



**WORLD
GREEN
BUILDING
COUNCIL**

EPBD policy briefing

Life cycle global warming potential policy implementation in the EU

**Recommendations for Member States
and the European Commission
for the preparation and overseeing
of life cycle GWP policy**



Introduction

The EU buildings sector is on the cusp of change

Over the past few years, Europe's buildings and construction sector has become increasingly familiar with the concept of 'Whole Life Carbon' (WLC) or 'life cycle global warming potential' (life cycle GWP).

The built environment's WLC emissions account for around 40% of the EU's total CO₂ emissions (Ramboll, 2023). Yet until recently, few national governments had introduced binding measures to report on or limit buildings emissions using a whole life cycle approach. This changed from 2022 onwards, with national governments including Denmark and France leading the way in introducing mandatory reporting and limit values for life cycle GWP (read more in [WorldGBC's case study report on life cycle GWP policy implementations in Europe](#)).

Even more consequentially, the [Energy Performance of Buildings Directive](#) (EPBD), revised in 2024 to deliver on the EU's climate targets, introduced dates by which Member States must ensure that life cycle GWP is calculated and disclosed for new buildings. National governments will also need to publish roadmaps with life cycle GWP targets and limit values.

This means that EU Member States should now be taking measures to pave the way for life cycle GWP policy at the national level. These preparatory measures include consulting with the construction sector, raising awareness and training, developing data architecture, and formulating legislation.

This briefing aims to establish recommendations for national governments preparing to introduce life cycle GWP policy measures. It also includes recommendations for the European Commission in its role in overseeing and guiding this transition.

In particular:

1. Construction sector capacity building and engagement
2. Databases and data collection
3. How to encourage compliance



EU Member States should now be taking measures to pave the way for life cycle GWP policy at the national level.

Key terminology

Embodied carbon: Carbon emissions associated with materials and construction processes throughout the whole life cycle of a building or infrastructure. Embodied carbon includes: material extraction and upstream production (A1), transport to manufacturer/factory (A2), manufacturing (A3), transport to site (A4), construction and installation processes (A5), use phase (B1), maintenance (B2), repair (B3), replacement of building components (B4), renovation (B5), deconstruction (C1), transport to end-of-life facilities (C2), processing for reuse, recovery or recycling (C3) and disposal of waste (C4). Benefits and loads from product reuse, material recycling and exported energy / energy recovery beyond the system boundary (D) should be reported separately according to EN 15978 and associated standards.

Operational carbon: Greenhouse gas emissions associated with the energy consumption of the technical building systems during the use and operation of the building (B6).

Life cycle global warming potential (GWP) or Whole Life Carbon: An indicator that quantifies the global warming potential contributions of a building caused by carbon emissions along its full life cycle, encompassing both operational and embodied emissions.

The role of WorldGBC

The World Green Building Council (WorldGBC) and our network of Green Building Councils (GBCs) have been campaigning for the introduction of life cycle GWP policy for many years through our [#BuildingLife](#) programme, which aims to deliver on a climate-neutral Europe by 2050 by working to eliminate the whole life carbon impact of all buildings.

Now that the EPBD has introduced policy measures in Europe, we have begun a new phase aimed at helping countries implement the EPBD as practically, effectively and efficiently as possible. Other [WorldGBC publications](#) in this workstream include factsheets and national case study reports on Minimum Energy Performance Standards (MEPS) and life cycle GWP.

This briefing draws on the best practice evidence from existing national implementations of life cycle GWP policy, as well as from research and industry-led projects like data accelerator [INDICATE](#).

Background

How the EPBD aims to address life cycle GWP emissions

The revised EPBD introduces new provisions which Member States must transpose into their national frameworks by May 2026.

