Energy Performance of Buildings Directive review: major renovations ahead

The recast of the Energy Performance of Building Directive aims to ensure that the European Union reaches its climate targets. Negotiations are still ongoing, but we can already highlight five major changes to the current directive such as the setting of minimum energy performance standards and the harmonisation of the energy performance certificates

New, zero-emission residential buildings in Milan, Italy

Introduction

For several years now, the European Union has been setting a strategic agenda to tackle climate change in its entirety with the intention of transforming the EU into a climate-neutral, green, and fair society. A major commitment was taken with the enforcement of the European Climate Law in 2021. The Climate Law makes the reduction of EU greenhouse gas (GHG) emissions by at least 55% by 2030 a legal obligation. In order to reach this target, a set of proposals to revise and update the EU legislation was introduced through the “Fit for 55” package.

Considering the magnitude of the climate crisis, legislation has been proposed in 12 different policy areas, from land use and forestry to aviation and maritime transport. One focal point has been the review of the Energy Performance of Buildings Directive (EPBD).

This piece provides an introductory overview of the context, goals and expected policy developments. It's tailored towards decision-makers in financial institutions and investors. Another piece separately describes the expected effect of this new regulation.

Fit for 55 quick peak

The Fit for 55 package serves as a framework for attaining EU climate objectives such as ensuring a just and fair transition, maintaining the strong competitiveness of the union and positioning the EU as a leader in the fight against climate change.

It proposes legislation in the following 12 policy areas:

- EU emission trading system (ETS)
- Effort sharing regulation
- Land use and forestry (LULUCF)
- Alternative fuels infrastructure
- Carbon border adjustment mechanism
- Social climate fund
- RefuelEU aviation and FuelEU maritime
- CO2 emission standards for cars and vans
- Energy taxation
- Renewable energy
- Energy efficiency
- Energy performance of buildings (EPBD)

The last review of the EPBD dates from 2018, enforcing the long-term building renovation plan obligation for member states. The topic is crucial to reaching the goal of emissions reduction as buildings account for 40% of the energy consumed and 36% of energy-related direct and indirect greenhouse gas (GHG) emissions. European renovations are currently insufficient to reach the objectives, especially with the annual energy renovation rate stagnating at 1% (European Commission). At this pace, it will take centuries to rebuild and upgrade the European building stock, let alone make it climate change resilient.

The recast of the EPBD is a crucial element of the Climate Law policy. The revision aims to upgrade the European building stock to zero-emission (ZEB) by 2050, increasing the previous requirement that aimed at nearly zero-energy buildings (NZEB). This now implies that roughly 75% of the building stock, which is considered inefficient, must be renovated in the next 25 years.

Zero-emission buildings (ZEB) are defined by the EPBD recast as buildings with very high energy performance where the very low amount of energy still required is fully covered by energy from renewable sources generated on-site, from a district heating and cooling system. (Commission's definition)

Nearly zero-energy buildings (NZEB) are defined as buildings with very high energy performance which cannot be lower than the 2023 cost-optimal level reported by member states and where the 'nearly zero' or very low amount of energy required is covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby.

The update of the EPBD would therefore enforce stricter and more ambitious goals to upgrade the current building stock to be energy efficient and only rely on renewable energy sources when needed.

The European Commission's proposal to review the EPBD dates from December 2021 and became part of the legislative priorities for the year 2022. The Council came up with its general approach in October 2022, and it is now expected that the European Parliament will discuss a proposal based on the Commission's work and vote on their version on 24 January. Once parliament approves the text, the trialogue between the Council, Commission and Parliament will start. These interinstitutional negotiations aim at finding a compromise text. This step could be spread over the first two quarters of 2023. As negotiations are still ongoing, we expect the final text to include five major changes to the current EPBD.

1 Harmonised Energy Performance Certificates

The first major change of the EPBD is the introduction of harmonised Energy Performance Certificates (EPC). EPC labels are already in place, however, the methodology used to score buildings and the scoring scale itself currently vary between countries and even regions. The table below highlights these metrics and scale differences.

