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Environmental Product Declarations for construction products: a review of availability, costs and trends in Germany

Summary

This joint report by the DGNB and BPIE is based on an evaluation of Ökobaudat, the German life cycle assessment (LCA) database, as well as interviews with leading German EPD programme operators, LCA service providers, and a survey of building material manufacturers. The results clearly point to a sharp increase in both demand for product LCAs and the number of such assessments being conducted. This growth is mirrored by increased capacity and expertise in the field, with more providers available for conducting LCAs and more in-house LCA expertise within companies. Furthermore, LCA data now covers a wide range of relevant product categories and continues to expand.

However, challenges remain, particularly in the availability of verifiers (individuals who validate EPDs), the effort required to gather data within companies and the associated costs. To address these issues and streamline processes, many companies and product manufacturer associations are turning to automated or partially automated tools, some of which are integrated into company software (EPD tools).

LCA results are often used by manufacturers for environmental communications and in many cases trigger internal product improvement processes. Customer demand – driven by building certifications, corporate climate goals and sustainability strategies – remains a key driver for preparing LCAs and EPDs. Nonetheless, this voluntary approach is increasingly giving way to mandatory compliance due to the forthcoming implementation of EU regulation, such as the Energy Performance of Buildings Directive and Construction Products Regulation.

This report shows that many market stakeholders and quality-assurance bodies in Germany are already well prepared through voluntary initiatives and recognise the benefits of EPDs. It also indicates that scalability for the broader integration and uptake of EPDs can be strengthened through various measures, such as EPD tools, sector EPDs and the development of EPD verifier capacities. However, supporting political frameworks, as exist in other countries, are also recommended for implementation in Germany in this context.

Background

The importance of the building sector for achieving climate goals has become a clear priority for both policymakers and the majority of building sector stakeholders. While past efforts were heavily directed at improving energy efficiency in building operations, in other words, saving energy when heating and cooling, the perspective has increasingly shifted to a life cycle approach. This broader view incorporates considerations such as how buildings are constructed or renovated, how products and materials are manufactured and transported, and what happens to these materials after their use. The life cycle perspective of buildings relies heavily on environmental data from construction products and environmental product declarations (EPDs). Only with these is it possible to draw up building LCAs that allow statements to be made about the carbon footprint or other environmental impacts of a building.

What are Environmental Product Declarations?

An Environmental Product Declaration (EPD) is a standardised and externally audited document that presents key information on the environmental impact of building materials and products, transparently and in accordance with uniform, industry-wide rules¹. The information contained in EPDs supports planners and clients in making environmentally oriented decisions regarding materials, products and manufacturers. They are also a key element in evaluating and optimising the environmental footprint of whole buildings over their entire life cycle with the help of a life cycle assessment (LCA) – from production and installation to use and recycling. In Germany, both generic LCA datasets on typical or average products, as well as manufacturer-specific EPDs, are made available in the publicly accessible Ökobaumat database and updated on a regular basis.

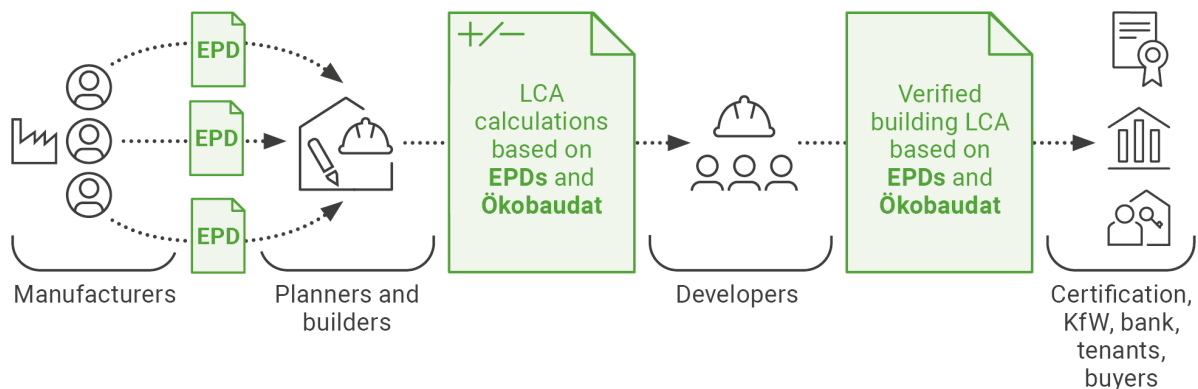


Figure 1: Overview of the general EPD process and use of EPDs by stakeholders (own illustration)

Life cycle assessments for buildings and building materials in the EU regulatory framework

The life cycle perspective has also found its way into the EU regulatory framework. With the new version of the EU Energy Performance of Buildings Directive (EPBD) issued in May 2024, the disclosing of life cycle greenhouse gas emissions, i.e. the results of a building LCA, will be mandatory

¹ Further information: German program operator [IBU](#); German [Ökobaumat](#) database; DGNB (2022) report on "Bauprodukte im Blick der Nachhaltigkeit" ([Building Products Through the Lens of Sustainability](#)); BPIE (2021): Addressing the hidden emissions in buildings. Status quo, gaps, and recommendations for EPDs and whole-life carbon; Gebäudeforum Klimaneutral: [Environmental Product Declarations \(EPDs\) \(topic page in German by the building forum climate-neutrality\)](#)

from 2028 onwards for newbuilds with a usable floor area greater than 1,000m²; from 2030 onwards this will be mandatory for all newbuilds. The EU Taxonomy Regulation, which defines environmentally sustainable economic activities, and the announced requirements for Green Public Procurement of buildings also call for the disclosure and limitation of life cycle greenhouse gas emissions.

