

AUSTRIAN EPD-PLATFORM FOR CONSTRUCTION RELATED PRODUCTS AND SERVICES

## GENERAL PRINCIPLES AND GUIDELINES

according to the EPD programme of BAU EPD GmbH, Austria



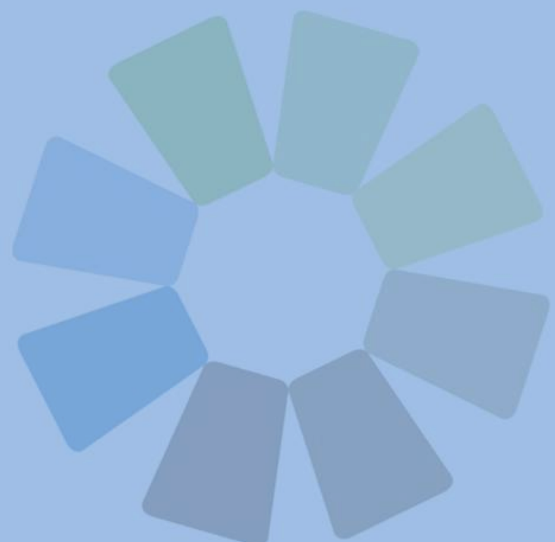
## Management-System Handbook

Quality Management and Verification  
General Product Category Rules for EPD  
General LCA Calculation Rules for EPDs

for creation of Type III EPD (Environmental Product Declarations)

**Version: 7.0.0**

**Date: 2025-02-25**



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Gender: the terms chosen in this document apply to all genders

## 1 GENERAL INFORMATION

The EPD Management-System Handbook of Bau EPD GmbH, in the following text shortly referred to as BAU EPD MS-HB or MS-HB is the basis for the creation of Environmental Product Declaration for construction related goods and services. It can be extended to other goods and services depending on demand and interest.

Publicly available information:

The MS-HB and the applicable documents extending it are published on the website of Bau EPD GmbH without cuts. An overview listing all applicable documents, format templates and forms can be found in chapter 10.

Chapter 4 contains the description of the structure of the organisation and quality management system including all required process flows of the conformity assessment programme and explains the internal and external control of documents and records. It contains rules and references with regard to the rights and obligations of clients, with special focus on the rules for the use of Logos and conformity certificates as well as the regulations how to handle complaints and appeals.

Chapter 5 contains the General Product Category Rules as well as General LCA Calculation Rules (applicable on all construction goods and services). These rules exceed the requirements found in current standards, normative documents, technical regulations, guidance documents of the head organisation ECO Platform or any other valid documents.

Chapter 6 describes the declaration of indicators and preparation of the project report.

Chapters 7 and 8 specify rules regarding the choice of generic data and requirements of accepted upstream databases.

Chapter 9 contains information on financing and fee regulations of the conformity assessment body.

The requirements in the BAU EPD MS-HB for preparation of LCA analyses and EPD documents are based on the following standards, the current version on the date of publication of the handbook was considered and integrated:

- [1] ÖVE/ÖNORM EN ISO/IEC 17065:2013 – Conformity assessment – Requirements on bodies certifying products, goods and services (ISO/IEC 17065:2012)
- [2] ÖVE/ÖNORM EN ISO/IEC 17029:2020 – Conformity assessment — General principles and requirements for validation and verification bodies (ISO/IEC 17029:2019)
- [3] EN ISO 14025:2010 – Environmental labels and declarations -- Type III environmental declarations -- Principles and procedures (ISO 14025:2006)
- [4] EN ISO 14020:2002 – Environmental labels and declarations - General principles
- [5] EN ISO 14040:2009 – Environmental management - Life cycle assessment -- Principles and framework (ISO 14040:2006)
- [6] EN ISO 14044:2018 – Environmental management - Life cycle assessment -- Requirements and guidelines (ISO 14044:2006 + A1:2017)

- [7] EN 15804:2012+A2:2019+AC:2021 – Sustainability of construction works - environmental product declarations. Core rules for the product category of construction products (EN 15804:2012 + A2:2019+AC:2022)
  
- [8] EN 15941:2024 Sustainability of construction works. Data quality for environmental assessment of products and construction work. Selection and use of data
  
- [9] EN 15942:2011 – Sustainability of construction works - environmental product declarations - Communication format business-to-business
  
- [10] EN 15978:2012 – Sustainability of construction works - Assessment of environmental performance of buildings – Calculation methods
  
- [11] ISO 21930:2017 –Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services
  
- [12] CEN/TR 16970:2016 – Sustainability of construction works. Guidance for the implementation of EN 15804  
(Note: with the following 3 exceptions as per decision of ECO Platform:
  - 1. Programme Operators may define additional indicators and publish the results if marked as „additional information/indicators“. All indicators can be declared in any section of the EPD document.
  - 2. Programme Operators may interpret the “Polluter pays”-principle dealing with the use of waste according to their own rules (modelling as disposal or recycling process)
  - 3. Default values from CEN TC product-PCRs do not have to be taken automatically, default values are subject to a case-by-case discussion.)
  
- [13] ECO Platform Standards for ECO EPD Programme Operators (editor: ECO Platform, latest update December 2024)

The regulations in the BAU EPD MS-HB are complementary to the requirements in above mentioned documents and are meant to specify, give details or show examples of defined ways of calculation within the programme.

Note: For each specific product category the complementary c-PCR documents apply (PCR-B parts of Bau EPD GmbH, based on the c-PCR documents of CEN TC 350 and product TC standardisation bodies resp. ISO/TC 59 SC 17 WG3 standardisation body)

#### **Version 7.0.0**

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**Update of versions:**

version	comments	Date of issue
V 0.0.0	Merging of the single documents «basis document» and «LCA calculation rules», integration of necessary management system components and document control mechanisms in view of a future accreditation of Bau EPD GmbH, removal of redundant text passages from underlying standards, limitation on complementary passages.	2017-07-17
V.0.0.1	Adaptation as per requirements of EN 15804:2019 + Amendment 2, specifications and clarifications following the latest decisions from the meetings of the PCR Advisory Board and respective comments, removal of some redundant text passages from underlying standards, some redundancies were left for clarification. Chapter 5.6 Allocation was updated.	2020-08-24
V.1.0.0	Revision of allocation rules in cooperation with the OEKOBAUDAT user circle, publication for EPD creation	2021-01-14
V.2.0.0	Changes, adaptations and additions based on the requirements of ÖNORM EN ISO 17065 – Conformity assessment – Requirements on bodies certifying products, goods and services in cooperation with Accreditation Austria	2022-04-20
V.3.0.0	Changes Green Energy and further changes Process and Quality Management, structural description for accreditation	2022-06-27
V.4.0.0	Change of reference to EN 15804:2019+A2+Corr2022 with corrigendum, change of necessary period for life cycle inventory data, other topics of modelling (exclusion of BMB, REC re-allocation, avoided burden approach), minor editorial changes, permission of 1 verifier for already verified ECO Platform EPDs, new overview structure for data backup via a new cloud solution, after successful accreditation (notification October 2022) the format templates were supplemented by the accreditation mark (federal eagle, accredited body 0966). Change in the obligation to convene product group forums. Addition of guidelines for modelling indicators related to the foreground system. Documents referring to EN 15804+A1 are withdrawn.	2023-01-27
V.5.0.0	Additions to LCA tools: Verification of tools and EPDs created with tools, chapter 5.10, minor editorial changes, majority decision-making in the PCR body, addition of 4.4.2.8 Impartiality tasks of the advisory board, difference between new issuance/renewal and more security through backup of data now every 6 hours, Supplement topic preliminary studies M-Doks 13a and 14a for preliminary studies	2023-01-27
<b>V.6.0.0</b>	Additions to fulfil the ECO Platform Standards version December 2024 and supplement by version June 2024, additions and adaptations with reference to EN 15941, other additions resulting from resolutions of the PCR committee and based on specifications of Accreditation Austria, additions in chapter 6.4 Digital data transfer, additions new specifications OEKOBAUDAT, M-Dok 37	2024-11-06
<b>V.7.0.0</b>	<b>Changes to voting rights of the PCR body in section 4.2.3, changes based on the comments and results of the ECO Platform audit from December 2024, changes based on updates in ECO Platform Standards released in December 2024, reference to M-Dok 38 “Comment Table for PCR creation and review</b>	<b>2025-02-25</b>



## 2 INTRODUCTION

The Austrian EPD platform for construction related products and services sets the framework for the preparation of Type III environmental product declarations for building related products according to the Austrian standards ÖNORM EN ISO 14025 and EN 15804, as well as standards in relation to it.

Bau EPD GmbH is a member of ECO Platform (head organisation of EPD programme operators, [www.eco-platform.org](http://www.eco-platform.org)) and follows its Guidance documents and audit and verification rules (these complement and specify the existing CEN and ISO standards and technical specifications).

Bau EPD fulfils the requirements of ISO 17065 – Conformity assessment – requirements on bodies certifying products, processes and services. We hereby note that the term “certificate” resp. “certification” defined in this standard is used analogically for Type III Environmental Product Declarations (EPD), although these do not contain comparative assertions or benchmarks like Type I or Type II Environmental Certificates do.

Type III environmental product declarations are principally designed to guarantee the exchange of information within construction economy (Producers, planners and executive construction companies), although their application as a basis for the exchange of information between the economy and consumers shall not be precluded according to ÖNORM EN ISO 14025.

The environmental product declarations are based on third party verified data from LCA, inventory analysis or information modules and additional information that shall together cover the essential environmental aspects of the product.

## 3 APPLICATIONS

### 3.1 Application of the document on hand

The Austrian standard ÖNORM EN ISO 14025, describing the principles and procedures for preparation, actualisation and publication of Type III environmental product declarations as well as the interaction of the required actors, demands the written formulation and publication of the rules that are necessary for operating the programme for environmental product declarations. ÖNORM EN ISO/IEC 17065 contains additional requirements on the quality management system of a conformity assessment body of products. These requirements are described in chapter 4 of the document on hand.

Chapter 5 regulates additional programme specific requirements of Bau EPD GmbH on LCA and EPD creation that are not (yet) covered by any other existing and valid standards or regulative documents.

### 3.2 Application of the programme for environmental product declarations

The programme for environmental product declarations has been created as a service for producers of construction related products. Within the term “construction related products” come building materials, materials for interior fittings, components of building services and techniques (domestic services) and sanitary fittings or building elements for buildings or other structures.



The construction related products are aggregated into product categories or product groups that fulfil equivalent functions in the building or structure. EPD are not considered to be tools for comparing quality criteria of single building related products or services.

Within the application of an EPD the whole life cycle of a product must be considered, and so the EPD Type III environmental product declaration can only be useful for comparison within the whole system of the building. The same basis documents (PCR) and upstream databases must be used to enable comparative assertions.

A well-structured summary of the individual steps in the process flow on the path to an EPD can be found in M-Document 26 “Conformity assessment programme for EPD – process flow”.

**Applicable documents:**

BAU EPD M-Document 26 “Conformity assessment programme for EPD – process flow”

### 3.3 Preliminary LCA studies for subsequent EPDs (LCA projects outside the scope of accreditation)

The distinction between preliminary studies and actual EPDs from Bau EPD GmbH can be made as follows:

Preliminary studies do not take place within the scope of accreditation of Bau EPD GmbH and do not have to comply with all points of the specifications of the umbrella organisation ECO Platform. They may or may not comply with EN 15804 in all respects. They may contain specific data or generic data and should be as representative as possible. If the data for A1-A3 originate from research projects, extrapolations or simulations and/or no representative, sufficient period of time can be demonstrated for an actual life cycle inventory data collection at the plant, the project must in any case be regarded as a preliminary study. Preliminary studies are useful for innovations and start-ups, but also for other purposes, and are reviewed by Bau EPD GmbH in accordance with the procedure for EPDs within the scope of accreditation. However, they do not receive an accreditation mark or an ECO Platform logo and are only valid for 2 years. It must be stated in the project report when the actual data collection is scheduled to begin. The data must then be replaced and a new verification for EPDs within the scope of accreditation must be carried out. In any case, the preliminary study is withdrawn as expired when the 2-year period is over, even if no EPD can follow promptly.

**Applicable documents:**

BAU-EPD-M-DOCUMENT-13aA2-prestudy-project-report-content-and-format-template-EN15804

BAU-EPD-M-DOCUMENT-14aA2-prestudy-content-and-format-template-EN15804+A2

## 4 ORGANISATIONAL STRUCTURE AND QUALITY MANAGEMENT SYSTEM FOR EPD CREATION

### 4.1 Target groups and objectives

The goal of the Austrian EPD Platform for construction products is to create rules for the preparation of EPD within a widely accepted corporative consensus to enable aggregation on building element or building level and with that application of EPD data. These rules can be considered as a coherent basis for the declaration of construction products in accordance to the EPD programme of Bau EPD GmbH and give a solid ground for recognition in different user applications and databases.

The EPD programme is scheduled for communication between companies (business to business) but its application as a basis for a normative regulated information exchange between businesses and consumers in future shall not be precluded. For this application Bau EPD GmbH provides an online platform for publication of ([www.bau-epd.at](http://www.bau-epd.at)).

Following ISO 14025, the superordinated goal of EPD is to support supply and demand of less pollutive products by verifiable, exact and by no means misleading information about environmental aspects. With that the potential of a market orientated, continuous improvement shall be achieved. EPD allow professional purchasers and planners to estimate environmental aspects of construction materials. EPD shall contain information based on LCAs according to ISO 14025 and additional information that are not based on LCAs according to ISO 14025 to cover the environmental aspects of products through their whole life cycle.

EPD can be used as documentation to fulfil the requirements of the Construction Product Regulation (CPR Regulation EU 305/2011). (Regulation (EU) No 305/2011 of the European Parliament and of the Council (recital 56).

Environmental Product Declarations (EPD) form the basis for the data for assessing buildings on an ecological level. This is currently laid down in the new European Standards project “Sustainability of buildings” (EN 15978).

EPD are recognized by all current Building Assessment Schemes.

Environmental Product Declarations are based on ISO standards and are therefore internationally aligned. They are suitable as proof of environmental claims in the public procurement arena.

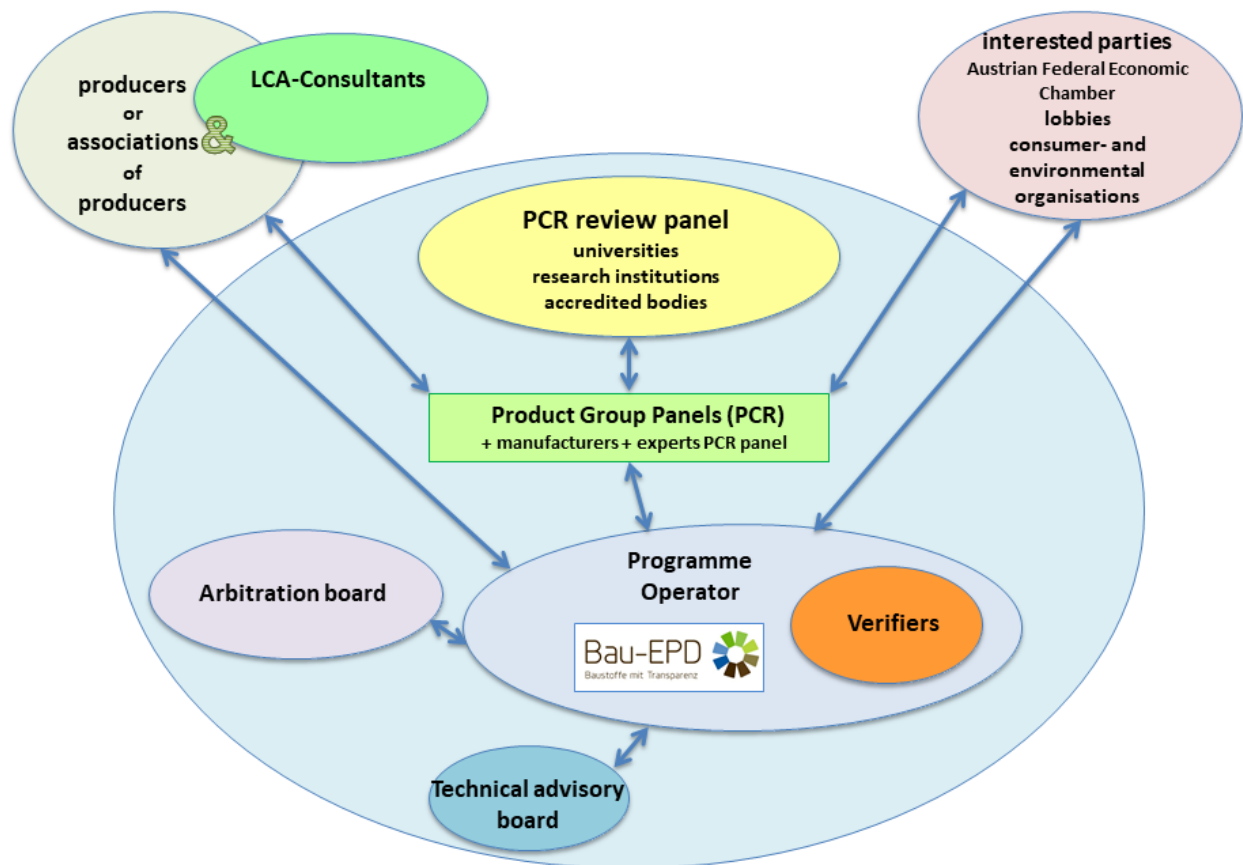
EPD can serve for weak point analysis over the product life cycle, for comparison in context of its application in the building etc.

## 4.2 Organization of the Austrian EPD Platform for construction related products and services

The essential elements of organisation within the EPD programme are:

- a. the Bau EPD GmbH as programme operator;
- b. industry and producers of construction materials and their associations, supported by LCA experts if need;
- c. the PCR review panel (advisory board, in Austria called PCR-Gremium);
- d. the product group panels;
- e. interested parties;
- f. the technical advisory board
- g. an arbitration body that can be installed if need (representatives must be chosen in a well-balanced way from members of the organizational elements a-f)

The following chart shows the interaction of actors:



#### 4.2.1 Programme Operator

The Bau EPD GmbH operates with the Austrian EPD platform for construction materials the objective programme for Type III environmental product declarations. The Bau EPD GmbH is according to ISO 14025 responsible for the set-up and administration of this programme.

