



INSTITUT BAUEN UND UMWELT
NACHHALTIGKEIT BRAUCHT
KLUGE ENTSCHEIDUNGEN



**Environmental Product Declarations in digital form:
More than nice to have**

Content

- Introduction IBU
- EPDs
- Digitalization of EPDs
- Dataformat
- Applications of EPDs
- “Take Away”





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Introduction Institut Bauen und Umwelt e.V. (IBU)

Who is IBU?



- IBU is an association of manufacturers of construction products (voluntary)
- IBU-members cover all kinds of materials and products of construction industry
- About 320 members incl. 42 associations, 30 % international (22 nations)

IBU`s mission?

- Promoting sustainable construction by developing and providing information on sustainability of construction products
- Providing credible and consistent information on the environmental performance of construction products

What does IBU do?

IBU operates an Environmental Product Declarations (EPDs) program (in accordance with ISO 14025, EN 15804 & ISO 21930)

- Information about the life-cycle environmental impact of construction products (environmental data)
- IBU-EPDs are independently verified by a 3rd party
- EPD-program is supervised by an independent advisory board

Introduction Institut Bauen und Umwelt e.V.

Where do you find our EPDs?

Publication of EPDs:

IBU: <https://epd-online.com/>

<https://ibu-epd.com/ibu-data-start/>

PDF Documents

Digital twins as XML-File



Europa: <https://www.eco-platform.org/>

Digital Database of the European umbrella organization



D: <https://www.oekobaudat.de/>

Database of the German government





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EPDs

Normative background / environmental labels

Classification of EPDs in the ecolabelling system

Environmental labels are regulated by the ISO 14020 series of standards. The aim is to promote demand for ecological products and services by providing environmental information.

A differentiation is made between three types of eco-labels:

Type I: Certified environmental labels such as the EU's Flower of the EU, the Blue Angel, the Scandinavian Nordic Swan, natureplus



Type II: Self-declarations by manufacturers and retailers, e.g. recycling symbol



Type III: Verified environmental product declarations e.g. from IBU



Normative background / environmental labels

Standards

ISO 14025:2011-10:

Environmental labels and declarations - Type III environmental declarations - Principles and procedures (ISO 14025:2006); German and English version EN ISO 14025:2011

EN 15804:2022-03:

Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products*;
German version EN 15804:2012+A2:2019 + AC:2021

* Please note construction products in the sense of this standard are all products that will be in a building (as interior lighting) or civil engineering works (e.g. streetlights, heavy current transformer)

ECO-Platform:

LCA calculation rules (published 12/23)

EN 50693:2022-08:

Product category rules for life cycle assessments of electronic and electrical products and systems

Standard was developed for EEE products in general (e.g. Laptops, mobiles), contains no specifications for building sector