National EPC label differences

	DE	FR	NO	DK	FI	AU	IR	BE Brussels	BE Flanders	BE Wallonia	NL	IT	SW
Metric	Final energy kWh/m2/y	Primary energy kWh/m2/y	Energy delivered kWh/m2/y	Primary energy kWh/m2/y	Primary energy kWh/m2/y	Primary energy kWh/m2/y	Primary energy kWh/m2/y	Primary energy kWh/m2/y	Primary energy kWh/m2/y	Primary energy kWh/m2/y	Primary fossil energy use kWh/m2	Energy Performance kWh/m2/y vs reference building (A1)	Energy Performance kWh/m2/y vs building built today (C)
A++++											≤ 0		
A+++											≤ 50	≤ 0.4	
A++				≤ 20		≤ 60	≤ 25			≤ 0	≤ 75	≤ 0.6	
A+	≤ 30			≤ 30		≤ 70	≤ 50		≤ 0	≤ 45	≤ 105	≤ 0.8	
A	≤ 50	≤ 50	≤ 85	≤ 52.5	≤ 75	≤ 80	≤ 75	≤ 45	≤ 100	≤ 85	≤ 160	≤ 1.00	≤ 0.5
B	≤ 75	≤ 90	≤ 95	≤ 70	≤ 100	≤ 120	≤ 150	≤ 95	≤ 200	≤ 170	≤ 190	≤ 1.20	≤ 0.75
C	≤ 100	≤ 150	≤ 110	≤ 110	≤ 130	≤ 160	≤ 225	≤ 150	≤ 300	≤ 255	≤ 250	≤ 1.50	≤ 1.00
D	≤ 130	≤ 230	≤ 135	≤ 150	≤ 160	≤ 280	≤ 300	≤ 210	≤ 400	≤ 340	≤ 290	≤ 2.00	≤ 1.35
E	≤ 160	≤ 330	≤ 160	≤ 190	≤ 190	≤ 340	≤ 380	≤ 275	≤ 500	≤ 425	≤ 335	≤ 2.60	≤ 1.80
F	≤ 200	≤ 450	≤ 200	≤ 240	≤ 240	≤ 400	≤ 450	≤ 345	> 500	≤ 510	≤ 380	≤ 3.50	≤ 2.35
G	≤ 250	> 450	> 200	> 240	> 240	> 400	> 450	> 345		> 510	> 380	> 3.50	> 2.35
H	> 250												

Source: Various national and EU sources, ING

These differences make it extremely complex to compare the European building stock and significantly reduce transparency, on top of complicating the enforcement of EU-wide improvement goals. For banks, a lack of accurate EPC data can affect their strategy, targets and can tamper with their progress in loan pricing, classification and the credit risk management cycle.

The proposed directive tackles this issue by setting a uniform harmonised scale and providing a template for member states to follow. The template ensures the removal of the methodology

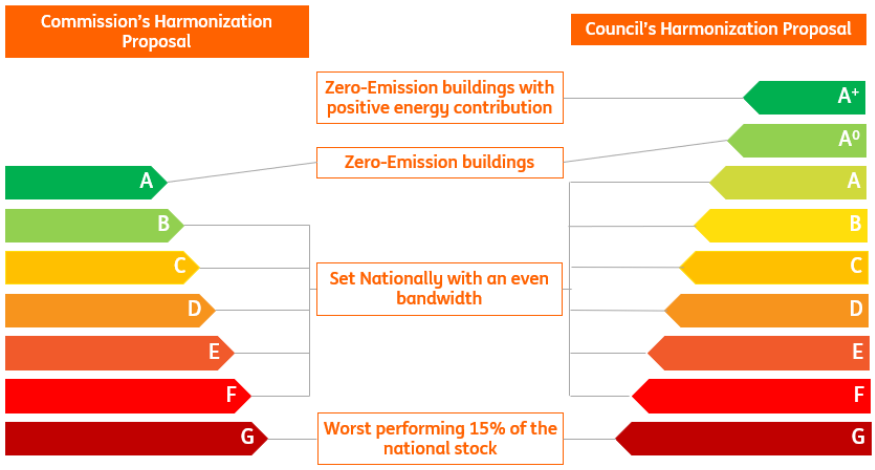
discrepancies by requiring countries to express EPCs with a numeric indicator of Primary Energy Use in kWh/m2/year. At this stage in the process, the Commission and Council have a slightly different approach to the rescaling. Indeed, the Commission has proposed harmonising the labelling by December 2025 with a scale going from A to G. The new scaling requires member states to label as A only zero-emission buildings with the letter G used for the worst performing 15% of the national stock (at the time of the scale production).

