Green Transition Denmark

WLC implementation

Capacity building, stakeholder engagement, and sharing of best practices

And how the European Commission can support implementation

KEY RECOMMENDATIONS

1. **Set ambitious and clear EU-level benchmarks for whole life carbon**
   Provide early guidance on minimum limit values under the EPBD to give Member States and industry the certainty needed to invest and innovate.
2. **Ensure alignment between affordability and climate objectives**
   The Affordable Housing Plan should reinforce, not weaken, requirements on life-cycle emissions, ensuring that cost reductions do not come at the expense of long-term sustainability.
3. **Support capacity building in Central and Eastern Europe**
   Targeted technical assistance, funding, and knowledge-sharing will be essential to enable effective WLC implementation in less mature markets.
4. **Promote harmonised methodologies and data availability**
   Accelerate the development and uptake of standardised LCA tools and data frameworks across the EU.
5. **Encourage frontrunners and facilitate knowledge transfer**
   Leverage the experience of early movers such as Denmark and others to support peer learning and replication across Member States.

Introduction

In recent years, attention has increasingly focused on the substantial emissions generated by building material production and the construction process. Known as embodied carbon, these emissions are estimated to account for 10-20 percent of a building's total carbon footprint - a proportion that is expected to rise as operational carbon emissions decrease through efficiency improvements.

Energy Performance of Buildings Directive

Since the adoption of the recast Energy Performance of Buildings Directive (EPBD) in 2024, whole life carbon (WLC) has moved from a voluntary or frontrunner-driven concept to a core regulatory requirement across the EU, as the EPBD introduced measures to reduce carbon emissions of buildings over their entire lifecycle. This includes addressing both operational carbon and embodied carbon by introducing requirements related to buildings' life-cycle global warming potential (GWP). The Directive establishes, for the first time, a mandatory framework for measuring, reporting, and ultimately limiting life-cycle greenhouse gas emissions from buildings.

However, implementation across Member States remains highly uneven. While a small group of countries, primarily in Northern and Western Europe, have already introduced national WLC requirements or limit values, most of the remaining Member States are still in early-stage transposition, focusing on methodology development, data infrastructure, and policy roadmaps.

As of January 1st, 2027, member states are required to publish a roadmap outlining how they will implement and establish maximum limit values for the total cumulative life-cycle GWP from all new buildings, as well as set reduction targets for new buildings starting from 2030.

As of January 1st, 2030, the life-cycle GWP of all new buildings in the EU must be calculated and disclosed. For buildings larger than 1000 square meters, the life-cycle GWP must be calculated and disclosed starting from January 1st, 2028.

Thus, especially the coming years are critical: Member States must define national approaches, develop roadmaps for carbon limits, and prepare market actors for mandatory disclosure from 2028 and full implementation by 2030.
The inclusion of WLC requirements is a major step forward, however, its full potential can only be realized through ambitious national implementation.

European Affordable Housing Plan

The European Affordable Housing Plan was presented in December 2025, which addresses the pressing needs of European citizens: access to affordable, sustainable and good-quality housing.

As Europe scales up construction and renovation efforts, it is essential to ensure that this transition is guided by a full lifecycle perspective. Without WLC considerations, there is a significant risk of locking in high emissions from new buildings. Emissions that cannot be mitigated later in a building's lifecycle.

Maintaining a strong focus on WLC will be essential to ensure that Europe's buildings are not only energy efficient and affordable but also aligned with climate neutrality goals and resilient to future regulatory requirements.

EU Regulatory Framework: From Energy to Carbon

The recast EPBD fundamentally shifts EU buildings policy. First, it introduces mandatory whole life carbon assessment for buildings. Moreover, it expands scope from operational energy to full life-cycle emissions (materials, construction, use, end-of-life) and establishes a harmonised EU methodology via a delegated act adopted in 2025.

