findings are alarming, EPD Hub reserves the

right to suspend tool approval until issues are remedied. The annual review can take place at tool verification date anniversary or in connection with PCR update.

3.9 Pre-verified EPD Generator developer obligations

Every tool has to maintain a tool update log and keep EPD Hub updated about tool changes. The log shall include new data, scope changes, changes in modelling or calculation, and other changes that would impact the tool pre-verification or subsequent EPD verification.

Tool developer has to, in addition of paying EPD Hub verification fees, submit all necessary information for performing the verification as well as access to the tool itself. EPD Hub shall not be required to pay license fees for tool access for any verification purposes.

Tool description shall include range of product(s), standard(s) and PCR(s) it supports, description of the LCA model and database and their quality, key assumptions, targeted user groups and the requirements associated with those user groups, update and documentation process for the tool, flexibility and limitations applied to the modelling and data selection by end users and other information as required.

3.10 Exception: verification of EPDs not from pre-verified tool

Prior accepting an EPD from a non-pre-verified tool for processing, EPD Hub may require the right to inspect the EPD document in question. Subject to the sufficient basic level of quality, EPD may be verified and published using a document-based verification process. In a document-based verification process, all the verifications as covered in points above are conducted by the EPD Hub as a single verification.

4 Overview of the core processes of the EPD program

4.1 Procedures on GPI

4.1.1 GPI revision process

Technical committee is also responsible for **GPI revision process**, that involves the following steps:

1. Consultation: Before launching a new version or major revision, the GPI is opened for consultation to gather feedback from relevant stakeholders.
2. Revision Development: Updates are made based on feedback, ensuring accuracy and compliance with relevant standards.
3. Release and Change Log: Once finalised, the updated GPI is issued with a change log detailing modifications and an entry into force date, specifying when the new version becomes applicable.
4. Ongoing Updates: Future revisions follow the same process, ensuring the GPI stays accurate and relevant.

This process ensures transparency and continuous improvement of the GPI.

4.2 Procedures on PCR

4.2.1 PCR review panel

The review panel consists of a group of minimum 3 and maximum 10 LCA experts. The review panel consists of technical committee members mentioned in chapter 1.4. When appointing new review panel members, the following factors should be taken into account:

- Promoting diversity in sector experience and geographical representation.
- Each member should possess a minimum of 5 years of relevant experience in LCA, and EPD, including experience in LCA and EPD critical review or verification.
- The review panel should include members with expertise in other ongoing and sustainability areas, such as ISO or EN standardisation, eco-labelling, eco-design, and similar sustainability initiatives.
- The review panel should include members with strong expertise particularly concerning standards, data quality and system and tool verification.
- The review panel should include members who are well-informed about the latest global developments in life-cycle thinking, life-cycle management, LCA, and EPD, with a combination of academic and industry experience.

4.2.2 Creation and development of PCR

The program is created with the intent of operating a single or limited set of PCRs that supports the types of products listed in chapter 2.1, and that offers options to comply with EN 15804:2012+A2:2019/AC2021, EN 50693:2019, ISO 21930:2017 and EN ISO 14067:2018. There is no foreseen need for supporting further product categories. If further product categories are required, they shall be created based on emergence of a new regulation, standard or other similar requirement. The PCR is valid for 5 years.

The PCR shall be designed to ensure standards-compliance, high quality of results and to minimise the burden of needless documentation to make declarations more accessible. The PCR shall not require information that is not essential for compliance or quality of declarations.

The PCR development process establishes guidelines for creating EPDs for product categories, ensuring consistency using the GPI as the main reference. The process follows three key steps: Initiation, Preparation, and Publication.

The product category is defined based on its function, considering aspects like LCA studies, and relevant technical documentations. The scope is developed with input from stakeholders and includes core processes and exclusions. The programme operator can decline PCR development for certain categories.