Normative background / environmental labels

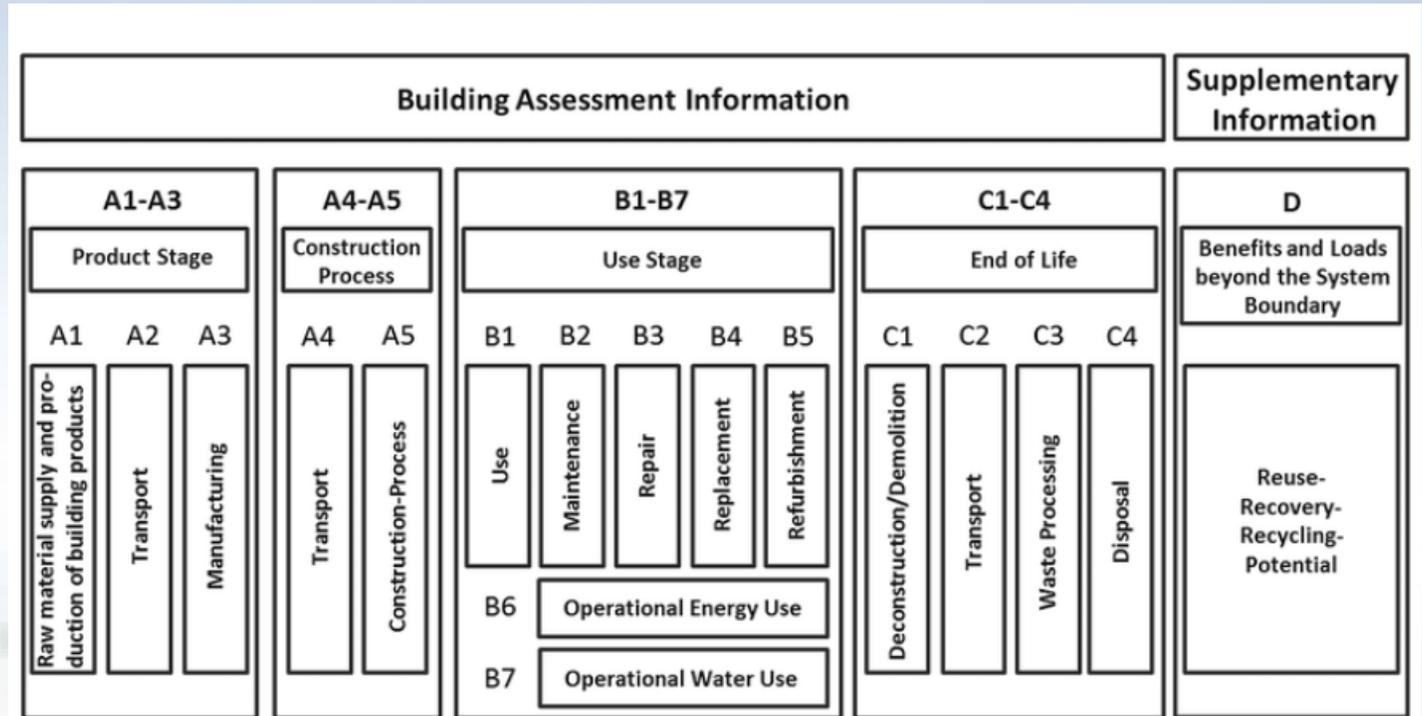
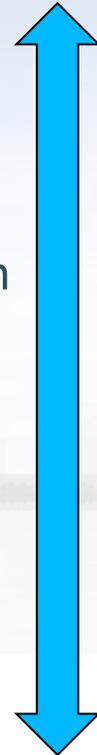
Standards relationships

EN 15804:2022-03:

Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products; German version EN 15804:2012+A2:2019 + AC:2021

EN 15978:2012-10:

Sustainability of construction works - Assessment of environmental performance of buildings - Calculation method; German version EN 15978:2011



System boundaries according to EN 15804/EN 15978

**This is the Base for the EU Building Assessment:
Level(s)**





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Digitalization of EPDs

Digitalization of EPDs

■ IBU offers the verification of Softwaretool

- Type I: LCA Tool
- Type II: EPD Tool
- Type III (in development): Agnostic Tool

■ Member of InData Network

- Development of ILCD+EPD Format
 - Digital Twin of EN15804 EPD
 - Compatible with ISO 22057

Data templates for the use of environmental product declarations (EPDs) for construction products in building information modelling (BIM)

- Widely used internationally

■ Digitalization of all EPDs

- Automatic creation of a Digital Twin of EPDs
- Transfer to ÖKOBAUDAT (optional)
- Additional publication in IBU.data and ECO-Portal (more and more request for APIs)
- Future Base for Digital Product Passport