Key Milestones:

- **2024**: EPBD enters into force
- **2025**: EU common calculation framework adopted
- **2026**: Deadline for national transposition
- **2027**: Member States must publish roadmaps for WLC limit values
- **2028**: WLC disclosure required for large new buildings (>1000 m^2)
- **2030**: WLC disclosure required for all new buildings

Overall status for Eastern European member states

This report focuses specifically on Eastern Europe, assessing the current legal status of WLC regulation, identifying common gaps, and outlining the actions needed to ensure timely and ambitious implementation under the EPBD.

Across Eastern Europe, the dominant regulatory status is "pre-regulatory". It means that none of the Eastern European member states have binding WLC limit values in force and there is no comprehensive national legislation requiring a WLC calculation for new buildings. Most activities are limited to i) pilot projects, ii) EU-funded research, and iii) early methodological exploration.

In contrast to frontrunner countries, WLC is not yet embedded in national building codes in this region.

Without rapid action, Eastern European member states face several risks. Some of the most likely risk factors may include:

- Delayed compliance with EPBD requirements
- Adoption of minimum-level regulation (low ambition)
- Increased implementation costs due to late transition
- Fragmentation within the EU internal market

The overall aim of this project has been to overcome existing barriers to the implementation of WLC, with a particular focus on Eastern European countries, through capacity building and the exchange of best practices. However, building a coalition has in itself been a challenge, mainly due to the lack of activities on this issue in the countries of concern.

Through a series of interviews with organizations from various Eastern European countries, we have assessed the status of the WLC implementation and explored opportunities for sharing best practices.

The selected countries are based on those with whom we have been able to establish a dialogue.

Bulgaria

Organization: *Friends of the Earth Bulgaria*

Mail correspondence:
In Bulgaria there are several NGOs talking on the

subject. Za Zemiata is one of them following the transposition of EPBD and highlighting the environmental impact of various materials, up to now mainly insulation. They did an exhibition on natural and low carbon insulation materials a while back and were featured in national media outlets. Other organizations worth mentioning are EnEffect, and the Institute for Circular Economy. These organisations state that little to nothing is happening beyond talking about WLC. Moreover, WLC is a fringe topic, as there are much more pressing issues such as the building renovation programs and Resources for the Future amongst others.

The Institute for Circular Economy has a course in the University of Architecture, Civil Engineering and Geodesy in Sofia, with a lecture in it dedicated on the role of WLC and another about calculating embodied carbon using One Click LCA.

EnEffect is the major organisation working on EPBD and EED in Bulgaria, however they report that they are not able to have a high focus on embodied carbon at the moment.

Conclusion on WLC implementation in Bulgaria:

Status: No binding WLC regulation
Current activity: Minimal
Regulatory position: No WLC integration
Outlook: Early stage, high implementation risk

Romania

Organization: *EPG-thinktank*

In Romania they are still working on implementation. The current deadlines are:

- April 2025: First draft
- May 2025: public discussion
- April 2026: Final implementation

Still, there is no binding WLC regulation in Romania.

EPG-thinktank has already made a report[1] about the Whole-Lifecycle Approach in the Romanian Buildings Sector. The report lists the main barriers that may impede the effective application of the WLC approach in Romania's construction sector, along with proposed solutions to each. These are divided into the categories of technological, economic, legislative and regulatory, as well as cultural and public perception, with each group of barriers and solutions distributed across different phases of the building's life cycle.

Conclusion on WLC implementation in Romania:

Status: No binding WLC regulation
Current activity: EU-funded projects exploring LCA
Regulatory position: No legal framework for WLC
Outlook: Significant capacity-building required

Czech Republic

Organization: *DOOR*

Online meeting:

The discussion with DOOR indicated that progress around WLC remains limited to date. Current efforts within the building sector are primarily focused on energy efficiency, with less attention so far given to embodied or WLC considerations.

It was noted that a wide range of stakeholders are involved in the broader sustainability agenda; however, specific roles and responsibilities related to WLC implementation have not yet been clearly defined or formally assigned. This lack of coordination appears to be a contributing factor to the slow progress observed.

A recent development includes the establishment of a new contact point within the relevant ministry, which may support improved coordination and policy advancement moving forward.