The administration contains the following list of tasks which may not be complete:

- a) preparing the General Principles and Programme Rules, their maintenance and communication;
- b) publishing the names of organisations and persons participating in the program development (publication of names of individual persons and logos of institutions only with permission of the persons concerned);
- c) ensure that requirements on Type III Declarations according to ISO 14025, clause 7, are met;
- d) establish a procedure to ensure consistency of data within the programme;
- e) keep lists and documentations of PCR documents and EPD and offer access to these lists to the public
- f) publish PCR documents and EPD of the programme

- g) follow changes in procedures and Type III environmental product declarations in other programmes and, if necessary, adapt own procedures and documents;
- h) ensure the selection of competent and independent verifiers as well as members of the PCR review panel;
- i) establish a transparent procedure for the verification of PCR, in which the scope of the verification and the rules of assembling the team of verifiers is shown;
- j) Develop a procedure to avoid misuse of these international standards as a reference to the Type III EPD programme or its logo
- k) ensure that Programme Rules are respected

Bau EPD GmbH is a member of the ECO Platform (head organisation of EPD Programme Operator) and is obliged to follow the association's guidelines and decisions. Recurring audits allow Bau EPD GmbH to apply the ECO Platform Quality Logo on published EPD.

**Applicable Documents:**

*BAU EPD-M-DOCUMENT-1- Organisation, function holders, competences*

*BAU EPD M-DOCUMENT 34-External contractors competence assessment*

*BAU EPD M-DOCUMENT 28-Matrix of powers and competences*

#### 4.2.2 Producers

The producer or association of producers is the single holder of an environmental product declaration. The producer is responsible and liable for the content.

It is the producer's task to provide an LCA that was prepared in compliance with the BAU EPD MS-HB, the life cycle inventory, the project report as well as additional data and information required in particular PCR B documents under the condition of confidentiality. The draft of the EPD is also to be delivered to the programme operator.

The producer is entitled to delegate this work to external LCA experts and can reduce his own part to collecting and forwarding data from production sites/suppliers and business partners.

The producer has the duty to inform the programme operator, if changes in technology or other aspects occur that have an impact on the content or representativity of an existing EPD and with that require revision or adaptation.

The producer is obliged to pay the fees for verification, publication of the declaration and participation in the Programme as defined in the fee regulation – see chapter 9 "Financing and fees".

The producer is obliged to accept the requirements on use of the logo of ECO Platform.

##### **Applicable Documents:**

*BAU EPD M-Document 2: Requirements on LCA and EPD – text template*

*BAU EPD M-Document 27-Application for EPD verification*

*BAU EPD M-Document 3: contract verification and participation in EPD Programme Bau EPD*

*BAU EPD M-Document 4: Rules ECO Platform EPD logo use*

*BAU EPD M-Document 4a: Rules for use of Bau EPD logo*

#### 4.2.3 PCR review panel (advisory board)

The PCR review panel, in Austria called PCR-Gremium, is an independent, competent third party presenting the chief and at least two members. It benefits from instruction-freedom and organises itself independently from the programme operator. It chooses its members, chief and other entities independently. The chief of the PCR-Gremium and his or her deputy chiefs are elected by the PCR-Gremium. The tasks of the chief can generally also be executed by his deputies, if needed.

Within the Austrian EPD Platform the PCR review panel is formed by employees of universities, research institutions and accredited bodies or employees of companies specialized on preparation of LCA or verification of EPD.

Bau EPD GmbH keeps a list of all persons sent by these organisations.

In compliance with ISO 14025, clause 8.2.3, the qualification of the verifiers shall comprehend:

- a) General knowledge of industry and product-related environmental matters.
- b) Good process and product knowledge within the relevant product or service.
- c) In-depth knowledge of the principal LCA methodology, knowledge of the relevant standards in the field of environmental labelling and declarations, and life cycle assessment.
- d) Knowledge in the overall regulatory framework in which the concept of EPD has been introduced and the scope of the PCR documents.
- e) Knowledge of the Type III EPD programmes

The PCR review panel decides about the recruitment of new members resp. member organisations under consideration of the qualifications mentioned above.

The prerequisite for the admission of persons to the PCR committee is that they are employees of member organisations or, in the case of one-person companies, persons who have many years of experience in the LCA field or who wish to build up practical experience.

The following rules on voting rights apply to decisions made by vote:

Approved verifiers who are required to attend PCR committee meetings are granted voting rights on the basis of their status as verifiers, which requires many years of experience and proof of skills and competences in accordance with M-Doc 1.

Authorised life cycle assessors are granted voting rights as soon as at least 5 EPD projects for different products have successfully completed the verification process at Bau EPD GmbH.

Employees of building material manufacturers or their associations can be accepted as associate members without voting rights, provided they have the necessary expertise. They must be experts from an ‘in-house life cycle assessment department’.

Decisions should always be made by consensus. If no consensus can be reached, a simple majority decides, whereby each institution receives 1 vote, even if an institution has sent several employees to the committee and several of them can prove that they are qualified to vote.

Tasks of the PCR review panel:

- a) Workout of product category rules (Summarization of products with similar or equal function and application into groups of equal functional units).
- b) Election of experts into product group panels where product category rules (PCRs) are worked out or are reviewed at need and on a regular basis.
- c) Verification of the PCR. This is carried out by those members of the PCR review panel who are not involved in the process of working out the PCR. For the verification of PCRs the chief of the PCR review panel and at minimum one other member are required.
- d) The individual and independent verification of the environmental product declaration. This is in any case done by a member of the PCR review panel who is neither involved in the preparation of the LCA nor in the process of developing the EPD and who is not confronted with conflicts of interest. The person must have in-depth knowledge of process and product characteristics of the product category in question. Registered verifiers of Bau EPD GmbH must be members of the PCR Panel. A declaration must at least be checked by one approved verifier.
- e) Continuing education

**Applicable Documents:**

*BAU EPD M-DOCUMENT 5: list of members of PCR panel plus evidence of education*

*BAU EPD M-DOCUMENT 06: list of registered LCA practitioners in PCR Advisory Panel*

*BAU EPD-M-DOCUMENT 15: list of approved verifiers*

#### 4.2.4 Product Group Panels (Product Group Forum)

The product group panel is in charge of the preparation of PCRs for the Programme Operator. The panel is constituted on recall of the Bau EPD GmbH and the chief of the PCR review panel suggests the experts. The panel obtains a chairperson who is supported by at minimum one other member as well as experts from interested parties and/or industry.

Tasks of the product group panel:

- a) exact definition of a product group;
- b) identification of the characteristic impact on the environment;
- c) determination what documents for evidence must be provided;
- d) preparation of the draft of the PCR;
- e) presentation of the draft in front of the PCR review panel;
- f) adaptation of the PCR according to the comments received.
- g) Support review processes of PCR

#### **Applicable Documents:**

*BAU EPD M-Document 9: overview list product group panels-members (contact and competences)*

#### 4.2.5 Interested parties

As interested parties for Type III EPD-programmes the following groups can be considered according to ISO 14025 (raising no claim to completeness): producers, suppliers, associations, purchasers, users, consumers, non-governmental organisations, public institutions and, if relevant, independent parties and certification bodies.

Involving the interested parties in the process of developing the programme according to ISO 14025, clause 6, ranges from the workout of the PCR to conclusion following the rules set in the General Principles for PCR preparation. The General Principles have to be published on the internet for 4 weeks to give interested parties the chance and possibility to transmit written comments. In the process of preparation of the PCR-B parts support of members of interested parties is designated. In addition to that here also a 4-week-period of publication on the internet gives all stakeholders the possibility of written remarks. The eventually necessary compromise shall be achieved in extra set meetings where interested parties, the product group panel and representatives of the PCR review panel come together.

Natural persons as well as organisations can be listed in the mailing list “interested parties” of Bau EPD GmbH.

#### 4.2.6 Technical Advisory Board (TAC)

The Technical Advisory Board (TAC) is an additional panel supporting the programme operator and fulfilling tasks to ensure impartiality. Detailed descriptions on composition of members, goals and tasks can be found in *BAU EPD M-*



Document 24-Internal regulations TAC as well as in BAU EPD M-Document 25-contract cooperation TAC. A list of active members of the TAC can be found in BAU EPD M-Document 23-Members TAC.

**Applicable documents:**

BAU EPD M-Document 23-Members TAC

BAU EPD M-Document 24-Internal regulations TAC

BAU EPD M-Document 25-contract cooperation TAC

## 4.3 Procedures for preparation, verification and maintenance of Product Category Rules (PCR) and EPD documents

### 4.3.1 Procedures for preparation, verification and maintenance of Product Category Rules (PCR) B

The Product Category Rules (PCR) give the basis for the environmental product declarations. They define all that has to be declared in accordance to the specific PCR and are developed in Product Group Panel under involvement of interested parties.

Following ISO 14025 the possibility of adopting readily available PCR documents for equal product categories from appropriate market regions shall be checked. The product group panel will therefore make an appropriate research and adopt existing PCR documents if possible. Especially standards from the CEN- und ISO committees (CEN/TC 350 und ISO/TC 59 SC 17 WG3) shall be considered. CEN TC c-PCR overrule Programme Operator related PCR documents.

PCR according to EN 15804 published as EN standards by CEN for a product family shall have prevalence over any other PCR, unless technically justified. Such deviations must be noted in the project report and the EPD.

The content of a national and/or Programme Operator related PCR should refer to the corresponding CEN TC c-PCR.

Regarding the procedure of preparing PCR documents ISO 14025 recommends in clause 6.7.1 to prepare the PCR after the definition of the product category by reference to a fitting LCA.

#### 4.3.1.1 Content of PCR-B for specific construction materials/elements/systems

##### 4.3.1.1.1 General Rules

Requirements for the content and format of the project report are dealt with under 4.3.3 and 6.2 and in BAU EPD-M-DOKUMENT-13A2- project-report-content-and-format-template-EN15804+A2. Requirements for the presentation of the content and design of the format of the EPD are presented in product-specific PCRs for building materials (PCR-B) or an EPD format template. Bau EPD GmbH offers Microsoft Word templates for both project report and EPD.

##### 4.3.1.1.2 Definition of the Product Category

- a) definition and description of the product, applying correct number of numbering system, description of function and application of the products
- b) List of standards applicable for the product (harmonised EN standards, European technical approvals/admission/valuations or the standard made mandatory in the ÜA (Übereinstimmung Austria) list of products. Declaration of product features to be declared according to these standard as well as self-declarations and third-party verifications.
- c) Listing of additional product features that have to be declared  
e.g.:
  - dimensions,

- bulk density,
- equilibrium moisture content (EMC),
- mechanical characteristics (compressive strength, tensile strength, bending tensile strength, E-modulus),
- fire protection: inflammableness, generation of smoke, burning dripping / fire resistance
- acoustic protection: sound reduction index
- thermal protection: thermal conductivity, heat transfer coefficient
- protection against moisture: water vapour diffusion resistance factor

(This information can also be stated in the Austrian national Annex to the EPD. It is allowed to reference to technical product data sheets. Especially with average EPDs such a reference is useful, if not all products of a product range can be described in detail).

- d) List of materials and substances that can affect human health and/or the environment through all stages of the product life cycle, if not declared within LCA and if true, requirement of further proof. (see ISO 14025, concerning radioactivity, way of gaining raw materials etc.)
- e) In the context of PCR creation the Product Group Panels may decide to integrate text examples, examples of figures and/or flow charts.

#### **4.3.1.1.3 Requirements on the LCA**

General rules for LCA applicable on all product categories following ISO 14025 summarized in chapter 5.

In the PCR Part B the functional unit resp. the declared unit must be defined and it is to declare, which modules of EN 15804 cannot be implemented, if the EPD does not cover the whole life cycle. If necessary other specification, e.g. requirements on data quality, cut-off criteria or allocations can be stated.

#### **4.3.1.1.4 Additional information about emissions of dangerous substances into (indoor) air, soil and water during use stage**

If relevant for the product category, the PCR makes it compulsory to declare emissions of regulated substances into water and soil, if the products are in contact with water and soil during use stage). The check must be fulfilled with reference to the document „Guidelines for emissions into indoor air and environment“.

This requirement of EN 15804 can also be applied on non-regulated substances if they are relevant.

The required testing for that must be executed by accredited bodies or institutions of equal character and qualification.

This part can be declared in the EPD as additional information (new chapter or annex), if no mandatory passages derive from the PCR B documents and producers want to declare the information.

#### **4.3.1.2 PCR-Verification and involvement of interested parties**

The verification of PCR is done by a member of the PCR review panel who is neither involved in the preparation of the PCR.

Following ISO 14025 the chief and at minimum one other member of the PCR review panel have fulfil this task together. If the chief is involved in the Product Group Panel, the PCR-review can also be lead by a deputy chief.

The verification of the PCR has to show in compliance with ISO 14025 that the PCR developed is in accordance with the range of standards ISO 14040 and ÖNORM EN ISO 14025, the General Principles for Type III environmental product

declarations were followed and that the information made compulsory in the PCR give a description of all essential environmental aspects of the product. In addition to that the PCR must be compliant to EN 15804.

After the first check on the PCR by the PCR review panel the documents will be presented for 4 weeks on the internet homepage of the Bau EPD GmbH to gather comments of interested parties. Comments shall be directed to Bau EPD GmbH in a written way. After respective corrections and/or improving adaptations with reference to the comments received the approval of the PCR by the PCR review panel will follow. The publication is done on the homepage of Bau EPD GmbH and the rules can be used for EPD creation.

#### 4.3.1.3 Maintenance of PCR documents

The validity of a PCR document is 5 years. After 5 years the Bau EPD GmbH induces either an extension or revision through the PCR review panel. Changes of the standards underlying the PCR or new research results concerning environmental features of materials, substances or processes can make a revision necessary at a sooner date.

In any case, the PGF must be convened when a PBR is newly created. If a PCR is extended to similar product groups, consideration must be given to which stakeholders have to be consulted in a smaller PGF before publication for interested parties. In any case, representatives of the affected product groups should comment on the draft. In the case of formal changes and changes resulting from new laws and/or standards or other new rules (e.g. Eco Platform Guidelines), a convening can be waived and affected stakeholders can comment within the comment period for interested parties.

#### **Applicable Documents:**

*BAU EPD-M-DOCUMENT-10-product categories PCR B numbering system overview*

*Product specific PCR B documents (latest versions can be downloaded from the website [www.bau-epd.at](http://www.bau-epd.at))*

*BAU EPD-M-DOCUMENT-11-general rules for PCR creation*

*BAU EPD-M-DOCUMENT-12: procedure for PCR creation for specific product groups and PCR verification flow diagram*

*BAU EPD-M-DOCUMENT-38: comment table for PCR creation and review*

#### 4.3.2 Procedure of application of the LCA method

See chapter 5.

#### 4.3.3 Project Report

The project report is the systematic and detailed summary of the project documentation, a support for the verification of the EPD. It must show that the information based on the LCA as well as additional information are in compliance with EN 15804. It must be accessible to the verifier under conditions of confidentiality. It is not part of the public communication.

The project report must contain the content elements described in chapter 6 and the templates for content and format.

The project report must contain all documentation about further environmental impact that has to be declared in the EPD. These documents (verification reports, test reports and additional technical information about each stage in the life cycle that were not considered in the LCA) can be added in form of a copy. Verifiers must check on additional information whether it has been 3rd party verified and confirmed by recognized, independent testing centers.

#### **Applicable Documents:**

C:\Users\Sarah\NextBauEPD\Bau EPD GmbH\006 - QM PKR PGF\PKR Allgemein-MS-HB+M-Docs\English-MS-HB and M-Docs\BAU-EPD-MS-HB-Version-7-0-0-issue-date-2025-02-25-English-Website.docx

~~BAU EPD-M-DOCUMENT-13A1-project report content and format template-EN15804+A1-withdrawn~~  
~~BAU EPD-M-DOCUMENT-13A2-project report content and format template-EN15804+A2~~

#### 4.3.4 Environmental Product Declaration

According to ISO 14025 all Type III environmental product declarations of a product category must have the same format and contain the same data with reference to the PCR.

##### 4.3.4.1 Contents of the Environmental Product Declaration

General information, product description and life cycle description, scenarios, information about system boundaries, allocation and cut-off criteria, additional technical information, declaration of environmental parameters derived from the LCA analysis and all other required information as per ISO 14025 resp. EN 15804:

See respective product specific PCR, that can be used as a content and format template. In addition to that Bau EPD GmbH offers a template for EPD content and format.

#### Applicable Documents:

~~BAU EPD-M-DOCUMENT-14A1-EPD content and format template MS Word Document-EN 15804+A1-withdrawn~~  
~~BAU EPD-M-DOCUMENT-14A2-EPD content and format template MS Word Document-EN 15804+A2~~

#### 4.3.5 Procedure of verification of the environmental product declaration

##### 4.3.5.1 General

The third party verification of the environmental product declaration and the independent verification of the data are completed by members of the PCR-Panel who are, in compliance with ISO 14025, clause 8.2.1 neither involved in the process of developing the declaration nor do they belong to the same organisation as the LCA-Practitioner.

The system is carried out by individual persons that can be registered as independent external verifiers and/or registered LCA-practitioners at the Bau-EPD GmbH. To guarantee the independence of the verifiers, an LCA-practitioner must not be linked to or working for the same institution or company as the verifiers. The verification is principally carried out under the principle of dual control. The verifiers must not belong to the same organisation. Persons who want to act as external verifiers or registered LCA practitioners can apply any time and have to undergo a certain procedure of quality assurance. The procedure for approval and supervision of approved LCA practitioners and verifiers are carried out under the auspices of the programme operator.

For EPDs that are to be verified for the first time, at least 2 approved verifiers must verify them. For EPDs that have already been verified by an ECO Platform programme operator, one verifier from Bau EPD GmbH is sufficient. Approved verifiers of ECO Platform programme operators are considered to be equally qualified. An ECO Platform programme operator is an institution that is an active member of the ECO Platform and has been able to positively complete all ECO Platform audit procedures required up to the submission of the EPD or is simultaneously undergoing an update audit. These institutions bear the title "Established Programme Operators". Further information: [www.eco-platform.org](http://www.eco-platform.org).

For EPDs submitted on the basis of LCAs prepared with pre-verified LCA tools, both the LCA tool and a pilot EPD based on the LCA tool must be checked by 2 verifiers. Afterwards, the tool is blocked by the programme operator and modifications cannot be made. All further EPDs based on this mentioned, already blocked tool can be verified by 1 person, even if they are submitted by different clients/declaration holders. It is not a prerequisite that the verifying person was involved in the verification of the tool itself. However, he/she will have full access to the verification documents of the tool.