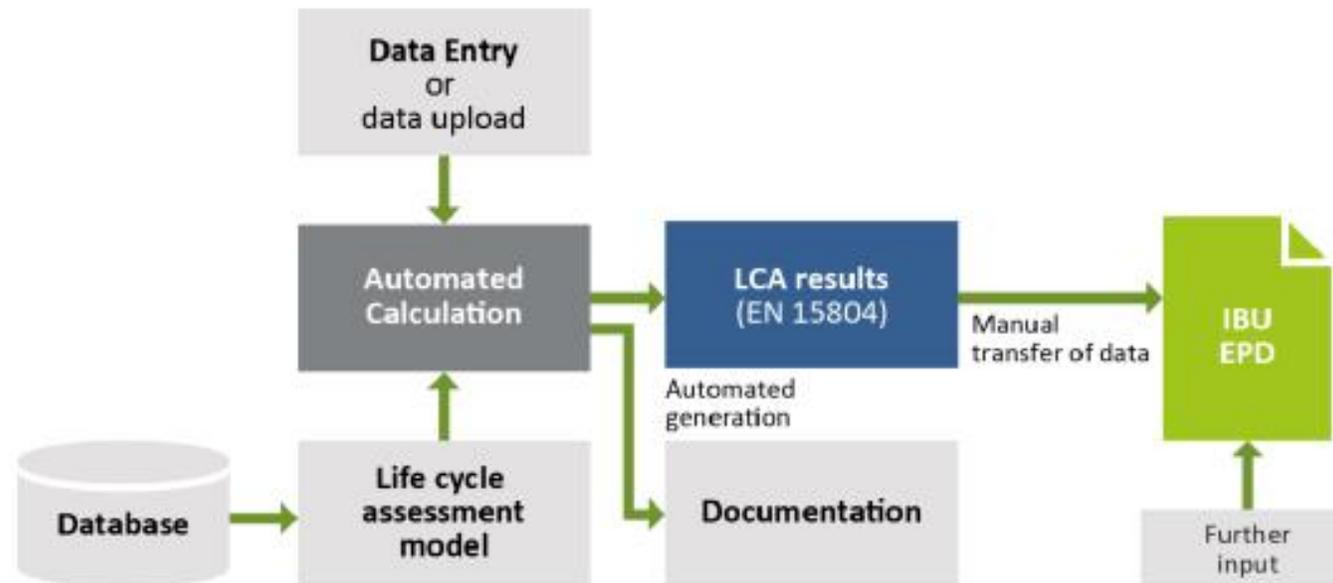
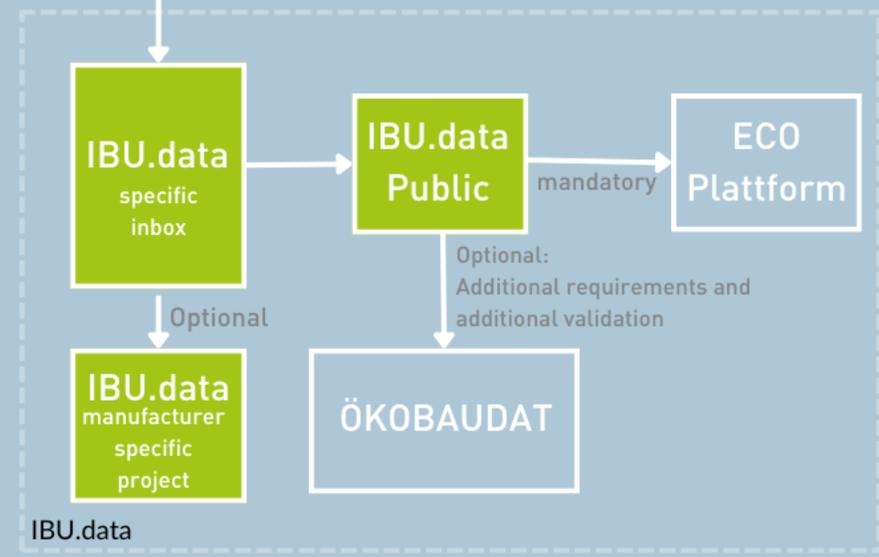