Key steps in the development process include:

Initiation Phase:

- Product category definition: based on functionality, market factors, and relevant classifications, ensuring practicality, alignment with standards, and stakeholder consensus, with revisions allowed as needed.
- Existing PCRs review: Assess current PCRs to avoid duplication.
- Moderator Appointment: Assign a Moderator to oversee and manage the process.

PCR preparation

The PCR preparation as defined in EN 14027 (6.4), including the following:

- Inform Interested Parties: Notify relevant stakeholders about the PCR development process.
- Form PCR Committee: Establish a diverse and impartial PCR Committee.
- Plan & Announce: Develop a timeline and communicate it to all stakeholders.
- Adhere to Template: Utilize the standard PCR template. Deviations require approval.
- Choose LCA Method, Indicators, Additional environmental information: Select appropriate methods to ensure a comprehensive environmental assessment. Justify any deviations from standard practices.

- Quality check: Verify compliance with standards, GPI requirements, and comparability. Justify any deviations or contradictions.
- Open Consultation: The draft PCR undergoes a transparent consultation where stakeholder feedback is collected, addressed, and incorporated, with a summary shared and the PCR reviewed for compliance and quality. The consultation process will focus on developing the PCR and its associated rules, ensuring transparency, timely feedback, and the involvement of interested parties through various channels, including potential consultation boards or public hearings.

Review and Publication

- Stakeholder Involvement: Involvement of interested parties as outlined in EN 14025:2006 (5.5, 6.5 and 9.3).
- Technical Committee Review: The Technical Committee (represented by a review panel) reviews the revised draft.
- Publication: If approved, the PCR is published.
- Regular Updates: Conduct regular updates to the PCR, which can be small, medium, or large-scale.

This transparent, inclusive process ensures that PCRs are scientifically sound, up-to-date, and applicable globally.

4.2.3 Revision, publication and post-publication actions of product categories and PCRs

The PCR shall be subject to systematic revision involving interested parties no more than five years from the date of publication, in order to determine whether to be confirmed, withdrawn or revised (Clause 9 ISO 14027).

The PCR, and future major revisions, shall be opened for consultation before their launch. PCR updates are issued with change log and entry in force details for each revision.

Feedback and improvement suggestions on the PCR are collected on an ongoing basis, and they are reviewed quarterly. If cumulative feedback merits an update to the PCR, the PCR update shall be created. If the update is editorial (that is, clarifying practices), it shall not be submitted to the technical committee. Major updates are submitted to the technical committee, which shall scrutinise and review them and send back to the program for amendment.

4.3 Procedures on quality assurance

4.3.1 Data confidentiality

All declarations which are approved by the program shall be released to the public domain. Supporting, confidential documentation to the declarations shall be limited solely to the access of the program staff for continued inspection of possible claims or queries regarding the declaration. Furthermore, supporting, confidential documentation shall be provided to the persons performing third party verification for the duration of the verification for the purpose of the verification.

4.3.2 Procedure for data management

The program applies the following data and version management practices:

- All declaration documents are versioned and carry record of who added them.
- Verification checklists are stored for every verified document as per ISO 14001 4.5.4.
- All current versions of program documents are available on the program website
- The program manager reviews and approves documents and their revisions
- For major changes in PCR, the technical committee must review changes as well
- All program documents come with a version control log of changes

4.3.3 EPD-related dispute resolution and arbitration

EPD Hub welcomes any feedback on substantiated concerns about quality, accuracy or truthfulness of any EPDs. Any party with such concerns is welcomed to share their concerns with the EPD Hub, including the data or information substantiating the concern.

If, in the opinion of EPD Hub, based on available data, including non-public data, such allegation seems substantiated, EPD Hub may place an EPD under the status “In review” on the portal (see 2.4).

EPD Hub reserves the right to require further evidence from any publisher to substantiate the quality, accuracy, or truthfulness of their EPDs, including already published EPDs, based on concerns on their quality. Publisher is given an opportunity to respond to these concerns, which may or may not lead to the revision of the EPD in question.