Bau EPD GmbH recommends the use of format and structure templates of Bau EPD GmbH. Bau EPD GmbH reserves the right to reject documents that are not complete or clearly prepared. In the event of justified doubts about the completeness or correctness of the LCA, a second person may be called in as a verifier or the PCR Panel.

The procedure of the verification must be transparent.

The qualification of the verifiers must include the following points:

- knowledge of relevant sector, product and product-related environmental aspects;
- process and product knowledge of the product category;
- expertise in LCA and methodology for LCA work;
- knowledge of relevant standards in the fields of environmental labelling and declarations and LCA;
- knowledge of the regulatory framework within which requirements for Type III environmental declarations have been prepared;
- knowledge of the Type III environmental declarations programme.

The verifier resp. the team of verifiers is suggested by Bau EPD GmbH, the manufacturer and/or LCA-practitioner is entitled to reject the suggestion in case of possible bias. The independent verification of the project report and the verification of the EPD are carried out by the same person(s).

**Applicable documents:**

*BAU EPD-M-DOCUMENT-15-list of approved verifiers*

*BAU EPD-M-DOCUMENT-16-application form for independent third-party verifiers*

*BAU EPD-M-DOCUMENT-17-evaluation process verifiers for EPD project+procedure EPD verification*

*BAU EPD-M-DOCUMENT-18-template contract for verifiers of an EPD project*

#### 4.3.5.2 External verification of life cycle inventory, project report, EPD document and publication of the declaration, ownership rights

The independent verification as per ISO 14025 must confirm that the documents are fulfil the requirements of standards and rules they are based on, are in compliance with the general programme rules and guidelines and fulfil all rules defined in current product-specific PCR documents for the product groups under study. The verification must confirm that the declaration shows exactly the data calculated in the documents, on which it is based. It must also check on plausibility. Verifiers must go through a checklist while performing the verification process. The checklist is based on the guidelines for verification and quality of ECO Platform. It is integrated in the verification report template.

The verification report shall document the verification process, while adhering to the obligations of covering rules for data confidentiality. This report shall be available to any person upon request. It must be communicated to Bau EPD GmbH.

The head of the conformity assessment body evaluates the statements of the verifiers.

If Bau EPD GmbH determines, based on the verification report or any other verification statements, that the data supporting the Type III environmental declaration are inadequate, incorrect or incomplete the declaration shall not be published.

The decision of release of the declaration falls to be determined by Bau EPD GmbH only.

The ownership rights of the declaration remain at Bau EPD GmbH. The declaration certificates are awarded to the client and can be withdrawn in case of violations against the contractual rights and duties based on the MS-HB and its applicable documents.

The decision of external publication and communication within the period of validity must be decided by the holder of the declaration (client).

A detailed description of the process flow can be found in BAU EPD M-Document 26-Conformity Assessment Programme EPDs-Process Flow.

#### **Applicable Documents:**

*BAU EPD M-Document 19-template verification report including checklist for verification A1+A2*

*BAU EPD M-Document 19a: Template verification report additional comments*

*BAU EPD M-Document 26 Conformity assessment programme for EPD – process flow*

#### **4.3.6 Validity of the environmental product declaration**

According to EN 15804 an EPD is valid for a 5-year period from the date of issue, after which it shall be reviewed and verified.

Extension:

An EPD shall only be reassessed and updated as necessary to reflect changes in technology or other circumstances that could alter the content and accuracy of the declaration. An EPD does not have to be recalculated after 5 years if the underlying data has not changed significantly.

Some life cycle inventory data from earlier periods may still be representative. Only the validity date changes, but not the results.

Re-issuance:

The EPD must be recalculated, underlying data or calculation rules have changed significantly. Current life cycle inventory data must be collected. The reissue can be carried out ahead of time at the request of the manufacturer. The validity date and results change.

After 5 years, either evidence must be provided that an extension is reasonable and representative or a new issue must be applied for. After a maximum period of 10 years a review and new issue of the EPD is necessary.

#### **Treatment of changes affecting the certification:**

Requirement as per clause 9 in EN 15804: A reasonable change in the environmental performance of a product to be reported to the verifier is +/-10 % on any one of the declared indicators of the EPD (see Clause 7). Such a change may require an obligatory update of the EPD, even before the 5 years of validity are over.

Examples for changes occurring within the sphere of the manufacturer:

- energy consumption (Electricity, gas, fuels), if contracts with energy providers change within the validity period of the EPD, a yearly proof of energy contracts and delivery is necessary if a marked based energy calculation approach is used (calculation with real energy mixes instead of country specific average mixes)
- changes in production processes, new assets/plants/equipment,
- use of different raw material mixes
- production in different/additional plants
- new markets with significantly longer transport scenarios

Changes not resulting from the sphere of the declaration holder (changes in the EN 15804, ISO 21930 resp. ISO 14045 or connected PCR documents) are communicated to the client as soon as the standards are published. In this case a new issue of the EPD is only necessary after the expiration of the validity period of 5 years.



#### 4.3.7 Confidentiality, data protection and publication of EPD data

The conformity assessment body has established general rules and legally enforceable commitments to ensure confidentiality and protection of data collected under the framework of the conformity assessment work. This gives protection to all involved parties.

Rules concerning confidentiality can be found in *BAU EPD M-DOCUMENT 3: Contract verification and participation in EPD programme Bau EPD for clients, for verifiers in BAU EPD-M-DOCUMENT-18-template contract for verifiers of an EPD project* as well as in *BAU-EPD-M-DOCUMENT-31-NDA-non-disclosure agreement*. Alternatively or in addition to M-Dok 31, equivalent confidentiality declarations from third-party providers may be used.

The EPD document is published on the website of Bau EPD GmbH and download is made available for all interested parties. The result tables are provided in machine-readable format.

The inventory analysis and project report are given only to the verifiers. The verifiers are obliged to keep the information confidential.

Precondition to act as a verifier is the signing of a confidentiality statement. In the verification report, that shall be available to any person upon request, no confidential data shall be made public.

Note: When the conformity assessment body is required by law or authorised by contractual arrangements to release confidential information, the client is notified about content of the provided information, unless prohibited by law.

##### **Applicable documents:**

*BAU EPD M-DOCUMENT 3: Contract verification and participation in EPD programme Bau EPD*

*BAU EPD-M-DOCUMENT-18-template contract for verifiers of an EPD project*

*BAU-EPD-M-DOCUMENT-31-NDA-non-disclosure agreement.*

#### 4.3.8 Periodical check and maintenance of the BAU EPD MS-HB and product specific PCR

The period of validity of the MS-HB and product specific PCR documents is 5 years. After 5 years the Bau EPD GmbH reminds the PCR review panel to decide about extension of the validity period or revision and adaption. Changes of the standards underlying the documents in question or new research results concerning environmental features of materials, substances or processes can make a revision necessary at a sooner date.

### 4.4 Quality Management System

The conformity assessment body's top management has established mandatory rules to fulfil the requirements of ISO 17065 including introduction, documentation and maintenance of the QM system. The top management is obliged to maintain the necessary standards and guidelines and fulfil steps of the improvement cycle as well as regularly checks on effectiveness.

This includes:

- ensuring that the management system leads to the intended results
- acceptance of accountability for the effectiveness of the management system
- conception of policies and goals
- definition of roles, powers and competences as well as responsibilities
- integration of requirements of standards and creation of necessary guidelines
- application of a risk based and process-oriented approaches

- provision of necessary resources

All employees have access to all QM documents concerning their tasks and commit themselves to full implementation of all requirements and measures. The top management is committed to act as a role model.

Proof of implementation is provided by maintaining the status as an accreditation body.

#### 4.4.1 Description of the Quality Management System

The chapter describes elements of the QM System such as rules for control of documents and records. It describes the processes concerning internal and external audits as well as corrective measures. Concepts for detection of errors and preventive measures are developed, a certain amount of flexibility and pragmatic must be applied to deal with the fact that LCA is still a very new matter and object to scientific discourse and discussion. The fact that current standards and guidelines as well as requirements from laws concerning LCA leave room for interpretation and logical requirements i.e. concerning improvement of circularity are not or not clearly formulated. The fulfilment of programme-internal rules and decisions is generally the highest claim, but the critical review of such rules must also be an approach among all stakeholders.

##### Responsible positions/functions within the programme operation

HCAB:	Head of conformity assessment body as per ISO 17065
HPr-EPD:	Head of EPD programme operation as per ISO 14025
QM:	Head of quality management
Int. Auditor:	Internal Auditor as per 17065
C-PCR:	Chair PCR review panel as per ISO 14025
M-PCR:	Member PCR review panel
C-PGP:	Chair PGP Product group panel
M-PGP:	Member Product group panel
V-EPD:	Verifier EPD/LCA
V-TAC:	Chair of technical advisory board (TAC, consulting panel)
M-TAC:	Member of TAC
MI:	Mechanism for safeguarding impartiality and non-discrimination

Responsibilities within the QM System:

HCAB, QM: responsible for internal audits, creation, adaptation and control of documents, review and approval of QM documents concerning management and process flows

C-PCR: Approval of new members in the PCR review panel, approval of MS-HB chapter LCA rules and approval of new product specific PCR

##### **Applicable documents:**

*BAU EPD-M-DOCUMENT-1- Organisation, function holders, competences*

#### 4.4.2 Control of documents

##### Traceability of QM documents:

An overview of all documents can be found in *BAU-EPD-M-DOCUMENT-33-Overview valid QM-Documents-documentation of track changes*.

In *BAU-EPD-M-DOCUMENT-29-File index data saving* an overview on the file structure of saved documents and records on the server of Bau EPD GmbH can be found.

For the employed verification personnel as well as for other stakeholders the Content Management System (CMS) on the website is the only relevant place to search for latest versions of documents.

All QM documents, forms and templates are published in the CMS without cuts. No restrictions or registration requirements differentiate between stakeholders. Everyone is welcome to deposit suggestions for improvement at Bau EPD GmbH, the programme supports open-source strategies.

For each single EPD project the latest documents can be downloaded from the CMS. Print versions must be compared (version, date...). When submitting an EPD document for verification the latest version of guidelines should be considered.

During the process of creation or revision of existing PCR or QM documents intermediate versions can be distributed per E-mail, those are not published on the website. Such versions must be numbered in clear and chronological ways. Changes and comments must be submitted in track change mode.

Structure and content of the MS-HB, applicable documents, forms and templates as well as explaining material is understood to be used among experts ("business2business"). The content and format templates for EPD documents to be published can also be used to communicate with consumers ("business2consumer").

All documents are provided in the latest Microsoft office formats and as pdf formats.

##### Development, approval and control of QM documents:

The development and adaptation on documents can be carried out by all function holders within the programme. For product specific PCR documents the Product Group Panels are responsible (see chapter 4.3). All documents created or adapted in this way must be presented to the head of quality management at least, in case of LCA-relevant questions the PCR Panel must be consulted. Deadlines for comments of created/adapted documents must be communicated in a written way by the creators. Non-reacting is considered as consent.

Documents for recurring process flows of the programme operation must be integrated into the numbering system of the applicable documents (M-docs). An overview of existing M-docs can be found in MS-HB chapter 10 as well as on the website (General PCR documents).

The approval of documents must be carried out as per *BAU EPD M-DOCUMENT 32-Control of documents and records*.

The approval of all documents mentioned above can only be communicated in written form (E-Mail to all creators and users of the documents in question).

After approval by the head of the EPD Programme, the documents are published on the website.

Procedure for communicating and transmitting updates to the documents or rules and regulations of Bau EPD GmbH:  
As soon as new documents are published, the members of the PKR committee (and therefore all verifiers and authorised LCA experts), the members of the advisory board and interested parties are informed by email that there are new rules and the effective date from which they are to be applied.

The mailings are documented in the records.

#### Training and education concerning use of QM documents and requirements of the QMS

The quality managers are responsible for training and education of new employees or applicants fulfilling functions of registered LCA-practitioners or verifiers. In practice new personnel must read the documents and give feedback. The execution of the rules is assessed within the first EPD project.

#### **Applicable documents:**

*BAU EPD M-DOCUMENT 28-Matrix of powers and competences*

*BAU-EPD-M-DOCUMENT-29-File index data saving*

*BAU EPD M-DOCUMENT 32-Control of documents and records*

*BAU-EPD-M-DOCUMENT-33-Overview valid QM-Documents-documentation of track changes.*

#### **4.4.3 Control of records**

Records are filled resp. project specific adapted M-documents, as well as in draft versions or notes of intermediary results and end versions. The rules for records can also apply on additional notes.

Records of the programme operation are saved following M-doc 29 on the server and kept confidential. The identification of electronic data files requires an indication of date and/or version in the file name to be stored systematically. Initials of the persons working on records can facilitate the use and control of records.

Records of QM documents are saved by the head of the conformity assessment body in the digital storage system only. The rules for distribution of such documents can be found in the process flows of the matter in question.

The verification process runs via a secure cloud solution (see also 4.4.12 Data backup). After the documents have been released by the EPD declaration holder/their life cycle assessors, a secure upload folder is set up. The clients/ life cycle assessors and verifiers receive a link to this folder by e-mail and a password by SMS. After completion of the project (= approval by verifier and renewed approval by client/declaration holder), the folder is changed from "read/write/modify" permissions to "read only" so that no unintentional changes can be made at a later date.

Records concerning EPD projects must be kept by verifiers as well as the programme operator at minimum for 10 years. This contains the submitted version of the EPD document, the corresponding project report, inventory analysis and M-doc 8 as well as all verification reports and enclosures. The EPD document and M-doc 8 must be published on the website and/or databases. The other project records must be kept confidential.

External auditors of ECO Platform or Accreditation Austria can have insight at any point in time following strict non-disclosure agreements.

Records of mailings for the purpose of communicating new rules and requirements or new documents are also kept in M document 32.

#### **Applicable documents:**

*BAU-EPD-M-DOCUMENT-29-File index data saving*

## *BAU EPD M-DOCUMENT 32-Control of documents and records*

### **4.4.4 Responsiveness to complaints and appeals, tasks of the arbitration body**

In case of dispute (doubt of correctness of EPD results, of one or more indicators in one or several life cycle modules) an arbitration panel must be gathered. Participants must be members of the PCR panel, TAC and management direction as well as representatives from the disputing parties. The members of the arbitration body must be nominated in a balanced way to represent all interested parties. No single interest must be dominant (internal and external personnel of the Programme Operator are considered to show single interest and should not be the majority.) The members of the arbitration body must represent all interested parties and shall be neutral and unbiased at the same time. The programme operator must provide access to all information the arbitration body may need to fulfil its task.

General:

The PCR review panel will be entitled to deal with appeals concerning EPD results, if need an arbitration panel will be established.

The Technical Advisory Board will be entitled to deal with complaints.

The decision, which panel to entitle lies with the head of the conformity assessment body.

The process management concerning complaints and appeals can be found in M-Document 35 – management of complaints and appeals.

If the management direction of the Programme Operator does not follow the consulting of this arbitration mechanism, the arbitration body is entitled to take independent measures (such as information of authorities, accredited bodies, or any other representatives of interest stakeholders). When taking such action, the requirements of confidentiality of the EPD client and programme must be taken into account.

#### ***Applicable documents:***

*BAU EPD M-Document 35 – management of complains and appeals*

### **4.4.5 Detection of errors and corrective actions**

In case of internal complaints or detection of an internal error (internal audits, verification processes) resp. when receiving a complaint/error notice from an external party (LCA-experts, consultants from the EPD user scene, data base providers...) this is communicated in most cases to the LCA-practitioner team contracted by the client or management director of Bau EPD GmbH. In rare cases, verifiers are contacted at first hand. The managing director must document the complaints/non-conformities and inform all necessary function holders (QM, C-PCR, C-TAC).

Non-conformities within the programme are discussed and documented within the project teams in question and the quality manager or during a PCR panel meeting, TAC meeting or in rare cases meetings of the company owners. The quality management is always part of clarification processes.

Error notices and the necessary suggestions and decisions concerning improvement are communicated without formal requirements per E-Mail distribution.

At the same time errors shall be documented as “non-conformity-report”. For that *BAU EPD M-Document 30 management of action and measures* can be used. The non-conformity report serves as a basis for evaluation of effectiveness of measures as well as catalogue of corrective actions. QM and C-PCR can document records separately, the comparison can be done in internal audits. C-PCR can use, if relevant, M-Documents 19 or 19a or extractions from there.

Depending on pressure corrective actions are taken immediately after realisation of non-conformities (documents are withdrawn or released at a later point in time, information is spread internally and externally) or discussed in a PCR panel

meeting, communicated to the employees of the participants and dealt with in the MS-HB if relevant. The complaining party is informed. EPD documents with demonstrably incorrect content/results are withdrawn and/or published in corrected form immediately after the facts have been established. Other documents requiring amendment are either withdrawn or republished immediately or with the next planned review; information on this is publicised internally and externally. When evaluating corrective measures the management must decide if similar topics must be handled (i.e. rules for all/several product categories to be altered).

Note: most questions/complaints arise due to a lack of comparability of LCA-results and/or lack of transparency within a representative market region or over time. The detection of non-conformities is sometimes limited to a transparent way of representing interpretations and assumptions, whereas sometimes more than one presentation can or must be considered as compliant. The best communication possible about such facts and complex facts must be a part of corrective actions and must be seen as a floating bridge to preventive actions.

In case of follow-up-projects the concerned function holders must look at execution of corrective actions (i.e. use of new templates and checklists).

In the yearly management review the head of the conformity assessment body must check if the measures set are effective. It is noted that sometimes similar situations/projects are carried out only after several years and the topic can only be evaluated after that...

#### **Applicable documents:**

*BAU EPD M-Document 30 management of action and measures*

#### **4.4.6 Preventive actions**

The procedures for preventive actions, if needed, shall define requirements for the following:

- a) identifying potential nonconformities and their causes;
- b) evaluating the need for action to prevent the occurrence of nonconformities;
- c) determining and implementing the action needed;
- d) recording the results of actions taken;
- e) reviewing the effectiveness of the preventive actions taken.

The documentation of these steps can be found in M-Dok 30 Management of actions and measures.

Preventive actions taken shall be appropriate to the probable impact of the potential problems.

##### **1. Internal sphere in existing programme**

With that the prevention of recurring error structures or the occurring of similar error structures is meant. The procedures under 4.4.5 can be equally applied in most cases.

##### **2. External sphere (international market, changes in framework conditions)**

Here non-conformities can occur that do not manifest themselves as non-compliance within the existing programme due to violation of rules and guideline but can result from pressingly new requirements coming from external stakeholders (law makers on national or international level, market pressure, EPD user scenarios on which the programme operator has only partly a chance to influence. At this point, detailed procedures are less important, the focus should rather be laid on best observation and networking within the scene.