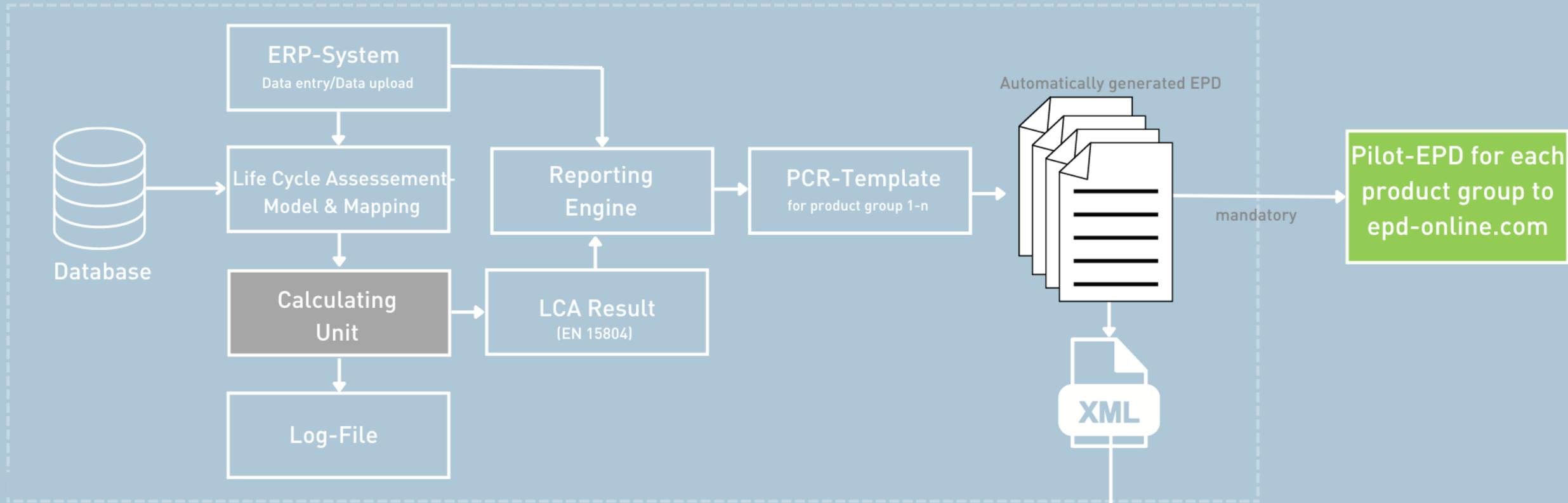