If, in the sole opinion of the EPD Hub, the answers are not satisfactory, EPD Hub reserves the right at its sole option to either transition the document to a self-declared status or to withdraw it.

Handling conflicts of interest If any third-party verifier or internal verifier performing verifications on published EPDS on EPD Hub has been found having conflict of interest for verification of specific EPDs, then 1) the verifiers right to verify EPDs is terminated and 2) said

EPDs will be placed under the status “In review” on the portal (see 2.4) for up to 60 days, during which their verification may be re-arranged. EPD Hub may also initiate a re-verification of an EPD if impartiality is in question.

The verification statement includes a declaration on the honour of the independent third party capable of establishing its independence and impartiality with the declarant(s), which includes in particular the description of all its links of interest during the last three years.

Verifiers who lose their right to verify are only able to get their verification credentials restored by re-applying for recognition. EPD Hub will exercise its sole discretion in considering such applications.

4.3.4 Annual control of EPDs verified and published on EPD Hub

EPD Hub Limited conducts annual checks on EPDs verified in the previous year. These checks concern a sufficient sample, which shall be no less than 10 % of total EPDs and must cover at least 10 % of the scope of a complete verification with a focus on quality risks. This control is carried out by EPD Hub with its internal resources.

4.4 Procedures related to verification

4.4.1 Procedures for selection of verifiers

Every verifier must meet the requirements presented below and to pass the evaluation from the verification committee of the EPD Hub.

Minimum 3 committee members need to be present during the evaluation with the candidate and selected verifiers need to be approved by every member of the committee.

Committee: <https://www.epdhub.com/verification-committee>

Communication with verifiers is over email about any minor updates and on mandatory quarterly meetings where major updates and decisions are made.

Responsibilities:

- Verify publishers LCA and EPD projects against set quality requirements
- Provide customers written feedback on the issues and required corrections
- Where appropriate, define automation tools to prepare verification checks
- Writing and contributing to guidance articles we publish to customers
- Identifying platform improvements and raising them to Product Management

Requirements:

- You need to have expertise in construction or electronic products LCAs, EPDs or carbon footprint projects (minimum 5 years)
- You need to be familiar with international LCA standards
- You need to be diligent and have a great attention to detail
- Fast learning skills and desire to improve constantly
- High customer and service orientation
- Excellent communication skills, especially in writing
- Degree or experience from environmental or construction engineering or LCA or related area is an advantage
- Experience in verification work is an advantage
- Proficiency in English

Personal qualities of the verifiers need to be aligned with values from Eco-platform in terms of:

Quality	Skill or Quality
Independence	<p>Verifiers shall not have been involved in the execution of the LCA or the development of the declaration and shall not have conflicts of interests resulting from their position in the organization.</p> <p>Involvement is given if the expert is part of the commissioner’s or practitioner’s project team or has vested financial, political, or other interests in the outcome of the study.</p>
Professional Scepticism	<p>Verifiers make a critical assessment, with a questioning mind, of the validity of evidence obtained and are alert to evidence that contradicts or brings into question the reliability of documents or representations they are provided as part of the verification</p>
Other Personal Qualities	<ul style="list-style-type: none"> • ethical, i.e. fair, truthful, sincere, honest and discreet; • open-minded, i.e. willingness to consider alternative ideas or points of view; • tenacious, i.e. persistent, focused on achieving objectives; • self-reliant, i.e. able to act and function independently while interacting effectively with others; • able to act with fortitude, i.e. able to act responsibly and ethically, even though these actions are not always popular and can sometimes result in disagreement or confrontation; • collaborative, i.e. effectively interacting with others, including validation and verification team members and the client’s personnel

4.4.2 Validating competence and impartiality for third party verifiers

All EPD verifiers, including EPD Hub program managers, employees, and third-party verifiers, must meet the following competence and impartiality requirements.