For building materials, the new Construction Product Regulation (CPR) requires disclosure of product information on climate impacts in the form of global warming potential (GWP) from 2027 onwards. Furthermore, the proposal on the European Green Claims Directive also shows that verifiable LCAs must be provided for construction products that make claims about environmental performance.

Building LCAs in Germany

In Germany, conducting building LCAs and compliance with specified limit values for the life cycle GWP have been necessary since the introduction of building certifications (2008) and since 2022 for obtaining state subsidies for new buildings. Introduction into regulatory law has so far only been discussed. Other EU member states such as the Netherlands, France, Denmark and other Scandinavian countries² have already enshrined or announced this requirement in regulatory law, thus promoting the rapid development of market capacities (for example among LCA service providers), smoothly running EPD programmes and well-equipped and networked LCA databases.

Concerns and doubts in connection with building LCAs

This realisation of the need for a life cycle perspective and the regulatory developments announced at EU level and in the member states come at a time of crisis in the construction industry. Rising construction costs and interest rates, among other things, have sparked complaints from the sector over declining orders in the construction industry and, consequently from manufacturing companies. Additional costs and expenses are therefore difficult to justify for manufacturers, especially SMEs. Frequent reference is also made to a shortage of information and the challenges this brings, particularly for smaller companies, as well as the general lack of perceived benefit. Based on experience of the resistance encountered to the amendment of the 2023 *Gebäudeenergiegesetz* (Buildings Energy Act) in 2023, political decision-makers and market stakeholders have also repeatedly expressed fears that further requirements could only be implemented with a high level of bureaucracy. This discourages clients, builders and manufacturers from feeling positive about the subject of building LCAs and the principles upon which they are based.

Aim of this background paper and methodological approach

The aim of this publication is to provide evidence for the discussion on the challenges, costs and opportunities associated with the collection and provision of LCA data and EPDs in Germany – especially for companies manufacturing construction products. To achieve this, German construction product manufacturers were surveyed, the central German LCA Ökobaudat database was analysed, relevant regulations were reviewed and interviews were conducted with leading programme operators and LCA service providers.³ The survey of construction product manufacturers was sent to around 200

² BPIE (2023): Regulierung der Lebenszyklus-THG-Emissionen von Gebäuden. Empfehlungen für Deutschland ([Regulation of life cycle GHG emissions from buildings. Recommendations for Germany](#)); BPIE (2024): [How to establish WLC benchmarks: Insights and lessons learned from emerging approaches in Ireland, Czechia and Spain](#)

³ Interviewees: Stefan Zwerenz, German programme operator Institut Bauen und Umwelt (IBU); Julia Goerke, Sphera; Lisa Oberaigner, EMIDAT; Jacques Chevalier and Rachel Chermain, Alliance HQE GBC, INIES representatives; all interviews were conducted in July 2024

companies in July 2024. Of the 59 responses, 40 came from large companies, 11 from medium-sized companies and 8 from small and micro-enterprises.

Results of the review

Companies prepare EPDs mainly in response to customer demand

For over 85% of respondents, the motivation to provide EPDs stems from customer demand. More than two thirds cite their own climate targets or corporate strategies, 62% cite environmental communication and 60% are preparing for future regulation.

According to the respondents, EPDs are mostly (55%) requested by auditors or consultants in the context of building certifications. More than 20% of enquiries come from consultants on public construction projects, and direct enquiries from clients (building owners) are reported by 16% of respondents.

Costs and challenges in the life cycle assessment of building products

An analysis of responses from the survey showed that the costs for the most recent EPDs were between €5,000 and €10,000 for more than a third (38%) of the companies. 22% report higher costs (between €10,000 and €15,000) while 16% put costs at €15,000 to €20,000 or more than €20,000. In the interviews, the average cost of an EPD was also put at €8,000 to €12,000 and it was confirmed that this could be lower or higher depending on the complexity of the product and its processes.

The costs are made up of expenses and fees for:

- Preparation of the LCA by an LCA service provider (data collection, modelling and analysis and report for verification)
- Verification⁴
- Registration and other costs for EPD programme operators (e.g. annual licence fees, membership fees⁵)

The largest share is usually the cost of the LCA service provider. As there is strong market demand despite the increasing number of service providers, it can be assumed that this is also partly reflected in the prices for this service. 20% of the companies surveyed anticipate a reduction in costs and expenses, 37% expect costs and expenses to remain the same and 42% think that costs and expenses will rise significantly. Due to increasing demand and upcoming regulation, the interviewees recommend that building product manufacturers generally plan higher budgets and capacities for the LCA of their products.

One way to reduce costs is to prepare EPDs jointly through industry associations. The results – so-called sector- or industry-average EPDs – are used by 44% of the companies surveyed. Manufacturers belonging to an industry association use the same LCA results for their manufacturer-specific products, thereby reducing the costs per company. This does not allow them to stand out from their competitors with environmentally advantageous or innovative products, however. According to the interviewees, the overall trend is moving from industry-average EPDs towards product-specific EPDs from individual manufacturers.

⁴ The costs of an EPD are divided into two parts: 1. The one-off costs of verification and processing (flat rate of €2,000 per EPD), and the annual labelling fees, graduated according to the number of EPDs (€960 to €120), see [IBU website](#)

⁵ For example, at German EPD programme operator IBU, the costs of membership are graded in contribution groups and are based on the member's total turnover.

There is also a trend towards the use of EPD tools and automated processes. In all of the interviews conducted with LCA service providers and EPD programme operators, it was emphasised that things are moving fast in this area and that large companies in particular are increasingly using tools that help them prepare LCAs or EPDs for their products.

Of the companies surveyed, more than 40% already use their own tools and 10% use association tools that they share with other manufacturers. According to the interviewees, the costs of preparing EPDs are different with EPD tools than without tools. After a higher initial investment (a mid five-figure number up to a six-figure number per tool; for fully automated tools even higher), the costs per specific EPD are greatly reduced. Tools therefore pay for themselves above a certain number of EPDs generated. According to the interviewees, switching to a tool is worthwhile from eight to ten EPDs per year.