The EPBD requires Member States to ensure that life cycle GWP is calculated and disclosed via Energy Performance Certificates (EPCs) with the following timelines:

- as of 2028 for all new buildings with a useful floor area larger than 1,000m²
- as of 2030 for all new buildings

Disclosure of life cycle GWP for all new buildings with a useful floor area larger than 1,000m²

2028

Disclosure of life cycle GWP for all new buildings

2030

The text states that this calculation of life cycle GWP should follow Annex III of the EPBD, which includes the following requirements:

1. It should be communicated as a numeric indicator for each life cycle stage expressed as kgCO₂e/m².y (of useful floor area), averaged for one year of a reference study period of 50 years.
2. Data selection, scenario definition and calculations should be based on European Standard EN 15978 (see chart on p4).
3. The scope of building elements and technical equipment should be as defined in the Level(s) common EU framework (indicator 1.2).
4. Where a national calculation tool or method exists, or is required for making disclosures or for obtaining building permits, that tool or method may be used to provide the required disclosure. Other calculation tools or methods may be used if they fulfil the minimum criteria established by Level(s).
5. When available, life cycle data regarding specific construction products calculated in accordance with the revised Construction Products Regulation (CPR) should be used.

The European Commission is to adopt a Delegated Act by the end of 2025 (Article 7 (3)) to establish an EU-wide framework for national calculation of life cycle GWP to achieve climate neutrality.



From the outset, there should be as much convergence as possible between national measures and the European Commission's efforts on life cycle GWP.

At the national level, Member States will need to publish life cycle GWP roadmaps by the start of 2027, including targets and limit values for new buildings from 2030. Roadmaps should incorporate how the limit values can be tightened over time, and how they might differ between different climatic zones and building typologies.

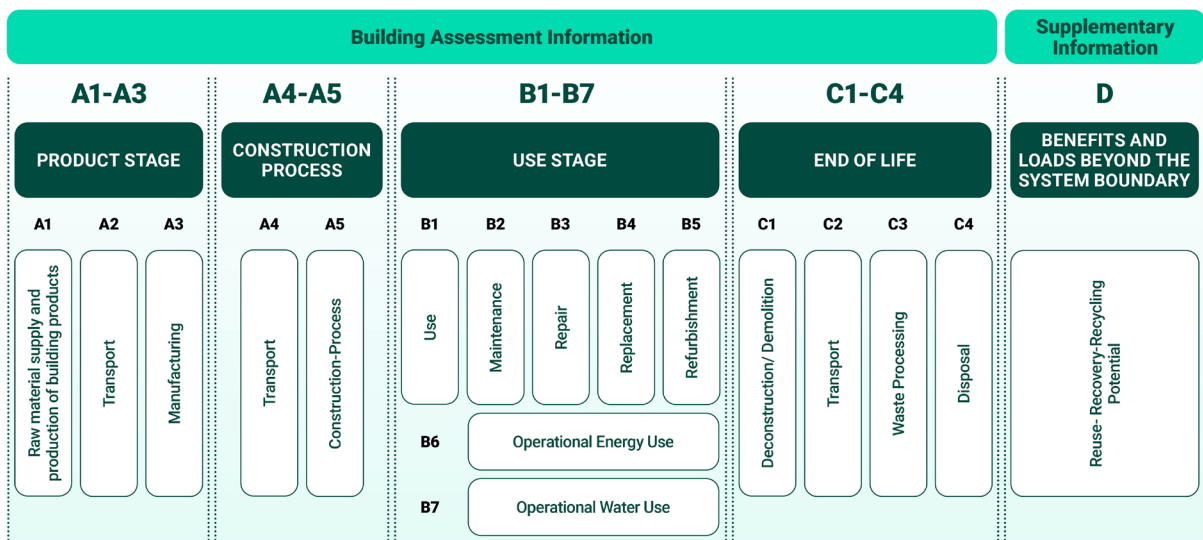
This timeline means Member States need to begin work on capacity building together with their national construction sectors as soon as possible, and ensure that, from the outset, there is as much convergence as possible between national measures and the European Commission’s efforts on life cycle GWP. We have provided recommendations in this briefing as a useful foundation for this activity.

How do we define life cycle GWP?

Life cycle GWP is an indicator that quantifies the global warming potential contributions of a building caused by carbon emissions along its full life cycle, encompassing both operational and embodied emissions.