Looking ahead, a tentative timeline was mentioned, with expectations that further developments or clearer direction may emerge by the end of 2025.

Organization: *Institute for Circular Economy (INCIEN) – Independent think-tank*

Online meeting: 07-04-2025

The discussion covered a range of interrelated topics, including timber construction, circularity, digitalisation (including artificial intelligence), green public procurement (GPP), and production practices.

A key point of discussion was the Czech Green Deal, which currently operates as a voluntary framework. Within this context, there is a growing

[1] Accelerating Energy Efficiency and Decarbonisation in the Building Sector – Scenario for Achieving EU and National Targets; EPG, Aura Oancea et al., February 2025

emphasis on the promotion of biobased buildings as part of broader sustainability efforts.

Embodied carbon is gaining increasing attention in the Czech Republic. Initial steps have been taken toward benchmarking, although this area is still under development. Rising energy prices were also highlighted as a significant driver influencing the construction sector's approach to carbon reduction. The Czech Green Building Council has published several reports[2] addressing this and other issues, however, it does not yet hold official status. There is an ongoing appeal from stakeholders for a more comprehensive and formalised framework to support the transition toward low-carbon buildings.

In terms of policy development, the implementation of European directives, particularly the EED and the EPBD, was identified as important factors shaping national efforts. These frameworks are expected to play a crucial role in driving change within the building sector.

Academic institutions, including technical universities, are actively contributing to the development of methodologies and research in this field. In addition, initiatives such as those led by e.g. the Laudes Foundation, have advanced the methodological basis for WLC assessments, including the completion of 55 WLC calculations. These efforts are helping to build capacity and restore momentum in the field.

The national building renovation plan was also discussed, with embodied carbon identified as an emerging consideration within this policy area. However, progress remains at an early stage.

Finally, it was noted that, at that time, upcoming national elections in October 2025 could influence the pace and direction of policy development related to whole life carbon and sustainable construction.

Conclusion on WLC implementation in Czech Republic:

Status: No binding WLC regulation
Current activity: Methodology discussions at policy level
Regulatory position: WLC not included in building code
Outlook: Early policy development phase

Overall conclusion: The European Transformation

Denmark and other frontrunners have demonstrated that WLC-regulation works in practice and that early and binding regulation has been driving measurable emissions reductions, innovation, and market transformation.

The challenge now is scaling this success across all EU Member States.

The EPBD provides the framework, but national ambition and speed of national transposition will determine the outcome. A coordinated, ambitious approach can turn WLC into one of the most powerful tools for achieving a climate-neutral European built environment.

Building on our previous briefing focused on Denmark, this report highlights the urgent need for coordinated and ambitious implementation across the EU.

However, across Eastern Europe, progress remains limited due to delayed implementation, weaker regulatory frameworks, and structural barriers including limited technical capacity and expertise, insufficient data infrastructure, and weak coordination among stakeholders.

Targeted EU guidance will be essential to overcome these barriers and ensure a level playing field across the internal market. By providing financial assistance, technical guidance, and capacity-building initiatives, the EU can help accelerate the development of national methodologies, data systems, and regulatory frameworks.

Green Transition Denmark will continue to support knowledge sharing, policy development, and stakeholder engagement to accelerate whole life carbon regulation in Europe.

[2] Zero Carbon Roadmap 2.0, Czech Green Building Council, 2025

Rådet for Grøn Omstilling

Green Transition Denmark is an independent environmental organisation that works to promote a green and sustainable transformation of society.
We receive funding from the European Climate Foundation for our work on embodied carbon in buildings.

More information

Building for the Future: Why EU member states must take ambitious steps in implementing the whole life carbon requirements in the EPBD:

https://rgo.dk/udgivelse/building-for-the-future-why-eu-member-states-must-take-ambitious-steps-in-implementing-the-whole-life-carbon-requirements-in-the-epbd/

Circular Construction: From dream to political practice in EU:

https://rgo.dk/udgivelse/circular-construction-from-dream-to-political-practice-in-eu/