For the Council, countries will have to comply with the new reporting template only by the end of 2026. The harmonised scaling ranges from A0 to G, with the label A0 for zero-emission buildings and the letter G for the 15% worst-performing national stock (at the time of the scale production). It also allows member states to set an extra label A+ for buildings that are not only zero-emission but make a positive net annual contribution to the energy grid from on-site renewables. The figure below highlights these differences.

The remaining classes (from F to A or F to B) can be set by member states individually but must have an even bandwidth distribution of energy performance indicators.

For the Commission, EPC labels will be valid for a maximum of 10 years for labels A to C and only five years for labels below C. This aims at maintaining an updated data set of each country's building stock and an adequate overview of the renovation rate. The Council proposes to unify everything with a 10-years validity period.

Comparison between Commission's and Council's EPC harmonisation proposal



Source: European Commission and Council of the EU, ING

EPC certificates will also have to include an additional indicator, the life-cycle Global Warming Potential (GWP). It quantifies the global warming potential contribution of a building along its whole life cycle (including construction, usage, and destruction emissions). This will become mandatory for new buildings over 2000 m2 as of January 2027 and all new buildings as of 2030.

The proposal, from both the Commission and Council, leaves member states some room to exempt certain types of buildings from both minimum energy performance requirements and energy performance certificates. The list includes the following five points:

- Protected buildings (for their environment, architecture, or historical merits)
- Religious buildings (or places of worship)
- Temporary buildings used for two years or less, industrial sites, workshops and non-residential agricultural buildings
- Secondary residential buildings (used for less than four months per year or with an energy consumption of less than 25% of the expected all-year use)
- Stand-alone buildings with a total useful floor area of less than 50 m2.

2 Minimum Energy Performance Standards (MEPS)

The second important change to the current EPBD is the introduction of minimum energy performance standards. These are set with the aim of ensuring a higher renovation rate in the sector but also mitigating the negative social impact related to it. It should instigate a gradual phase-out of the worst-performing buildings with standards set at the EU level, focusing on renovating buildings with the highest potential for decarbonisation, energy poverty alienation and social benefits.

The EU-wide energy performance standards are based on harmonised Energy Performance Certificates (EPC) that will be used to gradually force member states to renovate the worst-performing buildings of their national stock. The EU differentiates between public bodies owned, non-residential and residential buildings and between new and existing ones.

The approach of the Commission and Council, however, differs here. Indeed, the Commission's proposal has a strict approach focusing on removing the worst EPC labels while the Council proposed an approach solely based on increasing the national average EPC level.

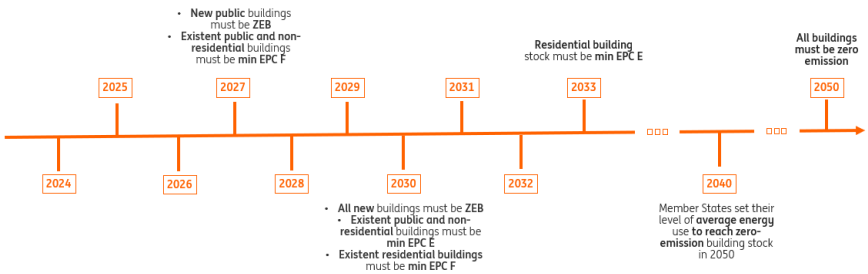
Commission's proposal

For new public buildings, the Commission's proposal requires them to be zero-emission by January 2027. All new buildings should respect this criterion as of January 2030.