These emissions cover the manufacturing, transportation, construction, operation and end-of-life phases of buildings, and calculating them constitutes a first step towards increased consideration of the whole life cycle performance of buildings within a circular economy.

WLC can be broken down into modules which summarise the different stages of a building’s life cycle, as defined in the European standard EN 15978 (see diagram below).



European standard EN 15978 breaks down the life cycle of a building into 17 phased modules.

Previous WorldGBC recommendations for life cycle GWP reporting

In our March 2023 [policy briefing on Whole Life Carbon Reporting and Targets](#), WorldGBC made the following recommendations on harmonising and standardising life cycle GWP reporting; defining the physical scope for reporting; and constructing life cycle GWP targets:

- 1. Harmonisation and standardisation:** Life cycle GWP reporting should cover EN 15978 modules A1–A5, B1, B4, B5, B6, C1–C4 and D (with D reported separately).
- 2. Physical scope of WLC reporting:** Life cycle GWP reporting should use the table of building elements on pages 25–26 of [Level\(s\) User Manual 2](#) as the basis for defining the physical scope of a building.
- 3. The architecture of life cycle GWP targets:** Member States should establish overarching life cycle GWP targets for buildings, as well as separate operational and embodied carbon targets. Member States should also conduct national grid intensity forecasts to inform these targets.

These recommendations are justified in detail in the briefing, which was consulted on with our Europe Regional Network of over 20 Green Building Councils and seven regional partners.

We recommend that the European Commission take these points from our Whole Life Carbon policy briefing on board in the development of the EU-wide framework for national calculation of life cycle GWP under the upcoming Delegated Act.



1. Construction sector capacity building and engagement

Understanding of life cycle GWP, and potential measures to reduce it, is by no means uniform across Europe. There is therefore great scope for Member States to learn from each other and draw on the experiences of countries that have already introduced mandatory life cycle GWP measures. A common framework based on Level(s) for example, will be critical to limit the fragmentation of the European market and encourage the comparability and innovation needed to scale up low-carbon building solutions.

An important step in implementing life cycle GWP policy is a process of familiarisation with the national construction sector. For policies to be understood and accepted by the stakeholders and developers who will be required to meet new reporting requirements, these measures must be communicated clearly and early, ahead of their introduction.

Expert construction sector groups should be assembled as a priority so that governments can gain first-hand knowledge of national capacity on life cycle GWP, and so that stakeholders can provide feedback on proposed methodologies and guidance.

Voluntary national trials provide a good opportunity for the construction sector to test and fine-tune a country's reporting methodology, so that it can be made fit for purpose before being introduced more widely. They also allow public officials to begin building a life cycle GWP database that can inform benchmarks, targets and limit values.



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Recommendations on construction sector capacity building and engagement:

European Commission

- Deliver the Delegated Act for an EU-wide framework for the national calculation of life cycle GWP to achieve climate neutrality, which should make specific recommendations for the harmonisation of life cycle GWP reporting among Member States, aligned with Level(s) and EN 15978.
- Set a date by which Member State life cycle GWP reporting methodologies must fulfil the minimum requirements of the Delegated Act.
- Ensure the prompt publication of detailed EPBD guidance on life cycle GWP measures, including the creation of national roadmaps with targets and limit values for new buildings. This guidance should pre-empt and ensure alignment with the EPBD Delegated Act, and include recommended best practice on applying EN 15978 for measuring life cycle GWP in recognition of the widespread shortage of building certifiers.
- Develop guidance which clarifies the direct links between the CPR (Construction Products Regulation) and the data requirements of the EPBD.