In the case of association tools, the degree of freedom and possibilities for mapping specific properties are generally lower than with company-specific tools. Nevertheless, tools are usually implemented in such a way that specific manufacturers can have their own LCAs for EPDs prepared for products. The cost savings are mainly achieved by not having to pay LCA service providers for their individual services, or by having an association pay for the usual tool licence fees.

Challenges include quality and underlying data

A challenge for everyone is the necessary high quality of LCA assessments. In recent years, there has also been a sharp rise in the number of LCA service providers due to increased market demand. Although there is no official quality standard for this service, the results of the LCA assessments are subject to quality assurance.

What challenges have you faced when creating EPDs?

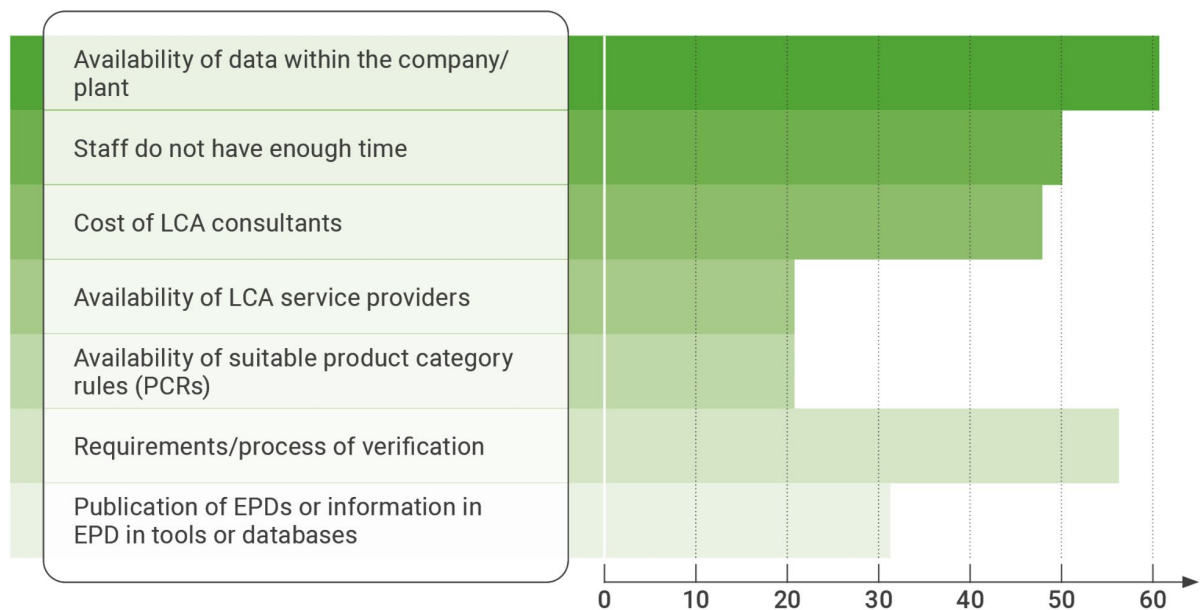


Figure 2: Survey results: challenges in the preparation of EPDs (own illustration)

EPD programme operators, i.e. the organisations that set the rules for EPDs and monitor their implementation, arrange for external reviews of the information disclosed in EPDs. These reviews are conducted by accredited EPD verifiers. An EPD can only be released for publication after a positive verification outcome. For the underlying LCAs required for EPDs, manufacturers typically request several offers for the service, with reputation and experience being important criteria for many. Nearly 50% of the surveyed companies cited the cost of consultants as a challenge, while 20% mentioned the limited availability of consultants as a difficulty when it comes to preparing EPDs. Occasionally, concerns are raised about high prices.

However, the companies surveyed cite the lack of available data within the company and the strict requirements of the verification process as the greatest hurdles to preparing EPDs. Employees not having enough time is also mentioned, and publication in databases or tools poses a challenge throughout the entire process.

In fact, the availability of qualified verifiers can be identified as a current challenge preventing the wider use of the EPD instrument on the market. For example, the Institut für Bauen und Umwelt (IBU), the largest EPD programme operator in Germany, currently works with 26 verifiers. According to the interviewee, a further ten are undergoing approval. As a result, the waiting time for verification of an EPD can range from three to four months. If companies increasingly aim to provide EPDs not just for part of their product portfolio – as is currently the case with 57% of the companies surveyed – but for all their products, as is the case with 28% of respondents, it becomes essential to accelerate all processes. This is especially to be recommended given the upcoming regulatory requirements described above. Only by addressing this bottleneck effect can delays in the provision of environmental information be avoided.

Another challenge for companies cited by 20% is the lack of specific regulatory documents (product category rules, PCRs) for their products. For companies that offer their products internationally, costs are often incurred because EPD programme operators apply their own rules and the formats differ, meaning that they then have to go through the described process multiple times. Even so, 83% of respondents also use EPDs in countries outside Germany.

The advantages of EPDs: environmental communication, a basis for optimisation and increased demand

A major advantage with EPDs is that the LCA results they provide can be used for environmental communication. No fewer than 75% of the companies surveyed use information to convey the benefits of their products to others.

The results of product LCAs can also be used to optimise processes and products. For example, they make it possible to identify the phases with the greatest environmental impact and offer opportunities to reduce material use, save energy and cut emissions. Over 58% of the companies surveyed reported that they use the LCA results internally: 32% of respondents have already initiated changes in production processes and 26% have at least used the LCA results as a trigger for internal discussions.