For existing buildings, the proposal requires public buildings to reach at least EPC label F in January 2027 and label E in January 2030. The same deadlines and requirements apply to non-residential buildings.

However, residential buildings are required to be at least EPC class F by January 2030 and class E in 2033, as the timeline below highlights.

Commission's MEPS enforcement timeline



Source: European Commission, ING

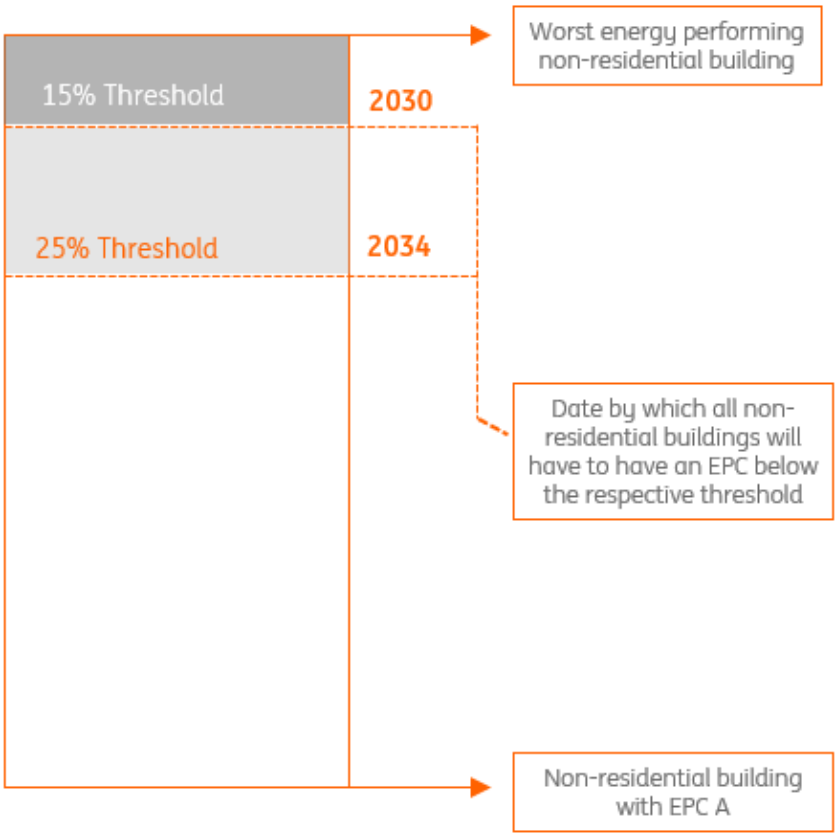
Council's proposal

The Council proposal leaves more space for national discrepancies by focusing on average national EPC levels instead of setting strict minimum EPCs. It requires new public buildings to be zero-emission by 2028 and for all new buildings to be so by 2030. In the meantime, it also imposes new buildings to be at least NZEB.

For residential buildings, member states are also required to set their country-specific Minimum Energy Performance Standards. However, the Council sets two control points, the average EPC label D should be reached by 2033 and by 2040 a national plan to reach zero-emission in 2050 should be in place. As these EU-wide deadlines should ensure that member states take concrete action to transform their worst-performing stock, they will also have to increase the average national performance. Member states are thus required to develop a national trajectory to slowly increase the average stock energy efficiency.

For non-residential buildings, the Council wants member states to set their own minimum energy performance standards. In other words, the maximum amount of energy that buildings could use per m2 annually. To enforce this, they are required to set two thresholds. The first one should be set below the primary energy use of the 15% worst-performing buildings in the national stock. All buildings are then expected to be below that threshold by 2030. The second threshold should be set below the 25% worst-performing buildings with the goal that the national stock is below that threshold by 2034.