Fig. 3: Elements of an LCA tool (EPD verification type B)



Flowchart



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Dataformat

Facts about the Indata Network

- Funded in 2014 during the World Sustainable Building Conference 2014 in Barcelona
- InData Working Group consists of public and research institutions, EPD program operators and experts
- InData is an informal, non-profit working group
- InData's mission is to proactively support the harmonized digitalization of EPD and generic data for construction products according to EN 15804 in order to assess and improve the environmental performance of buildings and infrastructure.



Dataformat

Indata Network – main objectives



Open international data
network



Common quality rules



Common core information



Background database



Mandatory 3rd party
verification of data



Different types of data



EN 15804 compliant



Information in English



ILCD+EPD data format



Data free of charge

Facts about the ILCD+EPD Format

- Intention to make EPDs machine readable for Downstream Software
- All Updates are backwards compatible
- Currently implementation of full requirements of EN15804 for Upstream Software
- Currently implementation of full requirements of ISO22057 “EPD for BIM”
- Ongoing improvement (observation of DPP requirements)
- Open source and open license
- XML
- Convertible in other formats as .json or openEPD



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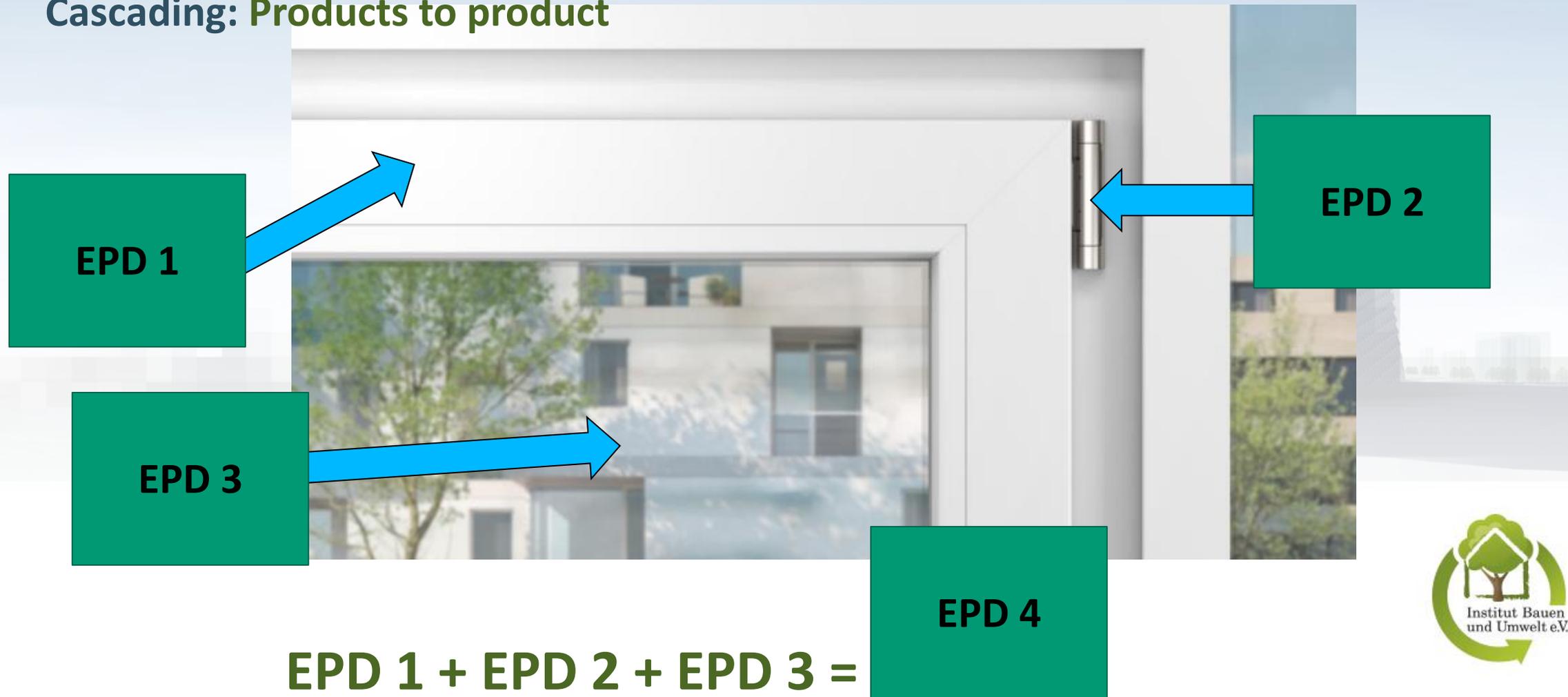