The companies surveyed also confirm that the provision of environmental information leads to higher demand for the product. 27% stated that products with EPDs are in greater demand. 44% are experiencing the same level of demand, while only just over 3% are seeing lower demand. However, as almost 60% of the companies surveyed have EPDs prepared for a selected part of their portfolio

and often focus on best sellers or environmental products, this cannot be taken as evidence of a link between improved environmental performance and higher demand.

Manufacturer information on the use and benefits of EPDs

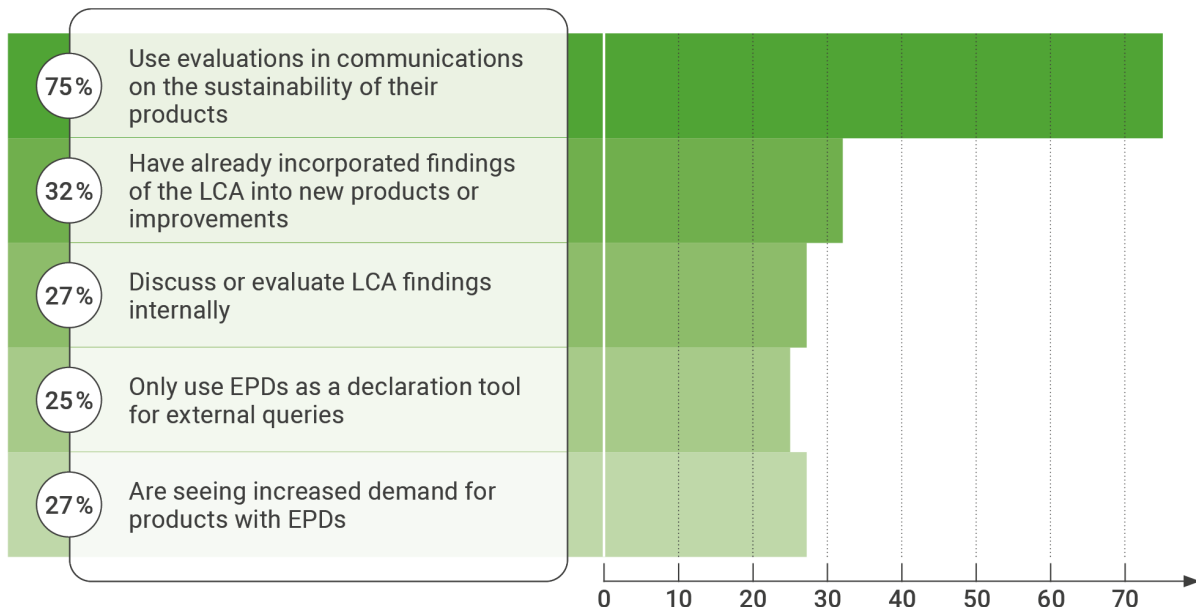


Figure 3: Survey result: Benefits and advantages of EPDs (own illustration)

Different data types for different use cases

When it comes to the number of EPDs in Germany, it is important to distinguish between different types:

- Verified manufacturer- and product-specific environmental product declarations (EPDs) referred to as *Specific* by Ökobaudat
- Verified sector- or industry-average EPDs that provide average or representative data independent of manufacturer, referred to by Ökobaudat as *Average*, *Representative* and *Template*

The interviews revealed a clear trend towards the increased provision of product-specific EPDs, i.e. declarations in which the environmental information relates to a product described in detail that is actually available. On the other hand, they showed an increase in the number of sector- or industry-average EPDs which present standardised, non-product-specific environmental data with average or representative environmental impacts for certain building materials. Both types have their place when it comes to calculating building LCAs. Furthermore, Ökobaudat – the LCA database for building products organised by the German Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR) – contains generic datasets that can be used for a large number of product groups regardless of manufacturer. These generic datasets are suitable for early planning phases or for supplementing building LCAs if no specific EPDs are available.

Sharply rising number of EPDs across Europe

At the beginning of 2024, there were over 23,000 EPDs worldwide that had been verified according to European standard EN 15804. With over 2,300 verified product-specific EPDs prepared by the largest German programme operator, IBU, Germany is in fourth place behind The International EPD programme established in Sweden, the French INIES programme and Norway's EPD Norge programme⁶. In 2017, there were only 3,600 EPDs for construction products worldwide; by 2020, there were already 7,300⁷. This means that the number has increased more than sixfold in just seven years⁸.

France – a role model?

France is the country with the most EPDs. Taken together, both LCA databases, the INIES and the ecopassport, provide almost 7,800 product-specific EPDs⁹. The INIES is a national database of building material EPDs, i.e. FDES declaration sheets (*Fiche de Déclaration Environnementale et Sanitaire*). The ecopassport is a database specifically for electrical products. The resulting datasets relevant to the building sector are directly available in the INIES database.

According to the database operators, the reason for the strong growth in EPDs is the introduction of mandatory life cycle assessments under RE2020 legislation. This law also requires environmental claims regarding building materials to be linked to proof of EPD data. This has also contributed to a sharp increase in life cycle assessment expertise in the country. The generic datasets are created by the French Ministry (approx. 1,200 datasets for each product group in the INIES database and approx. 600 further datasets for electrical products). Under French RE2020 legislation, the use of generic data in the context of a building LCA is subject to penalties. This creates an incentive to introduce product-specific datasets to the market.

In order to meet the demand for verification, the number of verifiers has doubled: 50 verifiers work at the INIES and 35 at ecopassport.¹⁰

In Germany, there are other EPD programme operators in addition to the IBU. This means that not all EPDs are verified and published by the IBU. Other programme operators also offer services, some with a very specific focus on certain product groups. Not all programme operators provide EPDs for the Ökobaudat. For this reason, it is difficult to quantify the exact total number of EPDs available in Germany. The EPDs published by the IBU can be categorised as product-specific EPDs as well as sector- or industry-average EPDs.