As preventive actions the assurance of enough resources for function holders entitled to work within, support and contribute to national and international groups of experts/decision makers (Standardisation panels, research work, information and exchange of knowledge with law making institutions).

Visions and planned actions going with future perspectives must be documented in internal audits and management reviews.

***Applicable documents:***

*BAU EPD M-Document 30 management of action and measures*



#### 4.4.7 Management of actions and measures

The management of actions and measures contains all measures and an evaluation of those measures resulting from:

- Internal audits
- External audits
- Management-Reviews
- Corrective actions
- Preventive actions
- Etc.

This must be documented in a table in *BAU EPD M-Document 30 management of action and measures*

#### **Applicable documents:**

*BAU EPD M-Document 30 management of action and measures*

#### 4.4.8 Impartiality

##### 4.4.8.1 *Obligation of the top management to impartiality*

The top management and all employees are obliged to safeguarding impartiality in all certification work-flows of products. The top management understands the importance of impartiality while carrying out certification actions. The conformity assessment body handles all occurring conflicts of interest professionally to safeguard objectiveness within the tasks of certification. The conformity assessment body obliges the personnel to show all conflicts of interest openly to avoid influence on impartiality, independence or objectiveness, before the certification process is started. The conformity assessment body does not carry out any verification action where objectiveness or independence is threatened by any kind of connection between the involved parties.

##### 4.4.8.2 *Mechanism for safeguarding impartiality (MI)*

In the Technical Advisory Committee a mechanism for assessment and safeguarding impartiality (MI) is implemented. It deals with general complaints of clients and other stakeholders and checks on a yearly basis whether the rules and PCR-documents created and used by Bau EPD GmbH do not discriminate against any branches or clients systematically. The casting of the MI is regulated in *BAU EPD M-DOCUMENT 24-Internal regulations TAC*. M-Document 23 shows the list of members that have voting rights in the MI. Hints from other external sources concerning impartiality must be communicated to the top management by all function holders.

Tasks of the TAC as per ISO 17065:

The TAC acts as mechanism for safeguarding its impartiality. The mechanism shall provide input on the following:

- a) the policies and principles relating to the impartiality of its certification activities;
- b) any tendency on the part of a certification body to allow commercial or other considerations to prevent the consistent impartial provision of certification activities;
- c) matters affecting impartiality and confidence in certification, including openness.

**Applicable documents:**

*BAU EPD M-Document 23-Members TAC*

*BAU EPD M-Document 24-Internal regulations TAC*

*BAU EPD M-Document 25-contract cooperation TAC*

#### 4.4.8.3 Risk analysis for handling impartiality

The scenarios for identification of risks to impartiality are evaluated based on ISO 17065 annex 2, this can be done and documented in the minutes of a TAC meeting (those are held at least once a year) and/or in the annual management review carried out by the top management.

For individual EPD projects new and specific contracts are signed with the teams of verifiers incorporating rules and commitments to safeguard impartiality.

Continuous surveillance of impartiality is granted with that.

Bau EPD GmbH principally only gives first information about EPD topics but no detailed consulting if and how EPD clients can improve their result. Clients are advised to consult LCA practitioners and can have a list of approved LCA experts contributing to the work of the PCR Advisory panel from *BAU EPD M-DOCUMENT 6: list-of-registered-LCA-practitioners in PCR Advisory Panel*

A detailed description of different tasks and interfaces are given in *BAU EPD M-DOCUMENT 7: application form for registered LCA practitioners PCR Panel resp. BAU EPD-M-DOCUMENT-16-application form for independent third-party verifiers*

Bau EPD GmbH does not outsource any work to subcontractors.

**Applicable documents:**

*BAU EPD M-DOCUMENT 6: list-of-registered-LCA-practitioners in PCR Advisory Panel*

*BAU EPD M-DOCUMENT 7: application form for registered LCA practitioners in PCR Panel*

*BAU EPD-M-DOCUMENT 16-application form for independent third-party verifiers*

*BAU EPD M-DOCUMENT 24-Internal regulations TAC*

#### 4.4.9 Non-discriminatory conditions

Bau EPD GmbH is committed to create and follow all policies, rules and procedures and administration in a non-discriminatory way to exclude discrimination of individual applicants or clients.

Bau EPD GmbH does not exclude any clients from the possibility and service to get an EPD and extends its programme at need from construction materials to furniture, construction machinery, energy supply, mobility or any other products. The competences are extended continuously. For products that cannot reference to any standards individual PCR documents (SOP, Standard Operation Procedures) are created.

The process of conformity assessment is not depending upon the size of the client or membership in any association or group, nor is the number of issued EPD data sets a conditional.

The decline to accept an application is possible when documented illegal, criminal or dishonest or unethical business activities exist.

Any cases of rejection are passed to the TAC for evaluation and assessment of justifications.

The access to the process of conformity assessment is regulated for all clients in the same way in *BAU EPD M-DOCUMENT 27-Application for EPD verification*.

Further, the fee regulations apply to all clients in the same way. The fee regulation is a tiered system to offer the possibility to get EPDs also to the smallest of institutions. Within a fee classification level all institutions (clients) are treated the same way.

The access to the service of Bau EPD GmbH is not linked to the number of already declared and published EPDs. EPD publication is not limited to a certain number of declaration holders. Members of associations can issue group-EPDs (branch-EPD) as well as individual EPDs at the very same time, the conception of average data may be different.

Generally, each institution can become a member of the TAC. Bau EPD GmbH cares for a balanced composition of members.

Possibilities to work within the PCR review panel are broadly given but depending on individual expertise. The application procedure and criteria are the same for all applicants.

The participation in product group panels is possible for every person showing specific expertise. The focus of this expertise may lay on other, especially competitive branches and product groups.

Interested parties can comment on all PCR, also the handbook on hand and ask for a justified revision. All comments to the guidelines and standards of Bau EPD GmbH must be treated the same.

#### **Applicable documents:**

*BAU EPD M-DOCUMENT 27-Application for EPD verification*

*Fee regulation*

#### **4.4.10 Periodical internal and external audits and management reviews**

##### **Internal Audits**

Internal audits are executed occasion-related, at least once a year. The whole operational programme is checked by an external auditor. *BAU EPD-M-DOCUMENT-21-template internal audits* must be applied. The audit scope considers the content of M-DOK 21, one audit day per year - in an ideal case preceding the external audits of Accreditation Austria or the yearly meeting of company owners - shall be carried out. The matter is not changing at great speed; therefore this is only a recommendation. The head of the conformity assessment body and a member of the quality management must be audited as a minimum.

The auditor of internal audits must fulfil the requirements of competence listed in M-DOK 01.

##### **Auditing of competence requirements of verifiers:**

Verifiers basically check each other, as they independently write their non-conformity lists and reconcile/summarise them (see M-DOKS 19 and 19a). The management of the conformity assessment body assesses these records on a random basis as part of the internal audit. The teams of verifiers constantly alternate in teams of two. Target: each verifier should be audited once within an accreditation period.

In addition, the LKBS randomly checks the reports according to M-DOKS 19 and 19a and evaluates the competences according to M-DOK 01 and keeps records for this purpose based on M-DOK 05.

## External Audits

Externals audits are carried out by teams of auditors of ECO Platform in sensible intervals (in case of fundamental changes of referenced standards or ECO Platform Guidelines).

In addition, external audits are carried out by Accreditation Austria.

The results of such audits are considered and evaluated in the yearly management review. The review is done by the head of the conformity assessment body following *BAU EPD-M-DOCUMENT-22-template management reviews*.

In preparation to the management reviews inputs from members of the PCR review panel, the TAC or other relevant stakeholders must be considered.

### **Applicable documents:**

*BAU EPD-M-DOCUMENT-21-template internal audits*

*BAU EPD-M-DOCUMENT-22-template management reviews*

#### **4.4.11 Surveillance of competence of the Head of the Conformity Assessment Body (HCB)**

*The competence of the management of the HCB shall be reviewed at least once within 5 years. This can be done within the framework of the internal audit by external auditing personnel. Records of this shall be kept in accordance with M-Document 05.*

#### **4.4.12 Data backup**

Data is stored in an internet cloud solution on Austrian servers (Own-Cloud of the company Internex, ISO-certified operation).

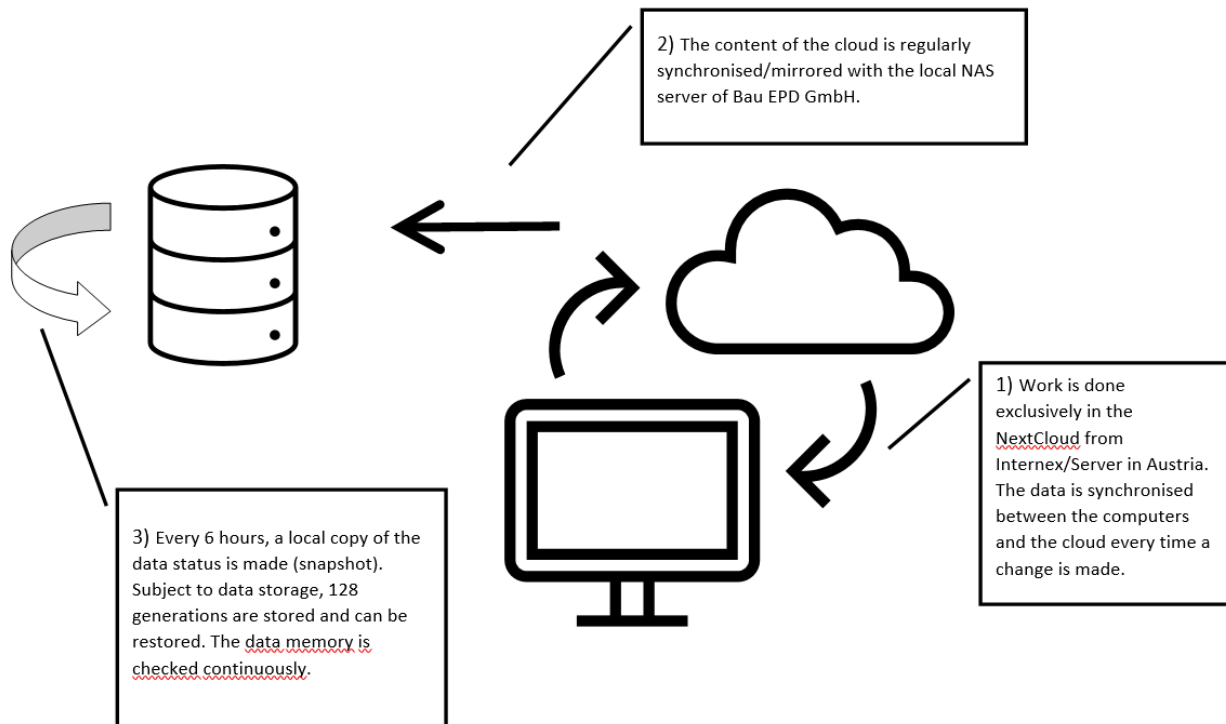
Data is also stored every 6 hours on a NAS server and mirrored, stored and backed up only to encrypted PCs/laptops/hard drives (Synology Drive Client). Hard drives are stored in fireproof safes or lockable rooms. Access to data from the outside is given to authorised personnel via secure channels.

Bau EPD GmbH has its own cloud solution (transfer folder) for handling verification projects (transfer files in Own Cloud System). Persons who have not signed confidentiality declarations cannot access/view the data. Reducing the transmission of data via e-mail to a necessary minimum is an overriding goal. E-mails are always handled in accordance with the DSGVO and secured by the host providers in accordance with legal requirements.

Der Provider ist nach ISO 27001 Information technology – Security techniques – Information security management systems – Requirements von einer akkreditierten Stelle zertifiziert.

## OVERVIEW DATA BACKUP STRUCTURE BAU EPD GMBH:

Data backup structure Bau EPD GmbH



## 5 GENERAL PRODUCT CATEGORY RULES AND LCA CALCULATION RULES

### 5.1 Scope of application of the PCR and LCA rules

Chapter 5 defines rules for LCA calculation that go beyond EN 15804 and regulations in relation to it.

### 5.2 Categorisation of products and EPDs

Declaration of classes of construction products:

The „General Rules for LCA“ hold both for collecting data for specific processes and the collection of average data, e.g. when the functional unit is used for a group of similar products from different manufacturers or the same product from different production sites.

It is also possible to declare a reference product describing a specific (typical) product.

In accordance with EN 15941, Table 2, the Environmental Product Declaration can be categorised into different types in relation to its area of application. The declaration type must be specified in the project report and in the EPD.

In case of **average** products, the following information must be given:

- The type of average (horizontal, vertical)
- A description of similar products of different producers, different production sites or the range of product families/classes of one producer and one site
- The range of variation of the indicator results in the evaluation of the project report or, at least, a qualitative evaluation in the EPD, see also specifications in EN 15941.

Generally, the representativity of a reference product resp. the declared unit must be described and justified.

Listing the plants or production sites is mandatory in the project report and in the EPD.

### 5.3 Functional unit, declared unit and reference unit

Functional and declared unit represent reference quantities for the material flows of a construction product. Guidelines for the determination of the declared or functional unit are given in the Product Category Rules. These are based on clause 6.3.2 (functional Einheit) resp. clause 6.3.3 (declared unit) of EN 15804+A2.

In the project report the physical unit (reference unit) and the produced products, for which the life cycle inventory data in the production stage have been surveyed, must be indicated in addition<sup>1</sup>.

The sampled product must be described accurately according to its technical and functional features (field of application, range of bulk density). The relevant technical and functional features are defined in the related product specific PCR documents.

It is not accepted to declare proportional shares of a declared/functional unit, e.g. 0.1 m<sup>3</sup> insulation materials. However, it is possible to declare commonly used units (e.g. 1 m<sup>2</sup> of a defined thickness and density of an insulation material). In that case a conversion into the declared/functional unit designed in the PCR Part B document must be possible.

The chosen declared/functional unit is to be stated in the project report. In any case the mass relation to the declared unit is to declare.

### 5.4 System boundaries

#### 5.4.1 General

The setting of the system boundaries follows two principles (see EN 15804+A2, 6.3.5.1):

- The “modularity principle”: Where processes influence the product’s environmental performance during its life cycle, they shall be assigned to the module of the life cycle where they occur; all environmental aspects and impacts are declared in the life cycle stage where they appear;
- The “polluter pays principle”: Processes of waste processing shall be assigned to the product system that generates the waste until the end-of-waste state is reached („complete waste treatment”).

Principally the system boundaries shall be set in a way that all relevant inputs and outputs can be considered. The time-period over which inputs to and outputs from the system shall be accounted for is 100 years from the year for which the data set is deemed representative (see EN 15804+A2 clause 6.3.8.2). An exception is made for solid materials waste disposal, if the products contain biogenic carbon that is declared as biogenic global warming potential (EN 15804+A2, clause 6.3.5.5)

#### 5.4.2 Life cycle stages

The life cycle of the evaluated product system is to be subdivided according to the modules and life stages in figure 1 in EN 15804. All construction products- and materials must declare modules A1-A3, modules C1-C4 and module D.

<sup>1</sup> Life cycle inventory data is often surveyed in a mass-related way and recalculated into the declared unit -e.g. volume – at a later point.



The LCA based information in an EPD may cover:

- Cradle to gate with modules C1-C4 and module D (A1-A3 + C + D);
- Cradle to gate with options, Module A1-A3, C1-C4 and D (A1-A3 + C+ D and additional modules chosen from A4 to B7);
- Cradle to grave and module D (A + B + C + D)

Exceptions from these rules are regulated in EN 15804+A2, clause 5.2.

CONSTRUCTION WORKS ASSESMENT INFORMATION																
CONSTRUCTION WORKS LIFE CYCLE INFORMATION															SUPPLEMENTARY INFORMATION BEYOND CONSTRUCTION WORKS LIFE CYCLE	
A1 - A3 PRODUCT STAGE			A4 - A5 CONSTRUCTION PROCESS STAGE		B1 - B7 USE STAGE							C1 - C4 END OF LIFE STAGE				D BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Raw material supply	Transport	Manufacturing	Transport	Construction - Installation process	Use	Maintenance	Repair	Replacement <sup>1</sup>	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Entsorgung	Reuse, recovery, recycling, potential
scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario
Cradle to gate with modules C1-C4 and module D	Mand.	Mand.	Mand.									Mand.	Mand.	Mand.	Mand.	Mandatory
Cradle to gate with options, modules C1-C4 and module D	Mand.	Mand.	Mand.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Mand.	Mand.	Mand.	Mand.	Mandatory
Cradle to grave and module D	Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mandatory
Cradle to gate <sup>2</sup>	Mand.	Mand.	Mand.													
Cradle to gate with options <sup>2</sup>	Mand.	Mand.	Mand.	Opt.	Opt.											

#### Key

- 1 replacement of components, parts or systems      2 only possible if the conditions to exclude the declaration of modules C1-C4 and module D are met

**Figure 1: stages of the life cycle of a construction product (EN 15804, Figure 1)**

### 5.4.3 Product Stage

#### 5.4.3.1 Included processes

The product stage includes the modules A1 (raw material extraction), A2 (transport to the manufacturer) and A3 (manufacturing). The included processes can be taken from EN 15804+A2, clause 6.2.2 and 6.3.5.2.

Module A1, A2 and A3 may be declared as one aggregated module A1-3.