Applications

Use cases of digital EPDs – Product level

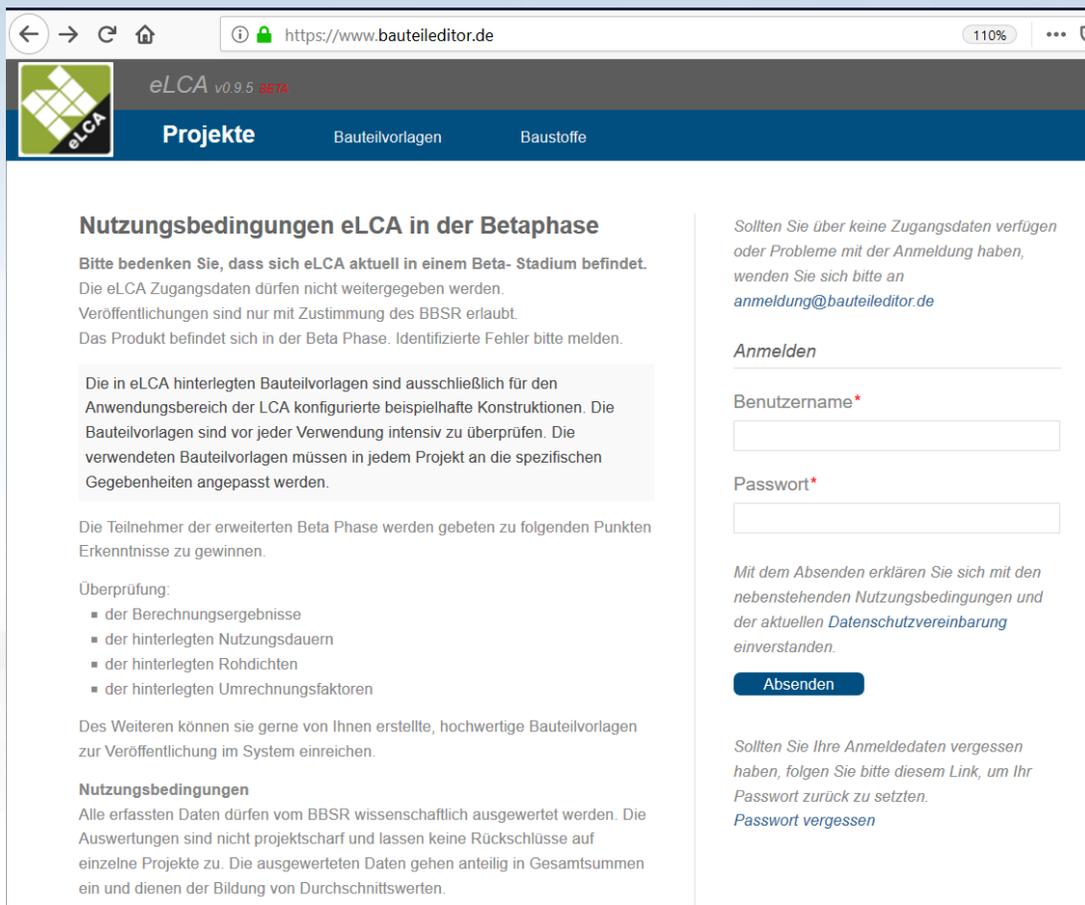
What is possible?

Cascading: Products to product



Use cases of digital EPDs – Building level

Tools for calculating (building) life cycle assessments (incomplete):



The screenshot shows the eLCA website interface. The browser address bar displays "https://www.bauteileditor.de". The page header includes the eLCA logo and navigation tabs for "Projekte", "Bauteilvorlagen", and "Baustoffe". The main content area is titled "Nutzungsbedingungen eLCA in der Betaphase" and contains several paragraphs of text regarding the beta phase, data usage, and user responsibilities. A login form is visible on the right side, with fields for "Benutzername*" and "Passwort*", and a blue "Absenden" button. Below the login form, there is a note about password recovery: "Sollten Sie Ihre Anmeldeinformationen vergessen haben, folgen Sie bitte diesem Link, um Ihr Passwort zurück zu setzen. Passwort vergessen".

Nutzungsbedingungen eLCA in der Betaphase

Bitte bedenken Sie, dass sich eLCA aktuell in einem Beta- Stadium befindet. Die eLCA Zugangsdaten dürfen nicht weitergegeben werden. Veröffentlichungen sind nur mit Zustimmung des BBSR erlaubt. Das Produkt befindet sich in der Beta Phase. Identifizierte Fehler bitte melden.