Data in the Ökobaudat reflects construction practice; the promotion of sustainability is an important driver for life cycle assessments

The Ökobaudat provides both generic datasets and datasets of verified, product-specific and average or typical EPDs. Of the approx. 2,500 datasets available in the database that cover the manufacture of

⁶ Source: ECO Platform: [EPD Facts & Figures](#) (according to the interviewees the tool-generated EPDs are not included in this overview)

⁷ Source: Construction LCA (2020): [Construction LCA's 2020 Guide to Environmental Product Declarations](#)

⁸ Source: Construction LCA (2020): [Construction LCA's 2017 Guide to Environmental Product Declarations](#)

⁹ Source: inies (2024): [baromètre 2024](#) (p. 3)

¹⁰ Source: Interview Jacques Chevalier & Rachel Chermain (Alliance HQE GBC, INIES representatives), 1 July 2024

building materials, 43% relate to specific EPDs, 24% are average EPDs or representative, template-based sector EPDs¹¹, and an additional 33% are generic datasets.

The generic data is updated annually, with all datasets recalculated using the latest background data (e.g. with the current energy mix). In addition, the documentation of the datasets is supplemented and updated as needed and corrections are made where necessary. New datasets are also added, while outdated ones are removed.

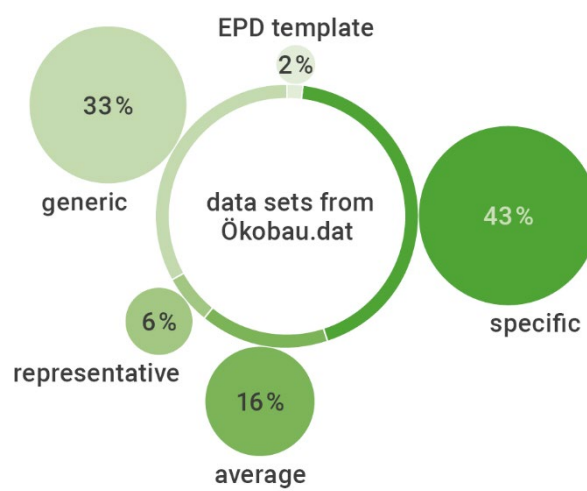


Figure 4: Types of datasets in the Ökobaudat, September 2024 (own illustration)

EPDs in the sustainability funding with the Sustainable Building Quality Seal (QNG) seal

To prove that the requirements for the Sustainable Building Quality Seal (QNG) – the basis for obtaining KfW subsidies – are met, the LCA of a building must show that limit values for greenhouse gas emissions and primary energy are met over the life cycle. The LCA method according to QNG is also an element of DGNB certification, which can be used as the basis for obtaining the QNG seal. The funding programme has been extremely well received by market stakeholders and a large number of QNG seals have already been issued; approx. 1,700 applications (as of September 2024) have been submitted to the DGNB. Data from other assessment systems is not available. The adoption of the QNG method for the LCA of buildings is also being discussed as a basis for implementing the LCA requirement under the new EPBD. With regard to EPDs, however, the current situation (November 2024) is that only generic data may be used as part of the QNG method for obtaining funding (and not EPDs). A so-called *Rechenwerttabelle*, a table providing a defined selection of generic data, has been made available for this purpose. Currently, the use of manufacturer- or product-specific datasets is not permitted. Although a change to this rule was announced some time ago, it has not yet been implemented. However, with the increase in product-specific datasets and conversion of the *Rechenwerttabelle* to a new data format¹², it is expected to be possible to obtain proof of product-specific information from spring 2025 onwards. This would be a very important driver for the increased use of EPDs and suggests that a sharp rise in specific EPDs can be expected.

¹¹ The 24% is made up of *average* (16%), *representative* (6%), *template* (2%).

¹² Conversion to DIN EN 15804-A2-compliant datasets; see [Begleitdokument Ökobilanzierung – Rechenwerte 2023 \(accompanying document LCA – calculation values\)](#)

With regard to the question of whether sufficient coverage is given to the product groups in Ökobaudat in order to conduct a complete LCA on a building, it appears that currently, building product groups normally used in construction are well represented in the database¹³. Existing gaps, e.g. in technical building services and more differentiated district heating data, are currently being closed. On the one hand, the EPDs covering the technical building services are gaining attention, particularly within the framework of the new Ecodesign Regulation¹⁴. The European Commission can, through delegated acts, determine which product categories must provide EPDs. At the same time, generic datasets for the technical building services (and district heating) are currently being developed for Ökobaudat. Additionally, datasets for civil engineering and landscaping are also being generated. It should be noted, however, that innovative or particularly environmentally friendly products often lack both generic data and EPDs.

According to the interviewees, small to medium-sized companies with EPD data are now well represented by Ökobaudat. No analysable data is available in this regard.

Manufacturing data in Ökobaudat 2023

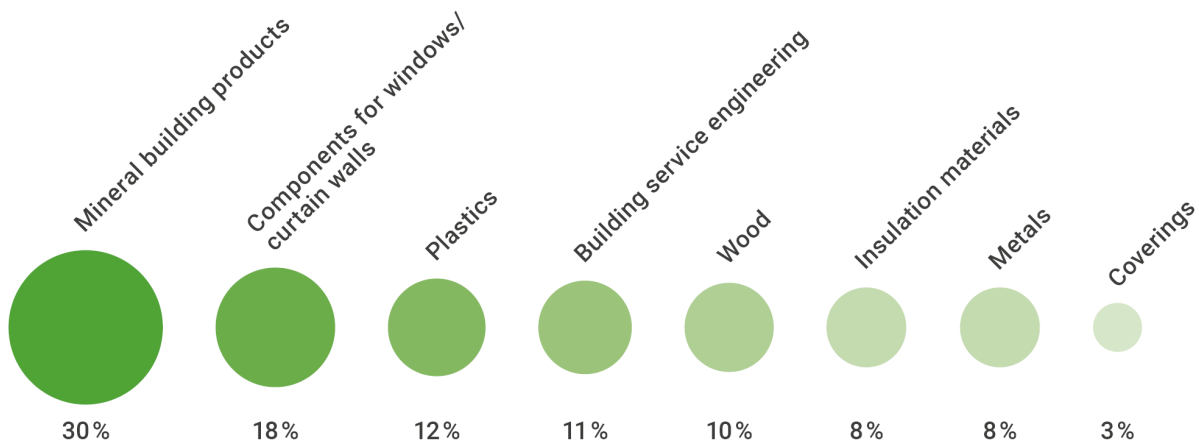


Figure 5: Overview of coverage of product groups in the Ökobaudat (internal research, calculation and illustration based on Ökobaudat 2023)