Competence requirements for persons doing verifications in general:

- ✓ Suitable educational background, allowing effective work in field of LCA and EPD.
- ✓ Knowledge of following standards: ISO 14040, ISO 14044, ISO 14025, EN 15804, EN 50693, ISO 21930, ISO 14067, ISO/TS 14071, CEN/TR 16970.
- ✓ Understanding the relevant sector, product/service and their environmental impacts.
- ✓ Understanding the manufacturing process of the relevant product.
- ✓ Understanding the regulatory context for the product in the targeted market.
- ✓ Experience from LCA and EPD verifications, including third party verifications.
- ✓ Knowledge of EPD Hub GPI, PCR, and other relevant instructions.

Compliance with above requirements is inspected by the EPD Hub based on the CV, references of past work and written answers of a potential verifier.

Impartiality requirements for persons doing verifications for specific cases:

- ✓ Not to have been involved in creation of the LCA or the EPD being verified.
- ✓ Be free from any conflict of interest that would bias the impartiality of verification.
- ✓ Must not have any other relationship with the publisher issuing the EPD.
- ✓ Not to have an economic interest in a particular outcome, positive or negative, regarding the result of the verification¹.
- ✓ Signed to uphold EPD Hub terms and conditions.

EPD Hub requires every potential verifier to list ongoing interests related to above at the start of the relationship, and to declare conformity with above for each EPD being verified.

EPD Hub maintains an up-to-date list of verifying persons and their competence.

Every verifier applying to be a verifier for EPD Hub accepts that their personal data is processed for the purpose of evaluating verifications and in case of EPDs being verified and published, their name shall be displayed on the EPDs verified by the verifier.

¹ Note: this clause shall not be understood as prohibiting charging for work for additional verification rounds.

4.4.3 Validating qualifications of internal verifiers (for pre-verified tools)

Subject to following the rules set for internal verification and other terms set out by the EPD Hub, project EPDs can use the EPD Hub logo.

Internally verified EPDs must carry a document control record, that must display at minimum the timestamp, name of verifying user and unique document number.

Competence requirements for persons doing internal verifications:

- ✓ Suitable education or training to allow for effective work in field of LCA and EPD.
- ✓ Knowledge of the applicable standards for the EPDs, as well as ISO 14025.
- ✓ Understanding the relevant sector, product/service and their environmental impacts.
- ✓ Understanding the manufacturing process of the relevant product.
- ✓ Training and knowledge of LCA and EPD verifications, demonstrated by an exam.
- ✓ Knowledge of EPD Hub GPI, PCR, and other relevant instructions.

Impartiality requirements for persons doing internal verifications:

- ✓ Internal verifiers shall not have been involved in the execution of the LCA or the development of the declaration They should be from the same organisation as the EPD authors.
- ✓ Internal verification shall not be done by an external party.
- ✓ Not to have an economic interest in a particular outcome, positive or negative, regarding the result of the verification².
- ✓ Be free from any conflict of interest that would bias the impartiality of verification.
- ✓ Committed to uphold EPD Hub terms and conditions.

EPD Hub requires every internal verifier to adhere to these requirements. EPD Hub has the right to require proof of the qualifications of internal verifiers and to require manufacturers to maintain up to date list of qualifying internal verifiers who continue their employment. EPD Hub has the right to request access and changes to the lists.

Every internal verifier accepts that their personal data is processed for the purpose of evaluating verifications and in case of EPDs being distributed, their name shall be displayed on the EPDs verified by the verifier.

4.4.4 Validating internal verification system (end to end verified tools)

For organisations implementing end to end verified tools, there's an option to apply internal verification system to qualify the project EPDs as internally verified. This is implemented with a quality assurance process that documents repeatability and consistency of the inputs and management of the process. This process is based on an audit conducted by EPD Hub's

² Note: this clause means prohibition for any specific personal or team bonus, compensation or personal gain.

appointed verifier, who must be satisfied that the internal verification system is fit for purpose.