Die in eLCA hinterlegten Bauteilvorlagen sind ausschließlich für den Anwendungsbereich der LCA konfigurierte beispielhafte Konstruktionen. Die Bauteilvorlagen sind vor jeder Verwendung intensiv zu überprüfen. Die verwendeten Bauteilvorlagen müssen in jedem Projekt an die spezifischen Gegebenheiten angepasst werden.

Die Teilnehmer der erweiterten Beta Phase werden gebeten zu folgenden Punkten Erkenntnisse zu gewinnen.

Überprüfung:

- der Berechnungsergebnisse
- der hinterlegten Nutzungsdauern
- der hinterlegten Rohdichten
- der hinterlegten Umrechnungsfaktoren

Des Weiteren können sie gerne von Ihnen erstellte, hochwertige Bauteilvorlagen zur Veröffentlichung im System einreichen.

Nutzungsbedingungen

Alle erfassten Daten dürfen vom BBSR wissenschaftlich ausgewertet werden. Die Auswertungen sind nicht projektscharf und lassen keine Rückschlüsse auf einzelne Projekte zu. Die ausgewerteten Daten gehen anteilig in Gesamtsummen ein und dienen der Bildung von Durchschnittswerten.

Sollten Sie über keine Zugangsdaten verfügen oder Probleme mit der Anmeldung haben, wenden Sie sich bitte an anmeldung@bauteileditor.de