Environmental product information is increasingly becoming mandatory

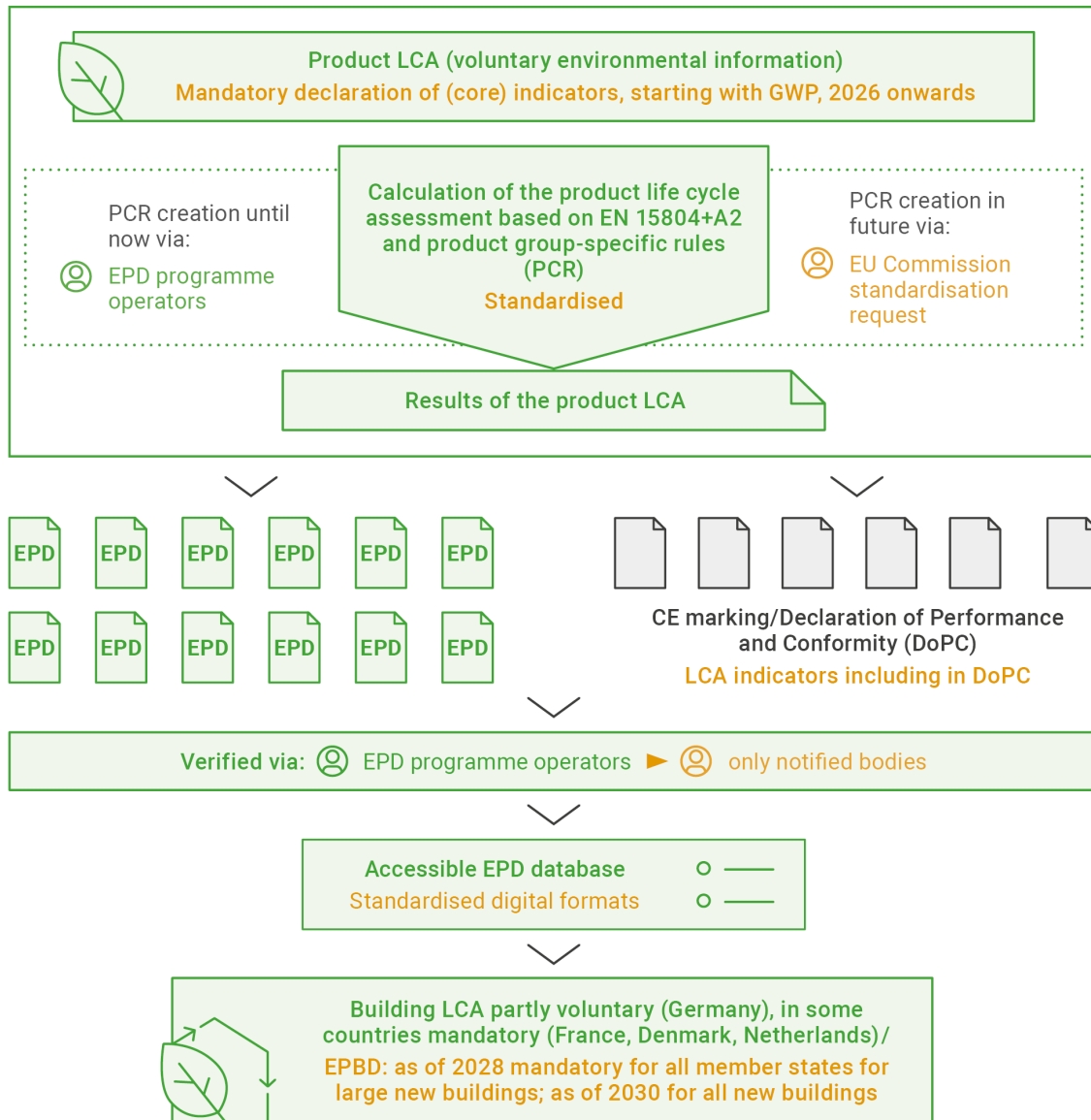
With the recast of the Construction Product Regulation (CPR) of April 2024, the provision of environmental product information for standardised product groups will transition from voluntary to mandatory. The harmonised European standards (hEN) will gradually be revised, mandating the disclosure of environmental core indicators in the Declaration of Performance and Conformity (DoPC) as part of the CE marking. For products categories with an updated hEN, GWP will be the first indicator required for reporting, probably starting in early 2026.¹⁵

¹³ See Figure 5; detailed analysis in the appendix

¹⁴ The [Ecodesign for Sustainable Products Regulation](#) (ESPR) has been in force since July 2024

¹⁵ Article 96 states: 12 months after the regulation comes into force; based on current information (November 2024), publication in the EU Official Journal is still planned to take place by the end of the year.

● voluntary ● mandatory (for the product categories under CPR*)



*for product groups not covered under the CPR, as well as generic data, the 'voluntary approach' to EPD generation will remain unchanged

Figure 6: Standardisation/verification of environmental product information under the CPR (own illustration)

This means that for products standardised under the CPR, new stakeholders will be added to the process of providing environmental product information and overall the procedure will become far more standardised. Up to now, the product category rules (PCR), which ensure that the same requirements apply to all products in a category, have been defined voluntarily by the programme operators with the support of experts.