The internal verification system audit is valid for three years, and it requires an annual maintenance inspection. For the annual inspection, the manufacturer must make available the list of internally verified EPDs generated since the last audit, and the documents themselves on request.

Such internally verified EPDs must carry a document control record, that must display at minimum the timestamp and unique document number.

4.4.5 Scope of the verification and the use of EPD Hub logo

The scope of the verification is always aligned to the content, system boundary and scope of the EPD, for example in regard to the standards pursued and averaging applied. The verification does not need to cover any scope that is not applicable to the EPD. The principle of the verification is described in 1.7. Third party verification is conducted by a person appointed by the EPD Hub and validated as per the following section.

A third party verified EPD has the right to use the EPD Hub logo as well as the EPD Hub verified EPD logo shown below. Companies that are owners of EPD can use the logo for marketing and website purposes.



4.4.6 Procedure for verification and verification statement

The program and the independent third-party verifiers it works with objectively review and verify results and data against required standards. They do not guarantee any verification shall result in an acceptance. Evidence of compliance, as recorded in delivered data and documentation is the sole criteria for acceptance. If a submission results in a second rejection for the same document, the program reserves the right to charge additional work.

The verification must confirm if the declaration accurately reflects the information in the supporting documents, and if the information is valid and scientifically sound.

To protect the integrity and quality of the data, the program reserves the right to refuse to publish any declaration submitted, and to withdraw any declaration already published.

ISO 14025 sets out a requirement for third party verifiers to generate a report documenting the verification process, while adhering to obligations on data confidentiality. This requirement can be covered by attaching a verification statement directly to the declaration. Otherwise, the verification statement or verification dialogue is available on request.

4.4.7 Expedited verification for sister EPDs created from fully verified datasets

A sister EPD created by only assembling underlying datasets that have been verified and approved by EPD Hub for such purpose, shall not be required to undergo a full third-party verification. Any such EPDs are deemed ISO third-party verified subject to having been reviewed by EPD Hub. Examples of such EPDs can be for example sandwich panels with variants, for which each component of the panel has been third-party verified.

Annex I: Rules for EPDs of multiple products and manufacturing sites

Similar products from a single or several manufacturing sites, manufactured by the same company or a group of companies with the same core processes may be declared in the same EPD. The program allows the aggregation of products and averaging of EPD results in several cases (see 2.9). Rules for the averaging are presented below:

1) The averaging in all cases must be done in the following way (the same process applies for both multiple products and multiple manufacturing sites):

- First a baseline model for a highly typical product within the averaged sample must be created. This can be calculated by using data for a typical manufacturing plant.
- From this baseline model, those inputs (raw materials, energy) and outputs (manufacturing waste, wastewater) which constitute 80% of the GWP impacts for life-cycle stages A1-A3 are gathered for all the products/sites to be averaged.
- The indicator used for this assessment is GWP-fossil as defined in EN15804+A2:2019 (Annex C.2.3).
- Only flows in the product stage modules (A1-A3) are included in this assessment, and all scenario-based data is excluded (modules A4-A5, B1-B7, C1-C4, and D)
- The variability is assessed by changing the baseline data according to the actual flows in the products or facilities which are to be included in the average. For allowed types of average EPDs see 2.9.
- This can be done by creating two LCA models based on the baseline model and by changing their constituent flows to a minimum case and a maximum case in terms of material and energy consumption.
- The allowed variability in GWP-fossil results when changing these inputs and outputs is +/- 50 %.
- The percentage difference between the declared GWP-fossil result and the product with the most divergent GWP-fossil result for modules A1-A3 shall be reported in the EPD. If this difference is less than 10%, it may be reported as "<10%". Alternatively, the variation can be expressed as the difference between the declared result and the lowest and highest results, respectively (e.g. -5%/+12%).
- If this is exceeded, the results cannot be reported in a single EPD, and instead several different EPDs have to be made to cover all of the products included in this evaluation.