#### 5.4.3.2 Interpretation

##### Processes:

- a) The product stage is completed with the finalization of the product ready for delivery (including all packages and expenditures for storage on site).
- b) The system boundary is set to include all relevant input and output processes. Therefore, all upstream processes shall be traced back without consideration of geographical boundaries.
- c) In the case of input of secondary materials or energy recovered from secondary fuels, the system boundary between the system under study and the previous system (providing the secondary materials) is set where outputs of the previous system, e.g. materials, products, building elements or energy, reach the end-of-waste state (EN 15804+A2, clause 6.3.5.2).
- d) Loads from the upstream product system shall be exclusively transmitted into co-products
- e) Operating supplies (hydraulic oils, cleaning substances etc.) are only calculated, if stated in the cut-off criteria or in the PCR-B defined
- f) Package materials are balanced together with all upstream processes. The deposit is carried out according to the real channel of deposit resp. ARA statistics (Altstoff Recycling Austria AG – leading specialist for recycling of package materials in Austria)
- g) Transport of goods within the production site or between production sites shall be declared for all upstream processes.
- h) Transport of persons does not need to be considered
- i) The energy demand for conditioning office buildings does not need to be considered. If included in the manufacturer's data without a chance to subtract it out, the data can be used without adaptation if estimated that the effect on the LCA is minimal (see cut-off criteria)
- j) Emissions into air must be declared either as after filter figures or, if no filters are implemented – as direct emissions (e.g. dust particles). The remaining filter dust is treated as waste.
- k) Industrial waste heat does not need to be declared. It is balanced indirectly in the energy demand.
- l) Production waste that is lead back into the production process replaces primary materials and therefore it must be included within the system boundaries. („closed-loop“). It does not count as secondary material.
- m) Streams that leave the product stage (A1-A3) at the boundary of complete waste treatment must be considered as co-products. Loads and benefits that are allocated to co-products must not be declared in module D. If such an allocation is not possible in a clear way, other methods can be chosen but must be explained. However, for the purpose of a general rule, loads and benefits from A1-A3 are not taken into account in D.
- n) Co-product-allocation: see clause Allocation rules
- o) Heat and electricity from thermal use of production waste in modules A1-A3 can be calculated as closed loop, but only up to the amount of MJ that respectively is needed as energy quality for production (assumption: whole product stage, A1-A3, considered as one module). For energy gains that go beyond this closed loop a co-allocation must be executed.
- p) For infrastructure and production facilities (e.g. machines, wear parts, buildings, etc.), the cut-off rules must be observed.

#### **5.4.4 Construction process stage**

##### *5.4.4.1 Included processes*

The construction process stage includes module A4 (Transportation from the production gate to the construction site) and A5 (Installation of the product into the building). The processes included can be taken from EN 15804, clauses 6.2.3, 6.3.5.3 and 7.3.2.2)

##### *5.4.4.2 Interpretation*

- The „transport to the building site“ includes an estimation of all transports of goods necessary from the „end of the product stage“ to the building site, including any transports to distributors, stores etc.
- Transport of persons does not need to be considered.
- The scenarios and fundamental principles of the calculation must be documented (see EN 15804, clause 7.3.2.1 and 7.3.2.2).

#### **5.4.5 Use stage, related to the building fabric**

##### *5.4.5.1 Included processes*

The use stage related to the building fabric includes modules B1 (use), B2 (maintenance), B3 (repair), B4 (replacement), B5 (refurbishment). The processes to be considered are described in EN 15804, clause 6.2.4 and 6.3.5.4.2.

##### *5.4.5.2 Interpretation*

- The life stage B1 includes according to EN 15804 also emissions into air, water and soil. Emissions, that are not part of the LCA, are regulated in the document „Guidelines for emissions into indoor air and environment“.
- B1: In the Product Category Rules scenarios to determine „all emissions into the environment“ must be regulated (see „Guidelines for emissions into indoor air and environment“).
- Module B1 is to be modelled exclusively with reference to product-inherent properties.
- B2: The needed water and energy use must be considered like in any other module.

#### **5.4.6 Use stage related to the operation of the building**

##### *5.4.6.1 Included processes*

The use stage related to the operation of the building includes modules B6 (use of energy for operating of the (product in the) building) and B7 (use of water operating of the (product in the) building).

Further details can be found in EN 15804, clause 6.3.5.4.2.

#### 5.4.6.2 Interpretation

Exclusively energy and water demand that goes hand in hand with the direct use of the construction material evaluated can be considered (e.g. the heat energy saved by implementing insulation material is NOT to be declared.) Emissions, that come out due to operating a product (e.g. emissions of nitrous gases) must be allocated to this use stage module.

**Note:**

The difference between the two use stage modules can be shown by taking the example of a „bio mass boiler plant“: Use stage related to the building fabric includes e.g. use of lubricants, repair work, VOC-emissions from the coating of the boiler.

The use stage related to the operation of the building includes electricity demand and biomass demand for operating the boiler and nitrous gas emissions as a consequence of operating the boiler.

If the indicator figures are declared in the EPD, the scenario for the use of energy in the building must be described.

## 5.4.7 End-of-life stage

### 5.4.7.1 Included processes

The end-of-life stage includes modules C1 (deconstruction, demolition), C2 (Transport), C3 (waste processing), C4 (disposal). The processes to be considered can be found in EN 15804+A2, clauses 6.2.6 and 6.3.5.5.

## 5.4.8 Benefits and loads beyond the product system boundary

### 5.4.8.1 Included processes

Module D includes reuse, recovery and/or recycling potentials and is described in EN 15804, clauses 6.2.7 and 6.3.5.6.

### 5.4.8.2 Interpretation

In case of products made only from secondary material:

In the processing of recycling material to a product it can occur that more recycling masses are used than product masses come out. In this case the loads of the difference must be declared as additional information in the project report (the declaration in the EPD document is voluntary). The environmental loads for this additional demand must be declared on input side as positive values (loads), calculating the loads for the production of primary material and can be shown in module D in a separate table.

## 5.5 Inventory analysis

### 5.5.1 Selection of data for product stage

Data for product stage must be evaluated by the LCA practitioner on the production site. This rule includes all kind of data that can be influenced by the manufacturer.

The energy and material flows should be- if possible and sensible - based on 12 months averaged data sets. Shorter data collection periods must be justified and representative. Continuous measurements, regulations for dosage or metering, energy monitoring, purchase lists or waste lists can be taken as a data basis.

Outputs, e.g. emissions, that do not undergo any continuous measurement, can be collected via representative single measurements. These measurements shall be executed in the same reference year as the collected energy and material flow data and shall be executed with representative amounts of products. If no measurements exist and it is allowable by scientific and technical view, emissions can be estimated by using stoichiometric equations.

The evaluated 12 months shall correspond with the last completely balanced business year.

Accidents and extraordinary incidents do not have to be considered.

The procedure of data collection must be described in the project report.

If the manufacturer wants to consider future production conditions already when preparing the EPD, the following rules are mandatory:

- a) Processes that do not influence the process of production (e.g. adaptation of delivery) can be integrated into the declaration. The declaration must not be issued before the exact date of adaptation of the process.

- b) For processes that do influence the process of production (e.g. a new kiln), the data collection must be documented for a representative period of time for the new process. This does not need to be a whole year's period, 3-4 months can be sufficient.

## 5.5.2 Generic Data

### 5.5.2.1 Definition of terms

Generic data is information that is not location- or company-specific. It can represent a specific process or be average data.

### 5.5.2.2 Use of generic data

EN 15804 allows the use of generic data for processes that cannot be influenced by the manufacturer (EN 15804+A2, clause 6.3.7).

The general rule is, that specific data from specific production processes or average data deduced from specific processes must be given priority to when preparing the EPD.

If an upstream product induces more than 10 % impact (e.g. cement in concrete), specific data must be collected. If this is impossible, e.g. due to lack of cooperation of the manufacturer of the upstream product, reasons have to be explained in the project report. For generic data either an excellent representativity for the specific product or a worst-case-scenario for generic data must be calculated (see Annex E in EN 15804+A2).

### 5.5.2.3 Requirements for the data quality of generic data

Generic data sets used for calculations must be valid for the current year and represent a reference year within the last 10 years (EN 15804+A2, point 6.3.8.2).

The data quality of the relevant generic data used in the EPD shall be assessed according to one of the two systems described in Annex E of EN 15804+A2 (EN 15804+A2, point 6.3.8.3).

One of the main conditions for preparing consistent EPD is the use of consistent data for general processes like energy systems, transport systems, basis material, forestry, disposal and package materials.

Until pre-verified data sets are available, an EPD must be based on a consistent data base. That means only ONE database can be chosen. Mixing data sets from different data bases shall be avoided. Missing or old data sets can be added from other sources if justified (see chapter 8 "requirements on approved data bases")

### 5.5.2.4 Documentation of the selection and quality of generic data in the EPD

The used data base and version must be marked prominently on the EPD (e.g. „EPD on basis of ecoinvent data“). In the middle resp. long-term the consistent use of pre-verified data is to achieve.

#### 5.5.2.5 Documentation of the selection and quality of generic data in the project report

The documentation of data quality in the project report and in the EPD of generic data must be carried out in accordance with PKR-B.

Applicable documents:

Product-specific PKR-B documents (latest versions can currently be downloaded from the website [www.bau-epd.at](http://www.bau-epd.at))

BAU EPD-M-DOCUMENT-13A2-Project report content and format template-EN15804+A2

Further information on checking and describing data quality as well as specifications for data selection and description of its representativeness can be found in EN 15804 and EN 15941.

#### 5.5.3 Cut-off rules and exclusions

Cut-off criteria and rules for any disregard (exclusion) of inputs and outputs are found in EN 15804, clause 6.3.6.

EN 15804+A2, clause 6.3.6:

“The following procedure shall be followed for the exclusion of inputs and outputs:

- All inputs and outputs to a (unit) process shall be included in the calculation, for which data are available. Data gaps may be filled by conservative assumptions with average or generic data. Any assumptions for such choices shall be documented;
- In case of insufficient input data or data gaps for a unit process, the cut-off criteria shall be 1 % of renewable and non-renewable primary energy usage and 1 % of the total mass input of that unit process. The total of neglected input flows per module, e.g. per module A1-A3, A4-A5, B1-B5, B6-B7, C1-C4 and module D (see Figure 1) shall be a maximum of 5 % of energy usage and mass. Conservative assumptions in combination with plausibility considerations and expert judgement can be used to demonstrate compliance with these criteria;
- Particular care should be taken to include material and energy flows known to have the potential to cause significant emissions into air and water or soil related to the environmental indicators of this standard. Conservative assumptions in combination with plausibility considerations and expert judgement can be used to demonstrate compliance with these criteria.”

Specification:

For each (unit-) process cut-off criteria of 5 % of the total amount of the indicator in question shall be met.

#### 5.5.4 Data quality of specific data

The requirements for data quality can be found in EN 15804, point 6.3.8.2. The system for assessing data quality is described in EN 15804, point 6.3.8.3.

The data quality of the relevant life cycle inventory data used in the EPD shall be assessed according to one of the two systems described in Annex E of EN 15804+A2 (EN 15804+A2, point 6.3.8.3).

For the relevant life cycle inventory data, the data quality must be assessed according to one of the two systems described in Annex E of EN 15804+A2. The assessment results must be documented in the project report (EN 15804+A2, 6.3.8.3).

Detailed information on data selection, data description and data quality criteria can be found in EN 15941.

The documentation of data quality in the project report and in the EPD of generic data must be carried out in accordance with product specific PCR-B parts.

Requirements for assessing and declaring the quality of generic data can be found in 5.5.2 Generic data.

Applicable documents:

Product-specific PCR-B documents (latest versions can currently be downloaded from the website [www.bau-epd.at](http://www.bau-epd.at))

BAU EPD-M-DOCUMENT-13A2-Project report content and format template-EN15804+A2

#### 5.5.5 Scenarios

See EN 15804+A2, clause 6.3.9 development of scenarios on product level.

Scenarios concerning End of Life: It is possible to describe several scenarios for modules C and D in the same EPD document. Each scenario must be calculated and described separately.

Example: For waste wood two different end-of-life scenarios can be calculated:

Scenario 1: “Recycling” and Scenario 2 “energetic utilization” (whereas scenario 1 also includes energetic utilization of waste wood materials that cannot be recycled). Each Scenario must be described separately. In addition mixed scenarios (i.e. scenario 3: “80% recycling (scenario 1) and 20% energetic utilization (scenario 2)” )can be described.

For the modelling of the disposal phase, the ‘Supplement to the ÖKOBAUDAT principles: Modelling of the disposal phase (Module C and D)’ M-Document 37 must be observed

Applicable Document:

BAU EPD-M-DOCUMENT 37: Modelling of the disposal phase (Module C and D)

#### 5.5.6 Rules for EPD as average performance

Average EPD describe the case of a functional unit defined for a group of similar products of different manufacturers or the same product from one manufacturer but from different production sites (“Branch-EPD”, “Group EPD” or “EPD from Associations”). The data of an Average EPD must be representative for the average of the declared products.

Average EPD must include the following information in the project report as well as on the last page of the EPD document:

- a) The market related to the Average EPD;



- b) A list of all production sites and products that were evaluated;
- c) A note if the list of evaluated sites is incomplete, e.g. if individual sites or countries of a manufacturer were not evaluated;
- d) It is also to explain, whether the EPD is valid resp. representative ONLY for the sites and locations that provided data OR if it is stated to be representative for other market or branch segments. A detailed explanation must be given (i.e. used technologies, market situation...). If further representativity is given, this shall be described in a separate clause below the list of sites participating in the study.

Further tips concerning required documentation in the project report and EPD document:

- a) Technical and functional features: Declaration of ranges AND average values used for calculation in the LCA (for those the approach of building the average must be explained).
- b) Composition, base materials: Declaration of ranges AND average values used for calculation in the LCA (for those the approach of building the average must be explained)
- c) Application field, use: listing of all products as a separate clause or table
- d) Information on representativity in project report: Declaration of shares of a single product with reference to overall average
- e) Variances for products (from different manufacturers and/or from different production sites) as far as indication is possible for the processes in scope, see also specifications from EN 15941 on accuracy.

The data of Average EPD should be averaged relating to the production mass. It is to declare on what product masses indicators have been calculated.

The production of „Model-EPD“ (individual EPD on the basis of generic data, like „templates“, Worst-Case-EPD) is principally possible in the focus of this EPD Programme. Worst-Case EPD on the basis of specific data are not recommended for in most constellations a representative average can be calculated with similar effort.

Note 1: All production sites calculated into average values must be indicated to the individual product group categories, as an alternative an overview can be packed into an annex (mandatory in the project report and in the EPD document). The geographical representativity must be described in the EPD document in a comprehensive way.

Note 2: Manufacturers may want to compare products on product level (e.g. with benchmarks for Type I Environmental Product Declarations, ECO labels etc.), therefore average data must be transparent. The building and documentation of averages must be traceable to single results of product lines/sites/manufacturers.

## 5.6 Allocation rules

Allocation rules can be found in EN 15804, clause 6.4.3. Some extracts and additions are given below:

### 5.6.1 Allocation of material inherent properties:

EN 15804+A2, clause 6.4.3.1: „Irrespective of the allocation approach chosen for a co-production process or for secondary flows crossing the system boundary between product systems, specific inherent properties of such coproducts or flows, for example calorific content, composition [biogenic carbon content, CaO/Ca(OH)<sub>2</sub> content, etc.], shall not be allocated but always reflect the physical flows..“

## 5.6.2 Allocation of co-products

### 5.6.2.1 General rules for allocation of co-products

See EN 15804, clause 6.4.3.2

In case that co-product allocation of foreground data is not possible, i.e.

- If co-product allocation of production waste (i.e. in case of scrap) makes a coherent calculation of the net amount impossible,
- If exported energy from thermal treatment of waste in a waste incineration plant can be no longer connected to the production process for an allocation

A closed-loop calculation cannot be carried out, with that, flows that leave the product system in A1-A3 must be declared as outputs, as common for C-modules. The benefits and loads without allocation can be declared in module D outside the system boundary as additional information (see ISO 21930-7.1.7.2.7)

- Production waste
    - Production waste that is brought back to production does not need allocation for it can be seen as closed loop. The waste substitutes primary material and is therefore included in the inventory analysis.
    - Flows leaving the system at the end-of-waste boundary of the product stage (A1-A3) shall be allocated as co-products (Loads and benefits from allocated co-products shall not be declared in module D (see EN 15804, clause 6.4.3.2).
- Production waste for which a sales revenue can be achieved must be considered as co-products. (see also EN 15804, clause 6.4.3.2 Note 3: Products and functions are the outputs and/or services provided by the process, having a positive economic value). Production waste that cannot be sold on the market must be calculated as waste, even if transferred to extern recycling or energy recovery processes. In no case benefits are given for the substitution of other energy carriers.
- Waste from one-way packages, that accumulate in production and are disposed must be treated as waste even if transferred to an extern recycling or energy recovery process.

### 5.6.2.2 Allocation procedures for processes producing co-products used in cement and concrete and other similar construction products

Until a consistent approach is in place in standardization, all ECO Platform POs are required to use economic allocation for the processes producing co-products for use in cement and concrete and other similar products, for example:

- steel production and granulated blast-furnace slag or crystallised basic oxygen furnace slag;
- coal fired electricity generation, fly ash and artificial gypsum, and other processes producing artificial gypsum;

- silicon metal and ferro-silicon alloys and silica fume and
- aluminium-oxide-containing sources arising from aluminium and alumina production.

For these co-products, economic allocation shall be used even if their contribution to the overall revenue of the process is very low (below 1%), to understand the impact, even if small, connected to these co-products.

Economic allocation should use market prices, averaged over a period in time as defined in ISO 14044 Amd2:2020 (chapter D4.3).

When assessing the impact of the high value co-products such as steel, electricity, silicon etc, economic allocation to these low value co-products used in cement and concrete can be omitted as a conservative choice. Other forms of allocation, for example, physical partitioning, system expansion or physical allocation, shall not be used to assign impacts to these low value co-products used in cement and concrete when assessing these high value co-products for use in ECO Platform EPD.

Where these co-products used in cement and concrete are used in other construction products in EPD, the same rules of allocation shall apply.

### 5.6.3 Allocation procedure of reuse, recycling and recovery

See EN 15804, clause 6.4.3.3

#### 5.6.3.1 Secondary materials and fuels:

- For allocation of secondary fuels coming from a previous product system it is to clarify if the material has reached the end-of-waste state and, with that, can be classified as “waste” or “secondary fuels”:
  - For waste, the product system generating the waste is responsible and carries the emissions linked to waste treatment.
  - The emissions resulting from use of secondary fuels are allocated to the product system that is evaluated.

In communication of LCA-results of modules A1 to A3 two values must be declared:

- The environmental impact caused by the emissions, including treatment, burning and co-burning of waste (gross figures); and
  - The environmental impact without burning of waste (net figures).
- For allocation of secondary materials the following rules of EN 6.4.3.2 must be considered: „Joint co-product allocation shall be allocated as follows:
    - Allocation shall be based on physical properties (e.g. mass, volume) when the difference in revenue from the co-products is low;
    - In all other cases allocation shall be based on economic values.“

If such an allocation is not possible, other methods may be applied but shall be justified.

- EN 15804, 6.3.5: „In principle waste processing is part of the product system under study. In the case of materials leaving the system as secondary materials or fuels, such processes as collection and transport before the end-of-waste state are, as a rule, part of the waste processing of the system under study.“

#### 5.6.3.2 Waste on building site

- Waste from the building site that is brought back into production can be considered as closed loop and does not need any allocation. In that case waste substitutes primary materials and therefore is included in the inventory analysis.
- Waste from the building site that cannot be sold on the market must be calculated as waste, even if transferred to external recycling or energy recovery processes.