In future, defining the rules for PCR for products standardised under the CPR will fall under the responsibility of the Product Technical Committees (p-TCs), as is the case with other CE-relevant information (e.g. for fire testing). This will be carried out through standardisation cooperation or "standardisation requests" submitted by the European Commission based on the underlying EN 15804 standard. This stipulates that PCRs must be submitted for specific product groups. This will gradually be implemented for all product groups that fall under the CPR, so that the PCRs will be harmonised across Europe in the coming years under pressure from the European Commission.

Verification, which is currently carried out by EPD programme operators, will then also be carried out by notified bodies. Programme operators are therefore endeavouring to obtain recognition as notified bodies from the EU in order to be able to officially carry out conformity checks.

Consequently, the process is quite familiar to manufacturers: similar to the approach taken with testing and verification (e.g. for fire safety), the calculation of GWP values will be based on defined standards, come from credible sources and be certified (via the notified bodies). This means the main difference compared to established test procedures is that rather than checking measurements produced in a laboratory, GWP values are based on calculations. This is a familiar process with previous CE labelling in areas such as compressive strength testing. Here, too, the method of preference was calculation rather than testing.

As far as databases and background data are concerned, the requirements for these, too, are being standardised. This is ensured by the CPR acquis process that comes hand in hand with construction products regulation, a permanent accompaniment to standardisation. The requirements affecting databases are currently being defined (as of September 2024) and laid down as part of standardisation.

Due to the transition period – during which standardisation for the different product groups is being implemented – and the fact that not all products will fall under the CPR, the voluntary and the mandatory approaches will co-exist for at least the next decade.

The ECO Platform – a multi-stakeholder, non-profit association – serves as an umbrella organisation for EPD Programmes. The ECO platform has laid down common rules (ECO Platform Standards) for generating and verifying EPDs, which all ECO EPD Programmes are required to follow and be audited against. With the changes expected under the CPR, its role is to ensure consistency of voluntary data with the mandatory data from the DoPC. This is important for the transition period, as long as not all hEN standards are updated under the new CPR, as well as for non-standardised products and for other data types (esp. generic data), for which provision of environmental product data will remain voluntary.

Recommendations to policymakers: prepare the market and provide a clear framework

- **Establish funding programmes for product LCAs.** A new funding programme for preparing LCAs for product-specific EPDs could specifically address and address shortfalls in the existing data situation. This should be aimed at product groups for which EPDs are not yet available (see example in the Netherlands¹⁶) as well as innovative and sustainable building materials. It might also be possible to provide SMEs with targeted support in producing product- and manufacturer-specific EPDs. This should also include the funding of LCA tools for SMEs, for example through initiatives for mid-sized companies. Having the possibility to use tools could demonstrably reduce costs for individual companies and accelerate the preparation of EPDs.
- **Adapt the assessment basis of funding for building LCAs.** The building LCAs funded under the KfW programme for climate-friendly new builds (KFN) could be adapted and expanded so that assessments no longer rely solely on the *Rechenwerttabelle*, providing generic data. Instead, funding should also be allowed if use is also made of LCA results that relate to how the buildings were actually realised. “As-built” models, i.e. LCAs calculated on the basis of product- and manufacturer-specific EPDs, are used for this purpose.
- **Introduce mandatory disclosure or limit values for building LCAs.** In view of the forthcoming implementation of the EPBD, in which disclosure of the life cycle global warming potential for newbuilds will become mandatory, it makes sense to announce and introduce disclosure obligations or limit values at an early stage. Experience from other EU member states, which have already enshrined this in regulatory law, shows that this step sparks enormous momentum in the market and contributes to the development of capacity and expertise. This can also be done gradually so as not to overburden the market, but with a clear roadmap for gradual tightening in order to meet the climate targets.
- **Provide incentives for LCAs of smaller residential and non-residential buildings.** In order to also promote early testing in this segment (the EU Energy Performance of Buildings Directive, for example, initially applies to buildings > 1000 m²), it could help to introduce incentives in the form of accelerated building permit processing, to lower requirements or to reduce tax burdens¹⁷.
- **Also think about and prepare building LCAs for renovations.** Renovating existing buildings will be vital in the coming years in order to achieve the climate goals, as will converting the building stock sustainably in ways that preserve value. As part of the implementation of the EPBD, Germany will develop a national building renovation plan, which will include milestones towards a net-zero building stock. Given the expected increase in renovation rates, it is thus essential to use climate-friendly building products and materials during renovations and make positive climate impacts verifiable, including through EPDs. Consequently, requirements and policy frameworks should also be prepared for LCAs in existing buildings.

¹⁶ In April 2023, the [White Spots Project](#) supported the preparation of EPDs in the third round with funding of up to EUR 2,500.