In order for products to be able to be declared as an average, they must fulfil certain criteria. The following criteria apply for averages when there are multiple production sites.

2) Requirements for process & materials similarity in multiple location declarations:

- Main processes must be of similar type in all covered locations. For example, averaging an Electric Arc Furnace with Basic Oxygen Furnace in steelmaking is not allowed. But averaging locations with different sub-processes is allowed, as long as those sub-processes do not cause a difference of more than +/-10 % in A1-A3 GWP fossil.
- Different suppliers and sites must all use similar raw materials, but variations in recycled or secondary feedstocks can vary between suppliers.
- Maximum allowed variance in pre-averaged data is +/-50 % from average GWP fossil for A1-A3. Variance in in GWP in pre-averaged data must be documented on the declaration.

In a case where multiple products are averaged; the following criteria apply:

3) Requirements for creating EPDs of multiple products and manufacturing sites

- Three types of aggregation are allowed for multiple products and multiple manufacturing sites EPDs:
 - Production weighted averaging – Proportions of raw materials are weighted based on the production volume of each product in the group. These are then used in the LCA model and results presented in the EPD.
 - Representative product – The manufacturer chooses a representative product from the group of products and manufacturing site, and the LCA model is built for this product. The variation of the lowest and highest impact products is then reported in the EPD.
 - Declare the worst-case result among the included products and manufacturing sites for the specified modules (A to C) per declared environmental performance indicator. This may represent a single worst-case product or a combination of multiple included products. For this option, the content declaration shall:
 - Include the lowest amounts of recycled and biogenic content in the products and their packaging.
 - Reflect the highest share and most hazardous substances present in any of the included products.
 - Use average values for all other content declaration aspects.
- The types of aggregation shall be clearly described in the EPD, as “EPD of multiple products, based on the average results of the product group”, “EPD of multiple products, based on a representative product”, or “EPD of multiple products, based on worst-case results”.
- For EPDs claiming compliance with ISO 21930, the above options are only allowed if no declared environmental impact indicator result, aggregated across all included modules (A to C), differs by more than 10% between any of the included products.

- If the EPD does not claim ISO 21930 compliance, variations exceeding 10% are permitted, provided they are justified in the LCA report and the EPD discloses the variation for each impact indicator exceeding this threshold.
- Averaging is only possible for products with an equivalent purpose, for example, 'floor finishes', 'concrete blocks' or 'insulation' to be used in a similar context (internal/external use).
- Averaging requires that the products have no material difference in a functional or performance ratings, such as strength class (e.g. for concrete). Materiality is evaluated based on the intended purpose of the use of products, and this test is passed if the averaged products can be generally used for the same functions and applications.
- Averaging is only possible for products that are manufactured using a similar process from similar raw materials. Rates of recycled content and source of energy may vary. Proportions of the raw materials can vary.
- Averaging is only possible for modules A1-A3. Variation in other life-cycle modules shall be deemed to be linear to the variation in the modules A1-A3. If there is a minor deviation from this variation in other modules (e.g. due to a minor different component), the scenarios need to be representative for all covered products in the averaged declaration. Minor variation limit shall be deemed as below 10 % difference in GWP fossil for other modules.
- Products with different dimensioning or sizing, for example, can be generally grouped.
- For assembled products, the specific components may vary, but the function of product must be same (e.g., only internal doors with same fire and acoustic ratings).
- Maximum allowed variance in pre-averaged data is +/-50 % from average GWP fossil for A1-A3. Variance in in GWP in pre-averaged data must be documented on the declaration.
- Averaged EPDs are allowed to have only one set of result tables.