National governments

Methodology and guidance

- Develop a life cycle GWP reporting methodology and accompanying guidance as soon as possible, in consultation with a representative and diverse group of national construction sector stakeholders.
- Ensure the methodology fulfils the minimum requirements of the revised EPBD and its life cycle GWP Delegated Act, taking into account WorldGBC's Europe Regional Network recommendations. Member States should align their reporting methodologies to ensure harmonisation.
- When developing guidance, consider including national life cycle GWP benchmarks for different building types, to provide a reference point for developers on what 'good' looks like ahead of any mandatory limit values. It is vital that these benchmarks are developed using the same methodology as the one introduced for mandatory reporting.
- Conduct national-level trials of reporting methodologies to build construction sector familiarity with life cycle assessments (LCAs), as well as to collect life cycle GWP data. These trials should take place ahead of the introduction of mandatory requirements and should measure life cycle GWP for new buildings divided into different typologies.

Construction sector and public engagement

- Establish expert working groups consisting of construction sector representatives from across the whole value chain as well as academia, to be consulted throughout the build-up to and introduction of life cycle GWP measures. Such working groups should have technical knowledge of the building sector's potential for decarbonisation across both operational and embodied carbon. The INDICATE project is an example of a successful approach to kickstarting the national development of life cycle GWP data and building capacity.
- Issue a clear timeline for the introduction of life cycle GWP measures to ensure the construction sector can prepare. The timeline should include:
 - dates for mandatory life cycle GWP reporting as required by the EPBD
 - subsequent introduction of limit values and/or targets
 - future dates planned for when these limit values/targets will be adjusted
 - plans for consultation on a national reporting methodology and trial period
 - any additional steps such as mandatory LCAs for new public buildings at dates earlier than those stipulated in the EPBD, such as in national Green Public Procurement, for example.
- Consider performing a national cost impact analysis on the introduction of limit values so that developers can better prepare for any financial implications of compliance.
- Undertake public consultation and education to familiarise people with the need to reduce life cycle GWP in the built environment and to communicate the benefits of reporting and limit values — not just in terms of emissions reductions but also job creation, health and wellbeing benefits, and the long term cost reductions of energy efficient buildings.
- Channel funding into training construction sector personnel and public officials in areas related to life cycle GWP reporting and analysis, with an accompanying communications campaign.

2. Databases and data collection

The construction sector engagement and planning measures recommended in the previous section will help ready industry for the introduction of mandatory life cycle GWP requirements. At the same time, a complementary workstream on data should also be underway.

Implementing policies on life cycle GWP requires calculating and reporting a number of data points across a building's life cycle, including data on the different life cycle modules and the building and site elements that constitute the physical scope.

The calculation and provision of accurate and consistent life cycle GWP data will be crucial to allow architects, developers and the wider value chain to make informed decisions that can drive significant carbon reductions. It also enables policymakers to begin to create accurate life cycle GWP targets and limit values (as required by the EPBD) that reflect the true environmental impact of buildings. Without consistent, comparable data, it would be much more difficult to align building projects with climate goals. This makes the development of centralised national databases and the harmonisation of data collection methods, both within countries and across the EU, a top priority.

Collaboration between governments, the construction sector and data providers is essential to the creation and maintenance of these databases. Collaborative efforts to standardise the submission of LCA data will not only improve compliance but also reduce administrative burden. Equipping the construction sector with clear guidance on data submission requirements will help streamline the process, while an open dialogue between policymakers, industry, and academia can ensure that any generic or default data used reflects the latest industry standards and national contexts.



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Recommendations on databases and data collection:

European Commission

- Deliver the Delegated Act for an EU-wide framework for national calculation of life cycle GWP to achieve climate neutrality, which should make specific recommendations for the harmonisation of life cycle GWP reporting among Member States.
- Clarify whether life cycle GWP data will be required to be transferred from national databases to the EU Building Stock Observatory on an annual basis.

National governments

Data infrastructure for LCA submissions

- Prioritise the creation of a centralised national database to enable analysis and streamline the LCA submission process.
- Establish a working group specifically for construction and building databases so members can discuss concerns and clarify data collection processes.
- Issue guidance to the construction sector on what data should be submitted in their LCA, both in terms of the physical scope and the life cycle modules required, to ensure that data is submitted in a harmonised manner.
- Create a standardised template to which all LCA submissions must adhere, for example based on the templates provided by Level(s).
- Continue to engage with the construction sector throughout the process of introducing life cycle GWP data requirements.