¹⁷ See requirements paper ["Nachhaltiges Bauen und Lebenszyklusbetrachtung stärken"](#) (Strengthening sustainable building and life cycle assessment), DGNB and other associations (2024)

Recommendations for market stakeholders: develop LCA expertise and resources

- **Further expand LCA expertise and resources.** In order to meet the demand from customers and investors, and comply with future regulations such as the Construction Products Regulation, it is important for all manufacturing companies, planners and contractors not only to acquire and expand their expertise in the field of LCAs, but also to make corresponding resources available. It is also important to take into account the trend towards digitalisation, to use suitable tools and to identify interfaces.
- **Offer training and accelerate the learning curve.** Experienced market stakeholders should actively share their experience with parties. Examples of this would be supplier training, developing expertise across networks, or dialogue among associations focussing on finding solutions. It is also important for all stakeholders to improve communication of the benefits of LCAs – opportunities to improve processes and products, marketing tools, fulfilment of customer demand – in the industry, within associations or other networks.
- **Use association tools to reduce costs.** To reduce the cost of developing in-house LCA tools for individual companies, sector associations and industry groups can initially invest in association tools. This would allow smaller firms to gain access to professional LCA tools.
- **Strengthen the verification of LCA tools.** Programme operators should address the foreseeable shortage of verifiers of LCAs by offering appropriate qualifications and formulating clearer rules or templates for the verification of necessary background reports. On the other hand, they should expand expertise and offerings for verifying LCA tools.
- **Close gaps in product category rules (PCRs) for EPDs.** As the lack of PCRs costs time and money, EPD programme operators should be more proactive in working with industry stakeholders to create PCRs that will provide even better coverage of the market.
- **Draw up guidelines for companies for the collection of company data in order to save time and money.** Where PCRs are being developed, associations can be called upon to develop and provide suitable questionnaire templates for the company data ("foreground data") required for EPDs. The EPD programme operators could also publish such standard questionnaires as part of templates for existing PCRs. This would make it much easier for companies to collect the necessary data internally and ensure that LCA service providers have access to a satisfactory body of data. Product Technical Committees, in which industry stakeholders are involved, could also play a role in the future.
- **Take action.** Whether due to rising demand or upcoming regulation, companies have no choice but to get to grips with the subject of product LCAs. They must therefore act quickly to build up expertise and set up and improve their own processes.

Key messages and summary of the analysis concerning EPDs and building LCAs in Germany

- Customer demand for Environmental Product Declarations (EPDs) in the building industry is primarily driven by the growing importance of building certifications. This trend is further reinforced by implementation of the EU Energy Performance of Buildings Directive (EPBD), which includes mandatory disclosure obligations. As a result, manufacturers are increasingly motivated to provide EPDs, and this demand is expected to grow.
- Expertise and consulting services both for building LCAs and product LCAs have increased considerably in recent years.
- The availability of EPDs for building materials has also risen sharply in recent years.
- The increasing demand for EPDs has led to organisational challenges in preparation and testing processes, including prolonged waiting times for certification.
- EPDs are no longer provided exclusively by large companies; smaller firms are also entering the field.
- Investing in EPD tools is increasingly seen as worthwhile for those preparing multiple EPDs. Although these tools require significant upfront investments, they significantly reduce the cost of producing individual EPDs over time.
- LCA data is now widely available for many conventional construction product categories, with availability expanding continuously. However, data for innovative products is persistently lacking.
- LCA results are increasingly being used by manufacturers in environmental communication, often triggering internal product improvement processes.
- The changing regulatory framework, including the revised Construction Product Regulation and EPBD, is driving a shift from voluntary to mandatory environmental product information. While many of the associated processes are familiar to manufacturers through CE labelling, companies must adapt to meet the new requirements.
- The early adoption of LCAs for all new buildings, as seen in countries such as France or Denmark, in line with the EPBD, is expected to drive significant demand in the number of EPDs and, consequently, for LCA expertise among market stakeholders.

Authors: Dr. Anna Braune, DGNB e.V.; Lisa Graaf, BPIE

Reviewers: Zsolt Toth, BPIE

About the German Sustainable Building Council (DGNB)

Founded in 2007, the DGNB is now Europe's largest network for sustainable building with around 2500 member organizations. The aim of the association is to promote sustainability in the construction and property industry and to anchor it in the consciousness of the general public. With the DGNB certification system, the independent non-profit organisation has developed a planning and optimization tool for evaluating sustainable buildings and districts that helps to increase real sustainability in construction projects. The DGNB system is based on a holistic understanding of sustainability that takes equal account of the environment, people and economic efficiency. In addition, around 10,000 people in around 60 countries have already been qualified as experts in sustainable building via the DGNB Academy training and further education platform.

Further information can be found at: www.dgnb.de

About BPIE – Buildings Performance Institute Europe

BPIE (Buildings Performance Institute Europe) is a European not-for-profit think tank with a focus on independent analysis and knowledge dissemination, supporting evidence-based policymaking in support of a carbon-neutral building stock. BPIE's work focuses on the evaluation of policy instruments and programmes and the identification of technological solutions and social innovations to reduce energy consumption and promote renewable energy in the European building sector. BPIE also emphasises the importance of healthy homes and the need for a life cycle approach in order to embed sustainability along the entire value chain. In addition to its headquarters in Brussels, since 2014 BPIE has maintained a further office in Berlin, resulting in a particular focus on building-related policy development in Germany.

Further information can be found at: www.bpie.eu

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This document is based on a translation of the original German version with selective adaptations.

Appendix

Datasets in the Ökobaudat (2023) for the production phase (internal evaluation)¹⁸

COVERINGS	Coverings	81
INSULATION MATERIALS	Insulations	211
BUILDING SERVICE ENGINEERING	Building technology	295
	PV systems	8
WOOD	Wood floors	50
	Wood-based materials and modified wood	106
	Solid wood	79
COMPONENTS FOR WINDOWS/CURTAIN WALLS	Windows and curtain-wall facades	408
	System components	54
PLASTICS	Synthetic floor coverings	98
	Synthetic roofing membranes	53
	Synthetic sealing compounds, films, fleeces, profiles, pipes	159
METALS	Aluminium components	16
	Lead components	2
	Stainless steel components	23
	Copper components	22
	Surface treatment and metal coating	8
	Steel and iron components	128
	Zinc components	4
MINERAL BUILDING PRODUCTS	Asphalt	12
	Binders	128
	Mortar and concrete	310
	Pigments	3
	Bricks and elements	291
	Aggregates	48
OTHERS	Drinking water	2
TOTAL		2599

¹⁸ See [categories in Ökobaudat database](#)