In addition to multiple locations and multiple products aggregation, this program allows the use of extrapolation of results and scaling factor tables to present impact information outside the main results. The following rules apply for such cases:

4) Rules for extrapolation and scaling factor tables

- For linearly scaling products, a scaling factor table made using the extrapolation of results can be added (see 2.8).
- A linearly scaling product is defined to have one of the following qualities:
 - Is made of a single homogenous raw material (i.e., steel or concrete without reinforcement).
 - Change in its proportions does not change its raw material composition or the energy intensity of its manufacturing (kWh/kg).

- In this program it is also possible to declare results in a scaling factor table for non-linearly scaling products.
- Non-linearly scaling products include assemblies and products in which the amounts of materials change in different proportions when the product size varies, thus giving inconsistently changing results.
- Because of this, each different size must have its emissions calculated separately in a scaling table or other type of annex.
- Non-linear scaling factors or tables can be calculated in one of the following ways:
 - By creating an LCA model of each non-linearly scaling product in the software.
 - By using mathematical models to derive a non-linear equation to represent the results of the products. The publisher needs to explain how this equation was derived and to validate the equation by showing that the results calculated with the equation are the same as those created with LCA model.
- For clarity, there is no limit on GWP fossil variance for A1-A3 modules for linearly and non-linearly scaling tables.
- When preparing and displaying scaling tables, no additional components or data can be added for the calculation.
- EPDs can have scaling tables in an Annex for GWP data only. If other indicators are used, it shall be justified in the LCA report.

Templates for scaling tables to be included in the Annex of the EPD document are provided below. For EN 15804+A2-compliant EPDs, only GWP indicators are permitted. However, additional core indicators may be included in CML or TRACI result tables that are relevant for the products' markets.

Impact category		Unit	A1-A3	A1-A3
Product Thickness (optional)		mm	40	60
Product Weight		kg/DU	1	1.5
EN 15804+A2, PEF	GWP – total	kg CO ₂ e	-	-
	GWP – fossil	kg CO ₂ e	-	-
	GWP – biogenic	kg CO ₂ e	-	-
	GWP – luluc	kg CO ₂ e	-	-

Other impact categories (in case of EN15804+A2 compliant EPDs) or life cycle stages (A-C) within a single scaling table are allowed only in specific cases where national requirements apply. Example template for scaling table for these situations is below:

Impact category		Unit	A-C	A-C	A-C
Product Thickness (optional)		mm	40	60	80
Product Weight		kg/DU	1	2	3
EN 15804+A2, PEF	GWP – total	kg CO ₂ e	-	-	-
	GWP – fossil	kg CO ₂ e	-	-	-
	GWP – biogenic	kg CO ₂ e	-	-	-
	GWP – LULUC	kg CO ₂ e	-	-	-
	Ozone depletion pot.	kg CFC-11e	-	-	-
	Acidification potential	mol H ⁺ e	-	-	-
	EP-freshwater	kg P e	-	-	-
	EP-marine	kg N e	-	-	-
	EP-terrestrial	mol N e	-	-	-
	POCP (“smog”)	kg NMVOC e	-	-	-
	ADP-minerals & metals	kg Sb e	-	-	-
	ADP-fossil resources	MJ	-	-	-
	Water use	m ³ e depr.	-	-	-

Annex II: Sister EPDs

Sister EPDs are strictly variants of published EPDs (referred to as parent EPD) in the EPD Hub. The parent EPD can be submitted for publication at the same time as the sister EPD, but the sister EPD cannot be published if the parent EPD has not been published or is not valid.

Sister EPDs are third party verified and published.

Consistency requirements for sister EPDs:

They must have the same manufacturer, purpose, declared unit, functional unit (if used), main constituent materials and manufacturing process.

They can vary in size, finishings, detailed composition of raw materials, amount of recycled or reused content, compliance with additional standards or other parameters. Sister EPDs can have different sites of production.

They can be average EPDs as well (surcharges apply). If they are created as a design phase EPD or private EPD, it is permissible, if so they are charged at higher of the applicable rates.