Product, generic and default data

- Work with the construction sector and academia on the creation of a database containing measured product data; generic data that can be used in LCA submissions where no measured data is available; and default data, if necessary, for those building elements known to have a lesser climate impact. In the future, governments will be able to draw on the [Digital Product Passport](#) registry for this purpose, which will be created under the revised CPR.
- Prioritise the use of data from national trials of reporting methodologies, for generic and default databases, since it is likely to be most relevant to a country's specific context.
- If importing life cycle GWP data from outside a given country, ensure that any assumptions specific to the country in question are adjusted for national relevance. Official data from public bodies (energy and water for example) should be used to support scenario assumptions.
- Ensure that the generic and default data points in the database are continuously monitored and regularly updated so that they are up to date with the latest construction sector standards.
- Consider introducing a penalty factor for the use of generic or default data, especially in advanced design phases, to encourage the construction sector to use measured and product-specific data where possible.
- Require that developers justify and explain the use of generic and default data in their LCA submission.

Other considerations

- Ensure that LCAs are integrated into the national EPC certification scheme since life cycle GWP will need to be disclosed in this way to meet the requirements of the EPBD.
- Consider providing public funding for product manufacturers to develop and provide product data, with a particular emphasis on small and medium-sized enterprises (SMEs).

3. How to encourage compliance

As governments adopt mandatory life cycle GWP measures for buildings, ensuring compliance becomes critical to realising the full benefits of these policies and driving meaningful emission reductions.

Without proper enforcement and adherence, the potential to curb the environmental impact of buildings throughout their life cycle could be significantly undermined, especially if buildings are allowed to exceed limit values once constructed.

Encouraging a culture of transparency and compliance will enable governments to ensure that developers work actively with the supply chain to reduce the carbon intensity of their projects.

Clear guidance, robust monitoring, and effective enforcement are also required to achieve high levels of compliance and ensure that all projects contribute to the collective goal of reducing emissions. In this context, the recommendations outlined aim to create a framework that supports compliance, mitigates administrative burden and ensures that the transition to lower-carbon buildings is both feasible and effective.



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Recommendations on how to encourage compliance: National governments

- Ensure that life cycle GWP reporting requirements are embedded in the national building permitting system.
- Once limit values have been established, ensure that developers, as part of the building design process, provide evidence that life cycle GWP for a project falls within limit values.
- Ensure that submitted building LCAs are checked for accuracy and completeness. If any red flags are raised, developers and construction companies should have an opportunity to provide explanations or make corrections to any inconsistent or incomplete data.
- Consider how to automate the processing of checking submitted building LCAs to reduce administrative burden.
- As a last resort, consider fines and legal action if new developments do not disclose life cycle GWP adequately, or comply with limit values if these have been introduced.



Conclusions

The implementation of life cycle GWP measures across Europe will mark an exciting step forward and be crucial to align the built environment with the EU's ambitious climate neutrality goals. As we move towards a low-carbon future, the success of these policies hinges on the coordinated and prompt actions of both national governments and the European Commission.

For the **Commission's** part, the swift delivery of comprehensive guidance for Member State implementation of life cycle GWP policy will be key, taking into account the recommendations from this briefing. With the aim of maximum harmonisation, this should be accompanied by a Delegated Act that provides a clear minimum framework for reporting against to which all 27 EU Member States should align their methodologies.

Member States should begin working closely with construction sector stakeholders to develop the national guidance, methodology, and timelines needed for introducing life cycle GWP reporting, targets, and limit values, as well as the necessary data and compliance infrastructure.

WorldGBC's European Regional Network of more than 20 GBCs across Europe are ready to support national governments in this crucial phase of EPBD implementation. The GBCs serve as a bridge between national public and private sector built environment stakeholders, and are essential in any government consultation with the construction sector ahead of the introduction of life cycle GWP measures.