#### 5.6.3.3 Product waste

EN 15804, clause 6.4.3.3: „The amount of secondary material output, which is for all practical purposes able to replace one to one the input of secondary material as closed loop is allocated to the product system under study and not to module D.“

#### 5.6.3.4 Energy recovery

In case of energy recovery of electricity the average electricity mix must be applied .

If a manufacturer can demonstrate that it has control over the energy references in modules A4-A5, B or C and D, it can proceed in accordance with EN 15941.

#### 5.6.4 Documentation

Allocations, that exceed the General Principles for LCA or Product Category Rules, must be documented.

### 5.7 Impact assessment and characterisation factors

Information on the impact categories to be applied and indicators connected with those, methods and characterisation factors are given in EN 15804+A2, annex C.

For all indicators mentioned in annex C characterisation factors from EC-JRC must be used. The characterisation factors can be downloaded on the following website:

<http://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml>

(see EN 15804+A2, clause 6.5.2).

ECO Platform rule: EPDs must use the latest version of the characterisation factors approved by the JRC for use in EPDs according to EN 15804+A2. A transition period is granted to give the LCA tools time to implement the new characterisation factors. This period is 1 year from the publication of the updated characterisation factors.

If earlier versions of characterisation factors are identical or conservative, then EPD based on earlier versions can be used. On this basis, an EPD based on JRC EF 3.0 can be used as an input to an EPD based on JRC EF 3.1. However, EF3.0 results based for the optional indicators for eco-toxicity (freshwater), human toxicity, cancer and human toxicity, non-cancer effects, cannot be justified to be identical or conservative in relation to EF 3.1, and therefore EF3.0 results for these indicators shall not be declared in an EPD based on EF 3.1 (but they may be included in the project report)<sup>2</sup>.

<sup>2</sup> The characterisation factors for, for example, GWP in EF 3.1 are identical or lower than EF 3.0, but for the toxicity indicators many are higher.

## 5.8 Indicators

### 5.8.1 Declaration of LCA indicators

The following LCA indicators are core indicators and must be content of each module declared in the EPD:

- core environmental impact indicators (EN 15804+A2, clause 7.2.3.1)
- Indicators describing resource use (EN 15804+A2, clause 7.2.4.2)
- Environmental information describing waste categories (EN 15804+A2, clause 7.2.4.3)
- Environmental information describing output flows (EN 15804+A2, clause 7.2.4.4)
- Informationen zum biogenen Kohlenstoffgehalt (EN 15804+A2, Punkt 7.2.5)

The „Additional environmental impact indicators“ as per EN 15804+A2, clause 7.2.3.2 must be calculated and included into the project report – for each declared module. In general, these indicators should be part of the EPD. If additional indicators are not declared, they shall be mentioned in the EPD, e.g. as an entry of "ND". The disclaimers to the declaration of environmental impact indicators as per Table 5 (EN 15804+A2, clause 7.2.3.3) must be mentioned in the project report as well as in the EPD document.

### 5.8.2 Specific rules for calculation of indicators

#### **Materially utilised primary energy (PERM, PENRM):**

If the solid contingent in primary energy cannot be taken from the inventory analysis, it can be calculated from the product composition. Any requirements concerning the lower heating value are defined in the product specific complementary Product Category Rules.

Note: Exported energy from landfill is, contrary to EN 15804, NOT assessed as utilization potential (In Austria the deposit of organic materials is only allowed as contamination particles).

Clarification for the calculation of potable water:

For each process the water flows are determined and described with reference to the taken volume, the water emissions and the origin (i.e. surface water, ground water, sea water).

If drinking water is taken (i.e. from public water supply), treatment and distribution of the water must be considered as upstream processes with their own individual resource consumption and emissions. According to this, water that is lead to the waste-water system must be connected to processes of waste-water treatment and distribution as downstream processes.

Other water flows, i.e. evaporated water or water that is incorporated into the product, must be stated in the inventory of the processes, so that a complete water-bill is the result.

For each process the water consumption the sum of water that is lost to the drainage area. This can be calculated easier than the sum of water that is evaporating, transpiring from biomass, incorporated into a product or transferred to another drainage area. Doing so, as mentioned above, water is not balanced, if it would have left the drainage area in a natural system before implementation of the technical system.

#### **Guidelines for modelling indicators referring to the foreground system**

MFR = Output flow (gross) from the system, refers to foreground data: MRF is typically declared in A5 and/or C3 (often e.g. metals, paper/board). In A1-A3 it is an allocation, therefore no output flow.

MER = Output energy (lower calorific value) from the system, energy from secondary fuel (according to end-of-waste status), i.e. e.g. wood chips from waste wood used in a heating system (no waste -> EEE/EET). MER is typically declared in A5 and/or C3 (e.g. shredding process); however, the combustion (incl. avoided energy production) then only takes place in module D.

RSF/NRSF = input flow (lower calorific value), secondary fuel entering the considered/downstream system refers to the foreground system. RSF/NRSF is typically declared in A3.

EEE/EET = output energy (lower heating value, net energy) from a waste incineration process, typically declared in A5, C3 and/or C4.

SM = Input flow (gross), secondary material entering the considered/downstream system, is typically declared in A1 and/or D.

## 5.9 Biogenic carbon content

In EN 15804+A2 Table 9 makes the calculation of biogenic carbon in kg C mandatory; where the mass of biogenic carbon content in the product is above 5%, the conversion factor to kg CO<sub>2</sub> equivalents shall also be given.

If the packaging contains more than 5% biogenic carbon, the uptake of this biogenic carbon, as biogenic CO<sub>2</sub>, in module A3 (or A1-A3 if aggregated) shall be balanced-out by an equal amount of emission of biogenic CO<sub>2</sub> in module A5. Then module A5 shall, also in EPDs which otherwise have an A1-A3 scope, be included for this “balancing-out reporting”. Unless module A5 is fully included, this “balancing-out reporting” for module A5 shall be included in the declared A1-A3 results; if this is done, the EPD shall describe that the A1-A3 results includes the “balancing-out reporting” of the biogenic CO<sub>2</sub> of packaging released in module A5.

If the packaging contains less than 5% biogenic carbon, this “balancing-out” of biogenic carbon may be done directly in module A3 (or A1-A3 if aggregated) instead.

## 5.10 Other rules for modelling for the application of the data in Austria

### 5.10.1 "Biomass balance approach" (\*)

The application of the "biomass balance approach" (\*) is not permitted.

(\*) Basic idea of this approach: The input of renewable resources is allocated to selected products (“green product lines”) independent of the physical contexts.

### 5.10.2 "Recycled content re-allocation"

The application of the "recycled content re-allocation" concept (\*) is not allowed.

(\*) This approach is similar to the biomass balance approach, except that the recycled content is allocated to selected products.

#### **5.10.3 Other approaches of virtual attribution of product properties and claims**

Any other approaches to virtual allocation of product characteristics, claims etc. to a specific product line (and to the detriment of the other product lines) are not permitted. The attribution of renewable energy shares from the energy mix to a specific product line falls under this prohibition.

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.

Contractual instruments can include energy attribute certificates, renewable energy certificates (RECs), guarantee of origin (GOs) or green energy certificates.

Furthermore, it is prohibited to declare such claims and deviating indicator results based on them as additional information in text parts or annexes to the EPD.

#### **5.10.4 Offsetting and insetting**

As for energy, the market-based approach as per ISO 14067 and EN 15941 can be calculated, but no other methods of offsetting or insetting are allowed.

For materials no offsetting or insetting methods are allowed at all.

#### **5.10.5 Avoided burden approach is not allowed – Cut-off (100:0) is the only allowed method**

The application of the avoided burden approach (\*) is not allowed.

(\*) In this approach, all materials entering the product system are treated as primary materials, even if secondary materials are used. Credits are given for providing secondary materials to a second product system (e.g. deduction of an average production mix for a primary material used in the second life cycle). This approach is not compatible with EN 15804.

For ECO Platform EPD, the cut-off [100:0] LCA methodology shall be used.

#### **5.10.6 Primary energy content, absolute dry matter and net calorific value of absolute dry matter**

The primary energy content (PERM or PENRM) should be reported using the absolute dry matter and the net calorific value of the absolute dry matter.

#### **5.10.7 Indicators with uncertainties in the results**

Mandatory indicators:

Indicators with uncertainties in the results must be calculated and reported in the project report. Life cycle assessors must decide whether the uncertainties are so great that an ND is declared in the EPD with justification.

If the indicators are reported despite uncertainty, a disclaimer in a footnote should indicate precisely that there are uncertainties. These must be justified. Examples are the indicators FW and WDP.

Text formulation according to extract from EN 15804:

‘The results of this environmental impact indicator must be used with caution, as the uncertainties in these results are high.’

Optional indicators:

Here it is up to the manufacturers to decide whether to report it in some cases and not in others. If such indicators are requested by manufacturers, at least the text from EN 15804 should be quoted and, if possible, the reasons for the uncertainties should be stated.

#### 5.10.8 Declaration of additional

Instructions and requirements for additional information that is not part of the EPD content according to EN 15804 can be found in ISO 14025.

In the Bau-EPD GmbH or ECO Platform-EPD, any type of additional information must be verified.

Additional information can be put into the main part of the EPD (i.e. in separate chapters, separate tables) or put into annexes to EPD documents. An annex is considered as a part of the EPD and must be fully verified together with the EPD. Additional information shall not be put into the same tables of existing mandatory results according to EN 15804+A2.

An EPD may declare additional environmentally relevant information not derived from the LCA. Any additional environmental information declared shall be derived using appropriate methods and be specific, accurate, not misleading, and relevant to the specific product and be substantiated as part of the project report and verified as part of the EPD verification and quantitative information is preferred over qualitative information. All the quantitative information on emissions shall be provided with testing results from third-party testing laboratories or links to the studies underlying the flows.

Any use of non-EN 15804+A2 indicators shall provide the reference to where the methodology is provided.

Examples for allowed content elements of additional information:

- site and address lists
- extensions for mutual recognition of EPD in different programmes
- scaling tables or results with different toppings for i.e. insulation slabs...
- the release of dangerous substances into indoor air, soil, and water during the use stage,
- instructions for proper use of the product, e.g., to minimise energy or water consumption or to improve the durability of the product,



- instructions for proper maintenance and service of the product, e.g., to minimise energy or water consumption or to improve the durability of the product,
- information on key parts of the product that determine its durability,
- information on recycling including, e.g., suitable procedures for recycling the entire product or selected parts and the potential environmental benefits gained,
- information on a suitable method of reuse of the product (or parts of the products) and procedures for disposal as waste at the end of its life cycle,
- information regarding disposal of the product, or inherent materials, and any other information considered necessary to minimise the product's end-of-life impacts, and
- a more detailed description of an organisation's overall environmental work, in addition to the information listed in ISO 14025, Section 7.2.3 on information about EPD owner, such as:
  - the existence of any type of organised environmental activity,
  - information on where interested parties may find more details about the organisation's environmental work.

An EPD may declare additional environmentally relevant information derived from the LCA, for example:

- Additional indicator results using other characterisation methods, for example TRACI as required for the North American market according to ISO 21930.

An ECO EPD (including annexes) shall not include any LCA results violating the LCA rules in EN 15804+A2 or the ECO Platform Standards. Examples of LCA results not allowed in ECO EPDs are results based on a mass balance approach (see ECO Platform LCA calculation rules Section 2.4), results based on offsets or insets, and results showing the effects of multi-recycling in module D.

All additional information including environmental information derived from LCA shall be clearly marked as such, especially if it is not in the main part of the EPD but in an annex. The format and layout of annexes shall be designed in a way that it is clearly recognizable as additional information and explain the approach used and where the original EPD can be found.

#### **5.11 Products using energy in module B6 of the use stage and permanently installed into building or infrastructure (defined by the manufacturer)**

This chapter presents specific requirements which apply to EPDs of products using energy in module 6 of the use stage, where the products are permanently installed into the building or infrastructure as defined by the manufacturer.

Specific rules shall be provided, when relevant, into the PCR or sub-category PCR.

Specific rules are provided, when relevant, for products which are not used in the construction sector by the ECO EPD Programme Operators.

The EPD for products using energy in module B6 of the use stage and permanently installed into building or infrastructure (defined by the manufacturer) that are considered as construction products shall be developed in compliance with:

EN 15804+A2  
ECO Platform Standards

Programme operator PCR and sub-category PCR  
and should, if using electricity, consider the requirements of EN 50693 where possible.

## **Other requirements for products using energy in module B6 of the use stage and permanently installed into building or infrastructure (defined by the manufacturer)**

### **Regulatory perspective**

When an EPD is said to be applicable to a local context (ex. country specific EPD), the more demanding regulation applying to the local context shall be applied for the calculations of the EPD (ex. recycled content, recovered content, by-product content), if the EPD application requires it.

Therefore, if the country regulation is less demanding than the applicable European regulation, then the European regulation shall apply; if the local regulation is more demanding than the applicable European regulation, then the country regulation shall apply, if the EPD application requires it.

### **Allocation rules**

Information regarding specific allocation rules (e.g. rules, factors, interpretation) which are not described either in EN 15804+A2 or in the applicable c-PCR shall be included in the EPD.

### **Communication of interpretation**

The information shall be provided in the background report, and the verifier shall have access to it. They are usually not mentioned in the EPD, which is in line with EN 15804+A2.

## **Modules B**

B6 is mandatory for EPDs of products using energy in module B6 of the use stage and permanently installed into building or infrastructure (defined by the manufacturer), directly or indirectly (ex. a cable is consuming energy through dissipation/losses in the cable when electricity goes through it).

Such products shall also include any maintenance (B2), repair (B3) and replacement (B4) processes required to achieve the stated service life of the products, as well as emissions in use (B1) if relevant.

It is recognized that it may be difficult to separate maintenance, repair and replacement processes and the connected aspects and impacts into these separate modules, but all relevant processes to achieve the declared service life shall be assigned to one or more of these modules, and the description of the processes in each module shall be described in the EPD.

Technical information for the relevant declared B module(s) shall be provided in the EPD.

### **Module B6**

B6 shall be presented separately to let users of the EPD accommodate the calculation when appropriate.

If there is no international c-PCR available the programme operator may provide a justified use scenario to apply for each family of products (or product category) that it covers within its programme, together with the related calculation formula when appropriate. Usually this will be done through a programme specific PCR publication.

## 6 RULES FOR LCA-CALCULATION TOOLS

This chapter provides rules and references for EPDs produced with pre-verified LCA calculation tools and serves as a guideline for the production and use of LCA calculation tools.

The approach for use and verification of EPDs produced with tools based on the document "ECO Platform requirements for automated software systems (tools) for the production and verification of EPDs.

Chapter 5.10 currently does NOT address EPD tools (unlike the LCA tool, the EPD tool does not re-verify each EPD created with the tool).

### 6.1 Definition LCA-Tool

- The LCA tool uses an LCA model that is created on the basis of EN 15804 in the current version or the rules of Bau EPD GmbH (MS-HB and applicable documents in the current version) that are based on it.
- The LCA model is parameterised in such a way that only a predefined selection of input data (potential inputs and outputs) can be changed by the tool user
- The output of the LCA tool is a list of indicator results needed for an EPD.
- The EPD itself is then created by the user of the tool
- The LCA tool is used to create specific EPDs for different products that all have the same or similar production processes
- The LCA tool is valid for a defined product group specific PCR

### 6.2 Owner and/or user of an LCA-Tools

The owner of the LCA tool and the user of the EPD results can be different legal entities (here, the term "user of the results" refers to the declaration holders, i.e. those manufacturers/associations to whom the programme operator awards the EPD in accordance with ISO 17065; the programme operator remains the owner of the EPD).

Owner of the tool	User of the tool,
Associations	Association members, (manufacturers)
Software providers	Manufacturers
Manufacturers making similar products with differing bills of materials or differing physical	Retailers selling products for building projects.
	Manufacturers using their own tool

characteristics e.g. density, volume etc.	
EPD-creator/LCA-practitioner	EPD-Creator/ LCA-practitioners working for manufacturers

### 6.3 Verification effort for use of LCA tool results

<b>Tool-Art</b>	<b>LCA-Tool with individual verification</b>
<b>Output</b>	Results of LCA for product in question
<b>Input</b>	Quality of input data is not intrinsically ensured
Scope of verification - individual EPD	1. input data, consistency of input and output data (each individual EPD) 2. Format and content of EPD document

### 6.4 Verification of the LCA-Tool

#### 6.4.1 LCA-Tool-Qualification

- Review of the LCA tool before the actual process of verification begins.
- Presentation/ demonstration of the LCA tool by tool developers for programme operators, verifiers and (possibly) users.
- Support of the demonstration by reference data sets/ example data sets
- Demonstration of how manipulation of the tool is prevented (e.g. locking by programme operator)

#### 6.4.2 Principles of verification of qualified LCA tools

based on:

- LCA tool incl. instructions (may be integrated in tool)
- LCA tool project report
- EPD project report of the first EPD calculated by the tool (if possible for real product)
- EPD verification report of the first EPD calculated by the tool

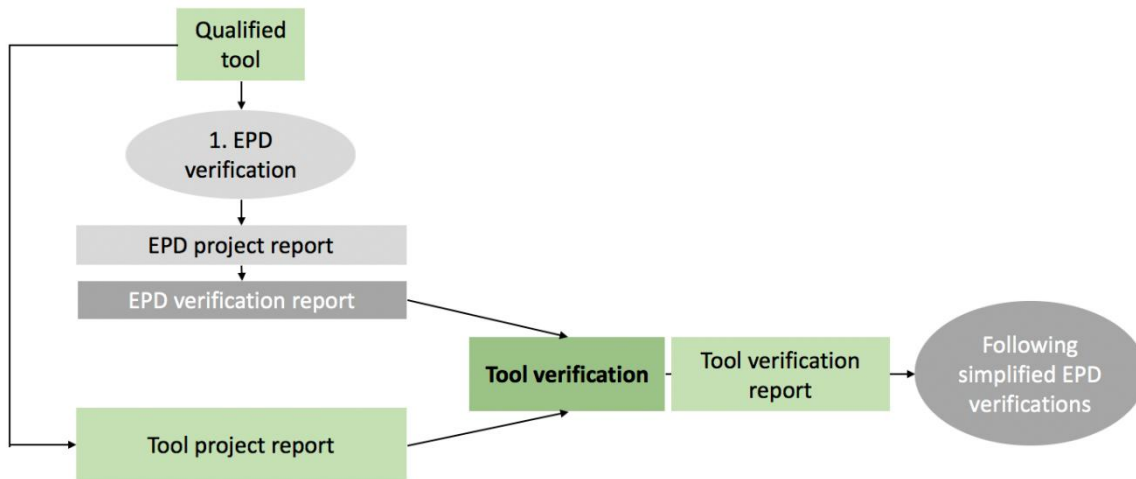


Figure 1: Description of the process and documents for LCA tool verification.