Anmelden

Benutzername*

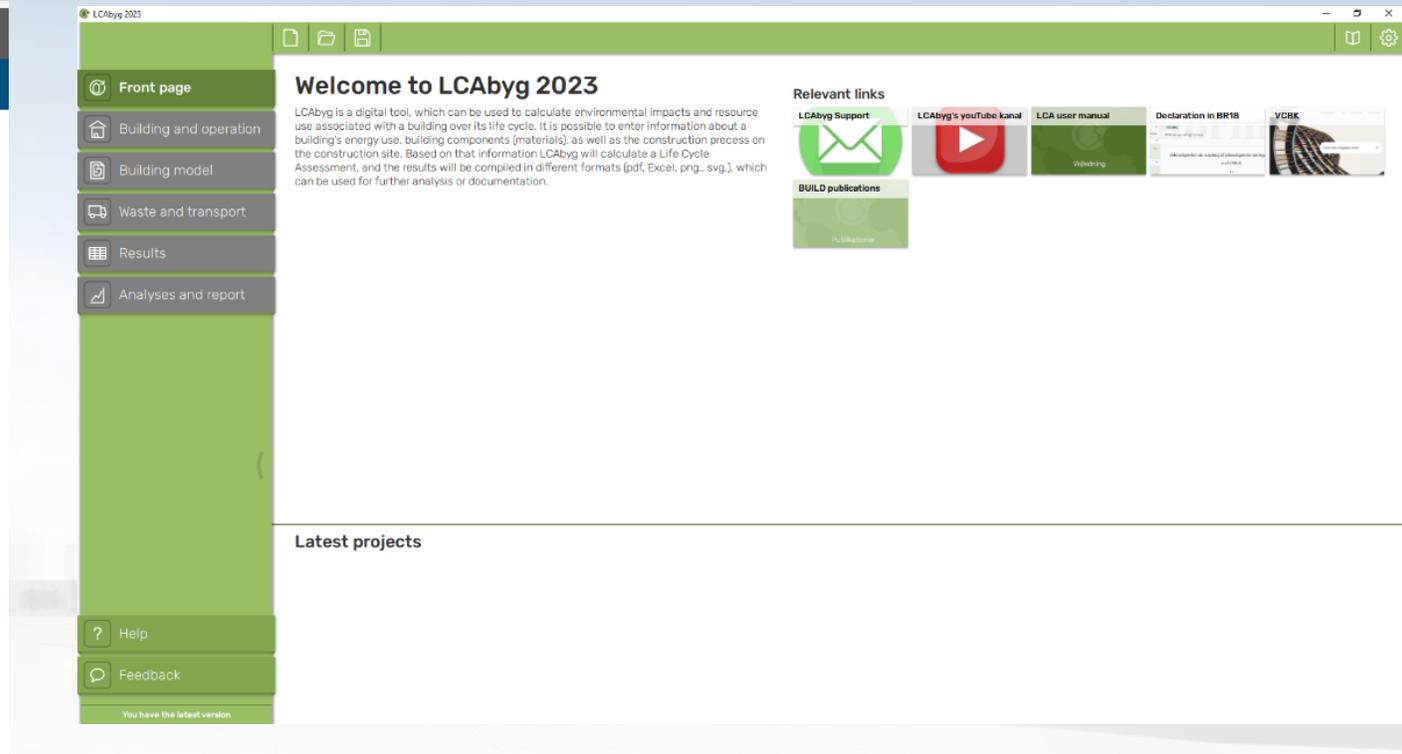
Passwort*

Absenden

Mit dem Absenden erklären Sie sich mit den nebenstehenden Nutzungsbedingungen und der aktuellen Datenschutzvereinbarung einverstanden.

Sollten Sie Ihre Anmeldeinformationen vergessen haben, folgen Sie bitte diesem Link, um Ihr Passwort zurück zu setzen. [Passwort vergessen](#)

Source: bauteileditor.com



The screenshot shows the LCAByg 2023 website interface. The browser address bar displays "LCAByg 2023". The page header includes the LCAByg logo and navigation tabs for "Front page", "Building and operation", "Building model", "Waste and transport", "Results", and "Analyses and report". The main content area is titled "Welcome to LCAByg 2023" and contains a paragraph of text regarding the tool's purpose and usage. A "Relevant links" section includes links for "LCAByg Support", "LCAByg's YouTube kanal", "LCA user manual", "Declaration in BBR18", and "VCBE". A "BUILD publications" section is also visible. Below the main content, there is a "Latest projects" section. At the bottom of the page, there are links for "Help" and "Feedback", and a status bar indicating "You have the latest version".

Welcome to LCAByg 2023

LCAByg is a digital tool, which can be used to calculate environmental impacts and resource use associated with a building over its life cycle. It is possible to enter information about a building's energy use, building components (materials), as well as the construction process on the construction site. Based on that information LCAByg will calculate a Life Cycle Assessment, and the results will be compiled in different formats (pdf, Excel, png, svg), which can be used for further analysis or documentation.

Relevant links

- LCAByg Support
- LCAByg's YouTube kanal
- LCA user manual
- Declaration in BBR18
- VCBE

BUILD publications

Publications

Latest projects

Help

Feedback

You have the latest version

Source: Aalborg University of Copenhagen (Department of the built environment - BUILD)



Further applications of EPDs - Outlook

What is coming?

New area of application: **Digitally prepared product information over the life cycle**



„EU Taxonomy“

COMMISSION DELEGATED REGULATION (EU) /...
supplementing Regulation (EU) 2020/852
Annex II 3.2. 4. “Use of primary raw material”

New area of application: **Legal requirements for product information over the life cycle**

„Green Public Procurement“

COMMISSION DELEGATED REGULATION (EU) 2021/2139
of 4 June 2021



„Green Claims Directive“

Proposed new law on green claims.





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„Take Away“

„Take Away“

Verified LCA or EPD Tools: Upscaling numbers, cheaper, solutions for associations or individual manufacturers

ILCD+EPD Format: ongoing developments, BIM ready, Open source and open license, convertible

Cascading: Products to Product

Environmental Product Declarations in digital form: More than nice to have





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Thank you for your attention