Scaling tables are allowed for sister EPDs.

Requirements for impact variability of sister EPDs:

A sister or project EPD's maximum allowed variance in GWP fossil is +/-50 % A1-A3 from the published parent EPD to which the sister EPD or project EPD refers to.

When the variations are greater than 50%, the grouping of products/sites shall be duly justified in the LCA report.

There is no pre-set limit of variance for other modules or impact categories, but EPD Hub reserves the right to inspect the variance for all modules and impact categories and reject such submissions.

Annex III: Project EPDs

Project EPDs are strictly variants of published EPDs (referred to as parent EPD), that have been internally verified or apply an internal control procedure by the EPD publisher. They are not published. Project EPDs can carry the EPD Hub logo.

The validity of Project EPDs is 5 years.

Consistency requirements and Requirements for impact variability for project EPDs:

No scaling table is allowed for Project EPDs.

There is no pre-defined limit on variations for projects EPDs, but when the variations are greater than the 50% in A1-A3 for GWP-fossil, the grouping of products shall be duly justified with the statement in the LCA report.

Annex IV: Verifier guidelines

This is a guideline of do's and don'ts prepared as a best practice for verifications of EPDs to stay true to the EPD Hub principle of fact-focused and purposeful verification. EPD Hub may revise these guidelines at any time. These guidelines do not overrule PCR requirements.

DOs

- 1) Stick to the EPD Hub Principle of fact-focused and purposeful verification:
 - a. EPD publisher is ultimately responsible for the accuracy and truthfulness of their EPDs
 - b. Where the PCR, reference standard or c-PCR already provides details, a statement that confirms alignment of the EPD with these is acceptable in lieu of detailed documentation stating the same things as mentioned in the PCR, c-PCR or standard
 - c. Check all assumptions, LCA calculations and results to verify that they are in line with facts, they exist in the business and on the marketplace. They should reliably and truthfully represent the object of the study, meet the requirements of targeted standards and PCR, and do not give ground to concerns about their accuracy.
- 2) Ask for any additional information to ensure that above principles are met.
- 3) Check assumptions that have significant impacts on the results. For cut-offs that are declared in compliance with the standard and PCR, you may ask the manufacturer for list of exclusions and amounts to help in thoroughness of the verification.
- 4) Where possible, give all verification feedback in the first round of verification already. If that is not possible, prioritize verification in a way that the feedback requiring most rework is all provide in the first batch of feedback and any the editorial ones later.
- 5) Keep comments brief and concise.
- 6) Accept “manufacturer verified” items based on principle (i) listed above, unless you have a specific observation or concern that needs to be addressed.
- 7) Ask energy source/ certificates for renewables, not for diesel, propane, petrol, etc. Do not ask for this information when certificates are already present in the organisation's EPD Hub account.
- 8) Do your work diligently on the first round and avoid adding new comments in subsequent verification rounds. However, if you spot issues that you had not spotted before, it is your responsibility to provide the feedback also on later rounds.
- 9) Accept the EPD only if the submitted EPDs have correct results.

DONTs

- 1) Refrain from giving advice to customers on non-mandatory items, for example, “it is recommended to declare Module B for this product”. The purpose of the verification is not to make recommendations but to ensure correctness and accuracy.
- 2) Do not give suggestions or perform checks for items from any other PCRs that the EPD is not intended to align with. For example, if a customer wants to align with 15804+A2, do not check for alignment with ISO 21930.

- 3) For End of Life, country- or region-based scenarios are acceptable. City level data is not needed.
- 4) Avoid spreading out the comments for the same section across different verification points, for example asking the author to update inputs in product description in VP-009 and then again in multiple verification points in the checklist. It becomes inefficient for a user to keep going back to the same section to make updates
- 5) Avoid cross-referencing verification points in the verification comments. The verification points are for reference for the program operator and the verifier, and not available to the EPD authors. This makes the feedback more confusing.