- Documentation of the LCA tool verification by means of a tool verification report.
- LCA tools may not be changed after verification
- The owner of the tool must notify the programme operator of all desired changes (lock by programme operator must be lifted for programming the changes!) and arrange for re-verification of the changes

##### 6.4.2.1 Content of LCA-Tool project report

- Owner of the tool (legal person)
- Identification of the tool including the version number
- applicable LCA including the LCA version
- Description of the LCA model of the tool
- Assumptions on which the model is based
- Sensitivity assessment of the variable parameters and/or identification of the variable parameters that influence the results of the indicator
- Description of the data quality
- Conditions under which the tool will be used
- Information or support for the project report of the first EPD

##### 6.4.2.2 Content EPD project report of the first EPD

- All information for the review of the first and subsequent (simplified) EPDs.
- Reference to the tool version and the project report of the LCA tool.
- Description and explanation of the variable input data and the main factors for the indicator results
- Description of the data quality of the variable input data
- Template for subsequent EPD project reports

#### 6.4.2.3 Content LCA-Tool verification report

- Documentation of the verification of the LCA tool
- Verification of the LCA in accordance with the core checklist of the ECO Platform or Bau EPD GmbH

#### 6.4.2.4 Content EPD verification report of the first EPD

- All information for the review of the first and subsequent (simplified) EPDs.
- Reference to the tool version and project report of the LCA tool.
- Description and explanation of the variable input data and the most important factors for the indicator results.
- Description of the data quality of the variable input data.
- verification action for any additional information e.g. non LCA indicator results
- Template for subsequent EPD project reports

#### 6.4.2.5 Verification of subsequent EPDs

- Each EPD is verified individually against the verification checklist of the ECO Platform or Bau EPD GmbH.
- LCA model and fixed contents of the EPD, but can be accepted on the basis of the verification of the LCA tool and the first EPD verification
- As a rule, mainly the variable input data and the respective results of the EPD have to be checked for plausibility
- Additional information on the LCA or formal aspects must also be verified

#### 6.4.2.6 Content EPD verification report of subsequent EPD

- Reference to the tool version and the tool verification report.
- Results of the simplified application of the core checklist
- Verification of the plausibility of the input data for the LCA compilation and its influence on the LCA results
- Verification measures for all additional information on the LCA

### 6.5 Changes of the LCA-Tool

- simplest way to ensure that LCA tool is not tampered with after verification is to lock it by the programme owner
- any change (e.g. to the LCA model) after verification by the owner of a locked tool results in a new version of the LCA tool
- it is the responsibility of the owner of the tool to update the tool if conditions have changed during the validity period of the tool
- it is the responsibility of the programme owner to inform the tool owner of relevant changes to the programme rules (e.g. changes to the PCR)

## 6.6 Validity of LCA-Tools

- LCA tools are valid for a maximum of 5 years
- after 5 years a tool must be verified again
- LCA tools must be archived by the tool owner for at least the validity period of the last EPD created with the tool

The specified 5 years or validity periods are time spans derived from EN 15804. Longer periods may be necessary for verification or liability issues of accredited or notified bodies (e.g. in the event of a dispute in court). The archiving periods of Bau EPD GmbH are therefore 10 years for all tools and documents. Archiving must be carried out by the programme operator itself as well as by the verifiers.

### **Applicable Documents:**

BAU-EPD-M-DOKUMENT-19b-LCA-Tool-Template verification report and checklist

## 7 DECLARATION OF INDICATORS AND PROJECT REPORT

### 7.1 Declaration of environmental indicators from the LCA

The declaration of the environmental indicators from the LCA in the EPD must be done in compliance with the content requirements in the product specific complementary PCR documents and any templates for project report and EPD document.

EN 15804+A2, clause 7.2.2: „Modules and indicators not declared shall be marked as “ND”. If an indicator value has been calculated to be “zero” or if the value of “zero” is plausible for this indicator e.g. there is no activity in the scenario, then “0” is declared for this indicator. The declaration of “-” is not allowed.“

It follows from the foregoing that:

- The result tables shall only contain numeric values or the abbreviation „ND“ (for modules and/or indicators Not Declared).
- There are no blank cells, horizontal lines or any abbreviations except ND.

ND is used only for indicators, that are not quantifiable due to a lack in data basis or that are allowed to be excluded following cut-off rules (i.e. GWP-luluc, if the contribution over modules A1 to C4 < 5% of GWP total).

Footnotes must be installed to explain, why results cannot be delivered in certain cases, how the result are to interpret and which aspects are not assessed. Approximations are always preferable to any ND-results.

EN 15804+A2, clause 7.2.2: „If an indicator is declared, it shall be declared in all the chosen modules. If an optional module is declared, all the chosen indicators shall be declared.“

### **Presentation of the modules**

- If modules are declared, all mandatory indicators as per EN 15804+A2 must be quantified. In exceptional cases the declaration of ND is allowed, see above.
- If a module is not relevant for a product, it should not be mentioned in the result tables. If it is mentioned the results of the parameters must show ND. This leaves all options for LCA calculation on building level.
- If no process flows are expected within a module, the results of the parameters must show a calculated 0, for no mass flows occur. This would constrain the options on building level to a likely scenario. In this case the module shall not be marked as ND.



## 7.2 Project report describing the LCA

The project report is the systematic and comprehensive summary of the project documentation supporting the verification of an EPD. The project report must contain the indications noted in EN 15804+A2, clause 8.

The project report shall be made available to the verifier with the requirements on confidentiality stated in EN°ISO°14025. The project report is not part of the public communication.

### **Applicable Documents:**

~~BAU EPD-M-DOCUMENT-13A1- project report content and format template -EN15804+A1- withdrawn~~

BAU EPD-M-DOCUMENT-13A2- project report content and format template -EN15804+A2

## 7.3 Reference service life (RSL)

See EN 15804+A2 clause 6.3.4 and Annex A „Requirements and guidance on the reference service life”.

If no reference service life can be calculated following the rules of EN 15804+A2 (Annex A), default values from complementary product specific PCR from the CEN/TC-Product Panels must be used. If no complementary PCR are available, the reference service life can be taken from service life catalogues, citing the source, i.e. from BAU EPD-M-DOCUMENT-19-reference service life-20150810 (Austria) resp. the BBSR-Table „Service life of building components“ (Germany).

### **Applicable documents:**

BAU EPD-M-DOCUMENT-20-reference service life-20150810

## 7.4 Digital Data Transfer

### 7.4.1 Information Transfer Matrix resp. EXCEL templates for electronic data processing

The LCA information is to declare following EN 15942 annex A and the determined positions in the Information Transfer Matrix (ITM). For this, *BAU EPD M-Document 8: Excel-file for electronic data transfer* provided by Bau EPD GmbH must be used.

On the Bau EPD GmbH website, all M-08 MS-Excel documents are published in PDF format with the associated EPDs and can be downloaded freely.

### **Applicable documents:**

BAU EPD M-DOCUMENT-8: *Excel-file for electronic data transfer baubook OEKOBAUDAT ECO Platform*

### 7.4.2 Mandatory information in digital datasets for ECO Platform

The following requirements are taken from ECO Platform Standard “Digital Data Requirements Technical Requirements for digital (machine readable) for ECO EPDs Version 2.0 (Dec 2024), chapter 3:

The following is a list of mandatory information items that must be present in a digital EPD dataset. They refer to the corresponding field or section in the ILCD+EPD format specification where the data type etc. is precisely defined. This document provides merely a list of the items that are required for ECO Platform with a brief

field description for context and convenience. The authoritative and precise definition of each field is given in the ILCD+EPD format specification (Downloadlink can be found in the above stated ECO Platform Standard, [www.eco-platform.org](http://www.eco-platform.org)). The mandatory information items that need to be present in a dataset are:

Field name	Field description
UUID	Automatically generated universally unique identifier of this data set. Together with the "Data set version", the UUID uniquely identifies each data set.
name	General descriptive and specifying name of the product/system.
publication date of EPD (non-generic data)	Exact date of publication of the EPD
reference year	First year of the time period for which the data set is valid.
data set valid until	End year of the time period for which the data set is still valid. This date also determines when a data set revision / remodelling is required or recommended due to expected relevant changes in environmentally or technically relevant inventory values, including in the background system.
location	Region, for which the data set is representative / relevant.
technology description	Description of the technological characteristics including operating conditions of the product system or process. If relevant for the technological representativeness this comprises the technological characteristics of the relevant upstream and downstream processes ("background system") included in the data set.
technical purpose	Brief description of the intended use / possible applications of the good, service, or process, e.g. for which type of products the material, represented by this data set, is used. For construction products the feasible applications in the building shall be given.
dataset type (subtype)	Indicates the type of data set regarding its representativeness (specific, average, representative, template, generic)
reference to original EPD (except generic or representative data)	link to the original EPD document

background database	background data (like GaBi or ecoinvent) that has been used including the specific database version (e.g. ecoinvent 3.9.1)
LCA methodology report	reference to the applicable PCR(s)
reference to dataset format	indicates the version of the ILCD format and EPD extension
reviewer name and institution	the name of the verifier
dataset version	Version number of data set; is automatically generated. Together with the data set's UUID, the "Data set version" uniquely identifies each data set.
date of last revision	Date when the data set was revised for the last time; typically manually set
owner of dataset	the person or entity who owns this data set (usually the declaration owner and thus the manufacturer)
data set generator/modeller	the person(s), working group(s), organisation(s) or database network, that generated the data set, i.e. being responsible for its correctness regarding methods, inventory, and documentative information.
publisher of the data set	Organisation which publishes the EPD data sets.
issuer of the data set (registration authority)	authority that has registered this data set (e.g. Program Operator)
registration number (except generic or representative data)	ID number of EPD or project.
copyright	Indicates whether or not a copyright on the data set exists. Decided upon by the "Owner of data set"; usually "yes".
licence type	Type of licence that applies to the access and use of this data set, usually <i>Free of charge for all users and uses</i>
access and use restrictions	Access restrictions / use conditions for this data set as free text or referring to e.g. licence conditions. In case of no restrictions "None" is entered.

reference flow (section quantitative reference)	Link to reference flow of data set; the reference flow is the output that represents the product. Therefore, for each EPD (process) data set, at least one reference flow data set has to be given that represents the product. The amount of the exchange with the reference product, together with the reference flow property of the reference product, indicates the declared unit (or functional unit) as stated in the EPD.
biogenic carbon content	Biogenic carbon content in product and biogenic carbon content in accompanying packaging as per EN15804+A2
material properties	Declaration of relevant non-scaling physical product properties such as density etc. that are necessary for conversion of the amount the material is declared into other dimensions
all mandatory indicators according to EN15804+A2 must be present for all relevant life cycle modules	
compliance to 15804+A2 compliance system must be declared	

Note: Currently, this information is transmitted to the ECO Platform data portal by the programme operator using software provided by the ECO Platform, whereby information that is not currently available in the pdf EPD documents is added by the programme operator (the software is the so-called 'EPD Editor', the source and download option for this freely available software can be found in the above-mentioned ECO Platform Standard).

## 8 SPECIFIC RULES WITH REFERENCE TO GENERIC DATA FOR COMMONLY OCCURRING PROCESSES

### 8.1 Special rules for chemicals

If neither specific nor generic data exist for a chemical substance, it is recommended to try – following the cut-off rules – to model the chemical either stoichiometrically over the basis chemicals or with basis data from the data base „ecoinvent – chemicals, organic“ resp. “chemicals, inorganic”. The plausibility of the assumptions must be controlled by persons with respective special knowledge.

### 8.2 Special rules for energy supply (Pooled energy resources)

EN 15941 Annex E for energy supply shall apply.

Eco Platform LCA rules for energy supply shall apply.

#### 8.2.1 Electricity

Bau EPD GmbH decided to accept contractual instruments, all EPD in the programme shall follow the rules of this document for the quantification of the LCA with respect to electricity generation: Double counting must be avoided. This means that all electricity generation in all EPD without contractual instruments (Contractual instruments can include energy attribute certificates, renewable energy certificates (RECs), guarantees of origin (GOs) or green energy certificates or power purchase agreements = PPAs) shall be calculated with residual mix. In case data bases

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do not yet provide aggregated upstream data sets with residual mix, this shall be noted in the project report under data quality description.

The use of consumption mixes for all electricity generation (and no contractual instruments) may be communicated as additional information as stated in the reporting section below.

Rules on the use of contractual instruments are defined as per ISO 14067 and EN 15941 and described in the table below, which elaborates more specific situations.

#### **Definition for the term “reliable and transparent book and claim registry”:**

Contractual instruments can only work with a reliable and transparent book and claim registry to avoid double counting. The ECO Platform definition of a “reliable and transparent book and claim registry” is as follows:

The registry must be run by an independent organization and must cover one geographical region and be the only one there. Within this clearly defined geographical (not necessarily national) region, energy producers shall only be allowed to declare their produced kWhours in the mentioned registry, not in many different registries on the globe that may not be connected to compare who is declaring what where. Double counting shall be avoided by that rule.

The use of single, reliable and transparent book and claim registry for a country or region means that the national or regional residual mix can be calculated and provided, and this is covered by case 3a) in the table below if the residual mix is published, and Case 3b) if no residual mix is published.

#### **Use of Contractual Instruments**

The validity of contractual instruments shall be followed up over the validity period of the EPD.

For all cases where contractual instruments are used, they shall be provided with tracking numbers.

To check on double counting: used tracking numbers must be cancelled in the relevant registry. If there is no registry, then the contractual instrument shall not be considered valid.

Bau EPD GmbH has a procedure of assuring proof of contractual instruments on a regular basis. The proof documentation of energy contracts is filed transparently after successful verification. Random checks are made over the validity period of the EPD. In case of new issues all manufacturers have to provide the energy proof documentation for all the years before in a transparent and chronological overview and give access to contracts and bills of the past.

Documentation shall be checked on the following information, contractual instruments shall be provided with the following aspects:

#### **Mandatory Aspects:**

- Energy provider
- Manufacturer
- Electricity mix, attributes of electricity
- Energy amounts
- Time periods for issue and validity

#### **Optional Aspects**, justification must be provided if information is not available:

- Addresses of power plants
- Tracking numbers

Information on (direct) coupling yes/no

**Note 1:** Concept (direct) coupling: The linkage certifies that the GO is linked to the underlying electricity and that the energy producer (plant) actually delivers it together with the electricity to the energy provider.

**Note 2:** Proof from external verification bodies (accredited bodies) may contain less information than listed above so further checks may be necessary.

**Note 3:** Tracking numbers are in most cases deleted automatically in national systems, sometimes energy providers can deliver excel files to check on energy amounts versus number of certificates.

Solution: show proof for tracking or documentation of justification why tracking was not possible.

Sometimes only 100% renewable energy products are deleted from registry. Mixes of renewable energy and non-renewable energy are sometimes not deleted. (Example: energy providers may only state that they have certain amounts of renewables in the mix, but no GOs available).

Tracking numbers could sometimes only be provided from national energy control bodies. These systems are fully digitalized, and the “book and claim” method is fully automatized. Energy providers book and within seconds the energy amounts are cancelled in the AIB system. That is done MWh per MWh and proof documentation in form of Excel sheets etc. This kind of proof shall only be demanded and checked by verifiers in case of justified doubt about all other documents delivered by energy providers/certification bodies.

If there are no tracking numbers and contractual instruments are not transparent, then there shall be no acceptance of the contractual instruments, and the residual mix shall be used.

**Intermediate conclusion if GOs are available but without confirmation of cancelling:**

Proof that manufacturers have asked for cancellation confirmation is sufficient throughout the period of validity of the EPD, e.g. through annual checks.

**Table 2** Requirements for use of market-based or location-based approaches

	Situation regarding contractual instruments for the market-based approach	Foreground data [see Note 1]	
		Market-based approach – foreground data	Location-based approach – foreground data
<b>Case 1a)</b> Manufacturer produces energy on site and uses it	No contractual instruments have been sold	Own generation mix	Own generation mix
	Contractual instruments have been sold	Residual mix	
<b>Case 1b)</b> Manufacturer produces electricity on site and exports it	Renewable electricity is exported with or without contractual instruments	Account for consumed electricity as for Case 1a) above. Any imports to have residual mix, unless contractual instruments have been purchased in which case, contractual instrument mix	Account for consumed electricity using own generation mix, imports to have consumption mix
<b>Case 1c)</b> Direct connection	with contractual instruments	Contractual instrument mix [direct connection mix]	Direct connection mix
	without contractual instruments, no contractual instruments sold	Direct connection mix	
	Contractual instruments sold to others	Residual mix	
<b>Case 2</b> National state with mandatory electricity labelling, e.g. Austria, Switzerland		Supplier mix, see Note 2	
<b>Case 3a)</b> National state or region with single registry and published residual mix, e.g. EU, UK	with contractual instruments	Contractual instrument mix	Consumption mix
	without contractual instruments	Residual mix	

	Situation regarding contractual instruments for the market-based approach	Foreground data [see Note 1]	
		Market-based approach – foreground data	Location-based approach – foreground data
<b>Case 3b)</b> National state or region with a “single reliable and transparent book and claim registry” outside EU, with no published residual mix	with contractual instruments	Contractual instrument mix	Consumption mix
	without contractual instruments	Consumption mix minus all renewables [conservative]	
<b>Case 4a)</b> National state in the EU without no registry or more than one registry	In the EU, all countries are only covered by the AIB registry.		
<b>Case 4b)</b> National state with no registry	There are no contractual instruments	Consumption mix [but check with ECO Platform whether any contractual instruments have previously been provided in the country, in which case, the case 4c) must be used.	Consumption mix
<b>Case 4c)</b> National state with one or more registries but no “single reliable and transparent book and claim registry”, outside EU, e.g. Turkey, US	with contractual instruments	Contractual Instrument mix	Consumption mix
	without contractual instruments	Consumption mix minus all renewables [conservative]	

**Note 1** Foreground data can sometimes also include A4 and A5 (e.g. ready-mix concrete).

**Note 2** For Case 2, energy providers must deliver proof of origin (Mandatory: contract papers with name and address of contract partners; optional for the time being: addresses of plants, sites). Energy amounts from contracts/accounting documents must correspond to energy consumption in LCA.