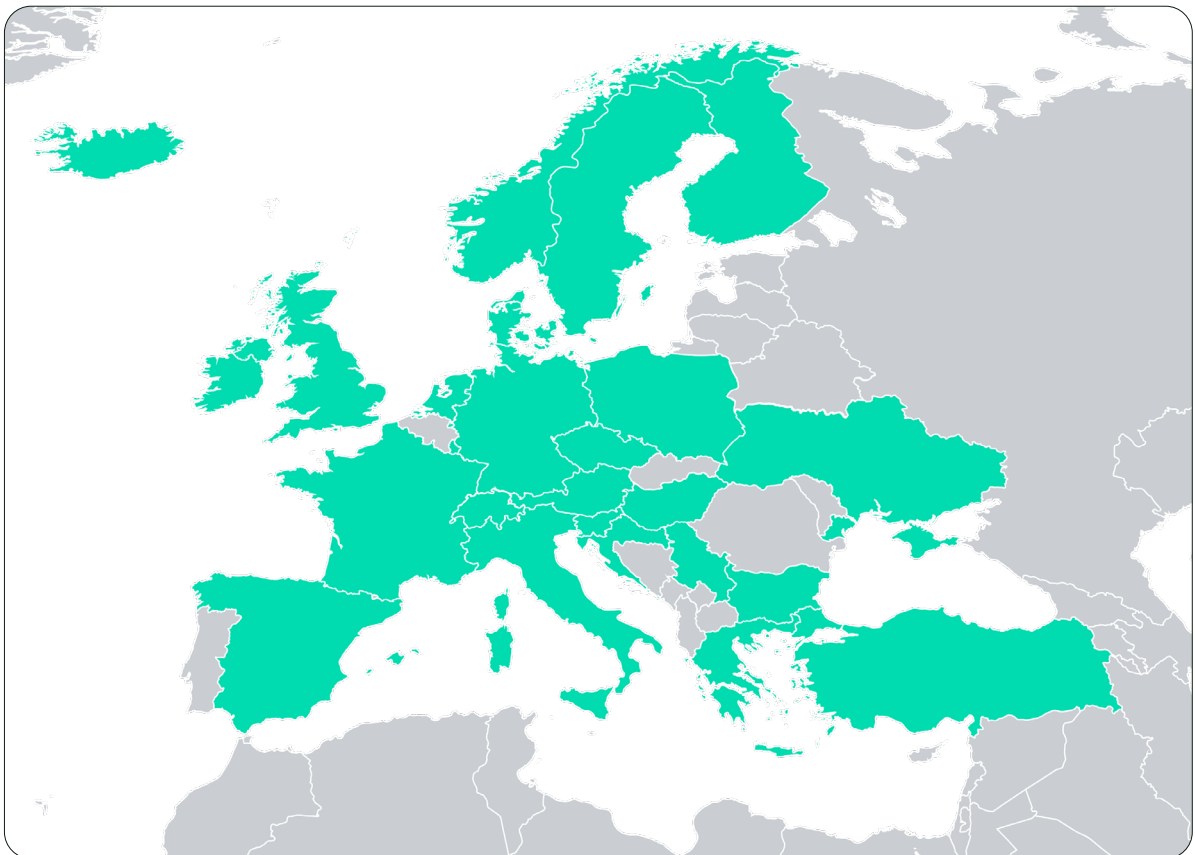
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About WorldGBC and our Europe Regional Network

The World Green Building Council (WorldGBC) is the largest and most influential local–regional–global action network leading the transformation to sustainable and decarbonised built environments.

Our Europe Regional Network represents over 20 national Green Building Councils (GBCs) and seven regional partners, working to put sustainable buildings at the heart of a prosperous and equitable future for Europe.



European GBCs are committed to supporting Member States with the timely implementation of the Energy Performance of Buildings Directive (EPBD) to:

- set the EU on track to achieve its climate goals
- boost energy security and tackle energy poverty
- create large numbers of long-lasting green jobs
- deliver high-quality, affordable and healthy buildings



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the requirements of the EPBD,
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