**Table 3** Recommendations for background data in the market-based and location-based approaches

	Market-based approach - background data	Location-based approach – background data
Background data - actual use known, e.g. sector EPD where data collection from manufacturers provided evidence of use of own generation/direct connection/use of contractual instruments	Actual mix including own generation/direct connection/contractual instruments/residual as relevant	Actual mix including own generation/direct connection/consumption mix
Background data – actual situation not known	Pragmatically, although generic datasets based on the actual mix (own generation/direct connection/contractual instruments/residual) should be used, background datasets based on consumption mix may be used where consistent databases are not available. Use of consumption mix in the background data should be stated in the EPD when the market-based approach is used.	Consumption mix
Background data is black box – the user cannot see how much electricity has been modelled	Background data based on consumption mix may be used but should be stated in the EPD when the market-based approach is used.	Consumption mix
Background Data – upstream data, e.g. EPD	For products where electricity used in upstream processes has a significant influence on LCA results, checks shall be made of the approach used to model electricity in this upstream data to check it follows the same approach as the EPD Programme, or is conservative. Justification required in the EPD, if the information on the approach used is not available.	
Background Data – downstream data	Consumption mix.  Only if the manufacturer has direct control over a process in any of the B and/or C modules (which, e.g., may be the case for energy contracting, construction	Consumption mix

	Market-based approach - background data	Location-based approach – background data
	services or for recycling), may the generation of electricity used in this process be modelled with a contractual instrument or the residual mix.	

## Reporting Communication

Reporting an additional set of results in the project report is recommended based on the electricity modelling approach (market-based or location-based) not used for the main results.

If an additional set of results is declared in the project report, there are several options for declaration of these results in an EPD:

- not to provide the additional results in the EPD
- to provide an annex to the EPD with the second set of results
- to declare two result tables in the EPD with the set of results which doesn't follow the PCR in relation to the market- or location-based approach clearly labelled as additional
- and optionally, additionally to provide an interpretation of the different results in the EPD.

If any additional reporting is undertaken in relation to electricity, results must be clearly labelled in the EPD so the user is clear what is provided.

**Note 3:** In some countries, parts of the electricity from renewable energy sources might be sold/exported as renewable electricity without being excluded from the supplied mix. For this reason, in such cases a sensitivity analysis applying the relevant consumption grid mix shall be conducted and reported in the project report to demonstrate the difference in results of the electricity tracking instruments.

## Calculation of the consumption mix for electricity

The consumption mix is national (or sub-national) production plus imports and excluding exports. The national consumption mix shall be used, except for Australia, Brazil, Canada, China, India, and USA, where sub-national consumption mix shall be used.

## Calculation of residual mixes of electricity

Available datasets from background databases can be taken. Transmission and distribution losses shall be considered as for consumption mix. If no datasets are available or applicable the calculation of the residual mix shall be done as follows:

For countries that are members in the AIB-system, the AIB methods shall be used for calculating the residual mix.

The method implemented within the LCA (year and name of document) shall be referenced (in EPD as well as in project report).

Modelling of European residual mixes<sup>3</sup> shall follow the latest AIB method.

For countries which aren't members of the AIB-system, and where the residual mix has not been integrated into background databases, modelling based on the calculated residual mix and datasets for each generation mix shall be carried out, accounting for transmission and distribution losses as for consumption mix.

Transparent and trackable documentation is mandatory in the project report for the electricity purchased in the A3 processes.

**Note 4:** This document does not formulate explicit rules on which electricity mixes to use for upstream data of supplied materials, see the recommendations for background data in table above.

<sup>3</sup> <https://www.aib-net.org/facts/european-residual-mix>

LCA-practitioners shall provide emission factors to the verifier per kWh modelled electricity mixes used in the manufacturing processes in A3, at least for the GWP-indicators, or for core EN 15804+A2-LCIA-indicators (in the project report or by alternative means).

The market-specific product mix shall be modelled for all manufacturers; if this cannot be verified, the supplier mix of the energy provider must be modelled. The market-specific product mix, which is contractually proven for an individual plant/production line with 1 electricity connection, applies to its entire production masses within the balancing period. It is not permissible to allocate shares of renewable energy mathematically (virtual allocation of the "renewable energy" attribute) to only parts of the products ("green line"). The smallest unit is a production line with 1 electricity connection. Production lines with different electricity connections/electricity contracts can declare different EPD data.

In Austria and Switzerland there are electricity labelling regulations (note: if manufacturer's plant is located within the Austrian or Swiss national border, the metering point is also within the national border). Therefore, no residual mix is applicable.

Evidence for "book and claim"-type cancellation scenarios of the guarantees of origin are only necessary in these countries, if there are justified doubts about the information provided by the manufacturers/energy producers and can be requested in Austria from E-Control. Otherwise, contractual papers between producers and energy suppliers, and the latter with other energy suppliers, are sufficient.

Evidence of the mix purchased must be provided by the producer for a period of 5 years. This can be done by means of long-term contracts or annual proofs to the programme operator. The programme operator checks the contracts on a random basis, but in any case, retroactive proof of the energy purchased must be provided when the EPD is extended/reissued after 5 years.

### **8.2.2 Biogas-Rules**

Contractual instruments for biogas are accepted by Bau EPD GmbH. The following rules apply:

#### **Biogas from the gas network**

Biogas contractual instruments shall be used for modelling biogas when the supplier is able to guarantee that the contractual instrument meets the requirements for tracking and traceability, see EN 15941 E.2.1. For gas purchased without contractual instruments the residual mix shall be applied.

#### **Biogas from a directly connected supplier**

Life cycle data for the biogas supplied may be used if there is a dedicated pipeline or supply between the organization and the biogas plant from which the life cycle data is derived, and no contractual instruments have been sold to a third party for that consumed biogas. Otherwise, the residual mix shall be used.

#### **Internally generated biogas**

For internally generated and consumed biogas, where no contractual instruments have been sold to a third party, the life cycle data for the biogas shall be used for that product. Otherwise, the residual mix shall be used.

#### **Residual gas mix**

As long as the AIB system does not provide guidance and/or data sets for residual gas mixes and the background databases also do not give appropriate data sets, the residual mix must be calculated following the AIB guidance for green electricity as closely as possible. Conservatively, it would be 100% natural gas.

Note 1:

For tracking and traceability, the rules of green electricity apply accordingly.

Note 2:

For biogas it is not always clear at which geographical point in the gas grid the biogas is put into the pipe system nor are the pipe systems connected in a way as electricity grids are connected. Until further notice a physical connection of gas grid systems is not required to accept GOs for biogas.

Note 3:

The above rules are meant only for input as energy carrier (not as feedstock).

#### **Reporting Communication**

Reporting an additional set of results in the project report is recommended:

Market-based approach: using GOs and residual mix,

Location-based approach: using the actual consumption mix (= national/sub-national production + imports – exports),

If an additional set of results is declared in the project report, options are:

- not to provide the additional results in the EPD
- to provide an annex to the EPD with the second set of results
- to declare two result tables in the EPD with the set of results which doesn't follow the PCR in relation to the market- or location-based approach clearly labelled as additional
- and optionally, additionally to provide an interpretation of the different results in the EPD.

If any additional set of results is declared in relation to in relation to biogas, results must be clearly labelled so the user is clear what is provided.

### **8.2.3 Additional information for transparency for energy**

#### **Mandatory:**

The use of the location-based or market-based approach must be reported for any results in the EPD,

To clarify EN 15941, if electricity accounts for more than 30 % of the total energy use in stage A1-A3, provide in the EPD the GWP-total of the electricity in kg CO<sub>2</sub>e/kWh used in foreground processes and any other processes in the direct control of the manufacturer;

To clarify EN 15941, if gas accounts for more than 30 % of the total energy use in stage A1-A3, provide in the Project Report, the GWP-total of the applied specifically gas mix in kg CO<sub>2</sub>e/MJ of any gas purchased with contractual instruments or biogas used in the foreground manufacturing processes, and any other processes which the manufacturer has direct control over,

Justification shall be given in the project report if any information is not provided;

If the market-based approach has been used, for foreground manufacturing processes and any other processes which the manufacturer has direct control over, the EPD shall declare how the electricity or biogas used has been modelled, e.g. using a residual mix, electricity backed up by a contractual instrument, onsite generation, direct connection etc.

Any use of contractual instruments for modelling biogas or electricity shall be reported in the EPD.

Optional:

Detailed description of Energy datasets used should be provided in the EPD.

### 8.3 Special rules for transport

The calculation procedure must be as follows: manufacturer's data must be gathered and used wherever possible. Else it is mandatory to find out which lorry types (Euro classes) are allowed in each country. For transports without transparent manufacturer's claims the worst-case fleet mix with the lowest Euro class admitted must be assumed.

Transport data must be gathered in mass-related approached. In case of materials whose gross density differs a lot from the model, a sensitivity analysis must be carried out. As appropriate another reference value (i.e. volume relation) or the fuel consumption in direct figures may be used.

If the manufacturer does not provide data concerning transport distances, the distances within Europe can be calculated with route planners. Distances to locations not included in these route planners can be estimated by distances to the next bigger location with a respective addition. Results must be rounded up by 5 km steps. Distances of shipping overseas can be taken from <http://www.dataloy.com>, or the software „google earth“.

Principally the origin of raw materials should be known. In some cases this cannot be found out (purchase on commodities exchange, origin of raw materials in upstream products not traceable...). If the exact origin of raw materials or transport routes is unknown, the relevance of raw material transport is to estimate with a sensitivity analysis.

Generic data sets mostly include assumptions for transport distances. These can be taken, if the relevance of the transport is minimal (see cut-off criteria) or if the Product Category Rules determine it that way.

For product specific modelling of raw material transports realistic szenarios shall be made and they must be described transparently in the project report. The szenarios shall include:

- Description of the transport goods,
- Transport distances,
- Means of transport (if known: load capacity, loading factor, fuel use, emission values resp. EURO emission class)
- Assumptions concerning empty runs

### 8.4 Special rules for packages

The primary energy embodied in packaging materials (PERM bzw. PENRM) should be included in stage A3.

### 8.5 Special rules for emissions and disposal of emissions

For all construction products showing essential thermic fractions and/or process specific emissions and for which a measurement of emissions is required by law, the product specific emissions must be collected. For processes with emissions of low ecological impact without specific data, generic data might be used.

### 8.6 Special rules for waste treatment

The waste treatment or disposal process must be oriented to modern state of the art.

### 8.7 Special rules for waste water

If the size of a waste water treatment plant is not defined for the treatment of occurring waste water a worst-case-scenario must be calculated.

### 8.8 Special rules for Infrastructure

For infrastructure and production plants like e.g. machinery, wear parts or buildings respective ecoinvent modules or data from literature must be used, if relevant.

## 9 REQUIREMENTS ON APPROVED DATA BASES FOR GENERIC DATA

Generic data can be taken from the following data bases (only with the stated minimum version):

#### database 1: ecoinvent

As a system model „cut-off by classification“ is defined. In any case the newest version of an ecoinvent data set provided by established tools for LCA assessment (SimaPro, MLC/GaBi, Umberto etc.) must be used. Use of single data sets from previous versions is allowed only in special cases (see chapter on generic data) and only if an explanation is given. Effective date is the date of the order of the EPD.

#### database 2: MLC/GaBi

The newest version provided by the host of the database on the effective date (date of order of EPD) must be used

For both data bases it is mandatory to declare the version number of the data base as well as the version number of the software used. For MLC/GaBi software the version year is not enough, all additional codes must be stated (i.e. SP 30).

## 10 FINANCING AND FEES

To finance the EPD programme, Bau EPD GmbH has created a scale of charges and fees for manufacturers/clients that can be downloaded from the website [www.bau-epd.at](http://www.bau-epd.at).

We consider ourselves to be a Programme Operator for the common good with the objective to provide transparent environmental data for the public and to give manufacturers valuable information how to organize their production processes in environmentally friendly and cost-efficient ways.

The fees of the programme must cover all costs for programme operation, PCR creation, maintenance of PCR documents, cooperation with head organisations and membership fees asked by those institutions, translation fees, general consulting services, specific consulting services for clients, organisation of information events, further education for registered LCA practitioners and independent third-party verifiers, verification of EPD documents as well as costs for declaration and publication. The cooperation with database providers and users (providers of databases for construction products, building assessment schemes) is an essential part of the programme operation. Support in standardisation and legislation completes the programme.

To help SMEs and small association to publish EPD the fees are scaled according to the size of the companies/institutions.



## 11 APPLICABLE DOCUMENTS (ANNEXES OF THE BAU EPD MS-HB)

The following applicable documents must be considered for the EPD creation within the programme of Bau EPD GmbH:

*BAU EPD-M-DOCUMENT-1-organisation, function holders, competences*  
*BAU EPD M-DOCUMENT-2-requirements on LCA and EPD – text template*  
*BAU EPD M-DOCUMENT-3-contract verification and participation in EPD programme Bau EPD*  
*BAU EPD M-DOCUMENT-4-rules ECO Platform EPD logo use*  
*BAU EPD M-DOCUMENT-4a-rules for use of Bau EPD logo*  
*BAU EPD M-DOCUMENT 5-list of members of PCR panel plus evidence of education*  
*BAU EPD M-DOCUMENT 6-list of registered LCA practitioners in PCR advisory panel*  
*BAU EPD M-DOCUMENT 7-application form for registered LCA practitioners for PCR panel*  
*BAU EPD M-DOCUMENT 8-excel-file for electronic data transfer Editor baubook ECO Platform*  
*BAU EPD M-DOCUMENT 9-overview list product group panels-members (contact and competences)*  
*BAU EPD-M-DOCUMENT-10-product categories PCR B numbering system overview*  
*BAU EPD-M-DOCUMENT-11-general rules for PCR creation*  
*BAU EPD-M-DOCUMENT-12- procedure for PCR creation for specific product groups and PCR verification flow diagram*  
*BAU EPD-M-DOCUMENT-13A1-project report content and format template-EN15804+A1-withdrawn*  
*BAU EPD-M-DOCUMENT-13A2-project report content and format template-EN15804+A2*  
*BAU-EPD-M-DOCUMENT-13a2-prestudy-project-report-content-and-format-template-EN15804+A2*  
*BAU EPD-M-DOCUMENT-14A1-EPD content and format template MS Word Document-EN 15804+A1-withdrawn*  
*BAU EPD-M-DOCUMENT-14A2-EPD content and format template MS Word Document-EN 15804+A2*  
*BAU-EPD-M-DOCUMENT-14a2-prestudy-content-and-format-template-EN15804+A2*  
*BAU EPD-M-DOCUMENT-15-list of approved verifiers*  
*BAU EPD-M-DOCUMENT-16-application form for independent third-party verifiers*  
*BAU EPD-M-DOCUMENT-17-evaluation process verifiers for EPD project + procedure EPD verification*  
*BAU EPD-M-DOCUMENT-18-contract for verification of an EPD project*  
*BAU EPD M- DOCUMENT-19-template verification report including checklist for verification A1 + A2*  
*BAU EPD M-DOCUMENT-19a-template verification report additional comments*  
*BAU-EPD-M-DOCUMENT-19b-LCA-Tool-template verification-checklist-A2*  
*BAU EPD-M-DOCUMENT-20-reference service life-20150810*  
*BAU EPD-M-DOCUMENT-21-template internal audits*  
*BAU EPD-M-DOCUMENT-22-template management reviews*  
*BAU EPD M-DOCUMENT 23-members TAC*  
*BAU EPD M-DOCUMENT 24-rules of procedure TAC*  
*BAU EPD M-DOCUMENT 25-cooperation agreement TAC*  
*BAU EPD M-DOCUMENT 26 conformity assessment programme for EPD – process flow*  
*BAU EPD M-DOCUMENT 27-application for EPD verification*  
*BAU EPD M-DOCUMENT 28-matrix of powers and competences*  
*BAU-EPD-M-DOCUMENT-29-file index data saving*  
*BAU EPD M-DOCUMENT-30-management of action and measures*  
*BAU EPD-M-DOCUMENT-31-NDA-non-disclosure agreement.*  
*BAU EPD M-DOCUMENT 32-control of documents and records*  
*BAU EPD-M-DOCUMENT-33-overview valid QM-Documents-documentation of track changes*  
*BAU EPD M-DOCUMENT 34-external contractors competence assessment*

*BAU EPD M-DOCUMENT 35-management of appeals and complaints*  
*BAU EPD M-DOCUMENT-36-Feedback template*  
*BAU EPD M-DOCUMENT-37-Modelling of EoL (Modul C und D)*  
*BAU EPD-M-DOCUMENT-38: comment table for PCR creation and review*

## 12 ABBREVIATIONS AND DEFINITIONS

declared unit	quantity of a construction product for use as a reference unit in an EPD for an environmental declaration based on one or more information modules
ELCD	European database for LCA
EPD	Type III Environmental Product Declaration
functional unit	quantified performance of a product system for use as a reference unit
generic data	Data that is not site- or company-specific (EN 15941): Note 1 to the term (EN 15941): This refers to data that is not collected, measured or estimated directly by a company, but is obtained from a third-party life cycle inventory database or other sources. Generic data includes industry average data (e.g. from published production data, official statistics and industry associations), literature studies, engineering studies and patents, and may also be based on financial data and include proxy data and other generic data.
interested party	person or organization that can affect, be affected by, or perceive itself to be affected by the use or publication of a type III environmental product declaration
life cycle	consecutive and interlinked stages of a product system, from raw material acquisition or generation from natural resources to final disposal
LCA	compilation and evaluation of the inputs, outputs and the potential environmental impacts of a product system throughout its life cycle
LCI	phase of life cycle assessment involving the compilation and quantification of inputs and outputs for a product throughout its life cycle
LP	leader of programme operation
PGF	Product group forum
programme operator	body or bodies that conduct a Type III environmental declaration programme
product category	group of products with the same functions
PCR	Product Category Rules: set of specific rules, requirements and guidelines for developing Type III environmental declarations for one or more product categories

PCR review	process whereby a third-party panel verifies the product category rules
RSL	Reference Service Life: service life of a construction product which is known to be expected under a set of reference in-use conditions and which can form the basis for estimating the service life under other in-use conditions
TAC	Technical Advisory Committee
Type-III-EPD	environmental declaration providing quantified environmental data using predetermined indicators and, where relevant, additional environmental information
Type-III-EPD-Programme	voluntary programme for the development and use of Type III environmental declarations, based on a set of operating rules
verification	confirmation, through the provision of objective evidence, that specified requirements have been fulfilled

## 13 REFERENCES

No reference documents for the moment.