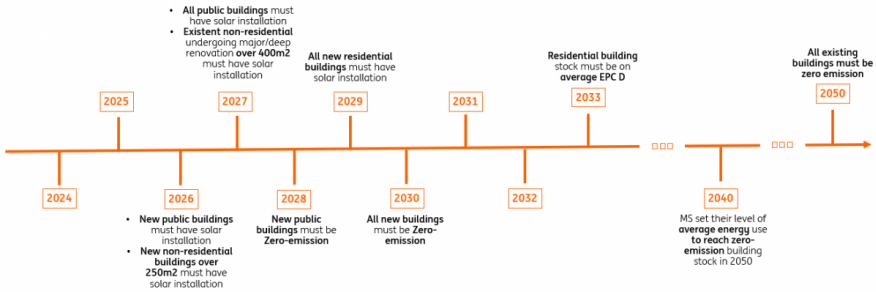
Council's proposal for non-residential buildings



Source: Council of the EU, ING

The Council also added, as part of the article on minimum energy performance standards, a solar energy requirement. Indeed, the new amendment states that member states must deploy suitable solar energy installations on their building stock. Again, by looking separately at public, non-residential and residential buildings, the revised EPBD states that all new public and non-residential buildings over 250 m2 must have solar panels by December 2026 and all existing ones undergo a major transformation of over 400m2 by December 2027. This will become required for all new residential buildings by the end of 2029 as shown in the timeline below.

Council of the EU MEPS enforcement timeline



Source: Council of the EU, ING

3 Creation of National Data Bases

The proposed EPBD recast requires member states to develop and sustain publicly accessible National Data Bases to store EPC labels (and full certificates). Currently, discrepancies in the storage and accessibility of EPC databases exist. The table below gives an overview of the current state of data availability for the major member states.

National differences in EPC data bases

Country	Type of register	Public access	Limited access	No access
AT	Regional		X	
BE	Regional		X	
BU	Central			X
CY	Central			X
CZ	Central			X
DK	Central	X		
EE	Central	X		
ES	Regional		Depends on region	
FI	Central			X
FR	Central		X	
EL	Central			X
IT	Regional		Depends on region	
LT	Central	X		
NL	Central	X		
PL	Central			X
PT	Central	X		
SK	Central	X		
SI	Central		X	
SW	Central	X		

Source: European Commission, ING

The main difference lies in the reporting level varying between central and regional. A majority of countries offer only limited to no access to the EPC database. This will have to change with the

enforcement of the EPBD recast with the hope of reinforcing transparency by allowing owners, tenants and financial institutions to have updated information on the building stock or investment portfolio. Once the databases are implemented, member states will also be requested to share them with the Building Stock Observatory following a common template (adopted by the Commission by June 2024). The directive review, however, doesn't mention the use of the Single Access Point that is currently being implemented by the European Union.

4 National building renovation plans

The current directive requires member states to develop a long-term renovation strategy. The recast of the EPBD replaces these strategies with National Buildings Renovation Plans. These must, on the one hand, have a stronger focus on financing the renovation and on the other hand, ensure the availability of skilled workers to proceed with the sustainable renovations. Thus, member states are expected to share an outline of financial measures, investment needs and administrative resources to reach their national renovation milestones. The roadmap must be updated every five years and include targets for the years 2030, 2040 and 2050.

National plans are also expected to actively promote financial mechanisms and incentives and include financial institutions. As one of the most critical dilemmas of the building renovation concerns social justice, financial institutions are expected to play a central role not only to incentivise renovation through energy-efficient advantageous mortgages but also reduce the risk of investment and include vulnerable households. That also holds for governmental incentives to prioritise and target vulnerable households (affected by energy poverty or social housing) and prevent evictions related to renovation costs. For both government and financial actors, the directive review, however, doesn't specify exact incentives to enforce.

> **Energy poverty** is defined in the Energy Efficiency Directive recast [recast EED art 2 (69)] as a household's lack of access to essential energy services that underpin a decent standard of living and health, including adequate warmth, cooling, lighting, and energy to power appliances, in the relevant national context, existing social policy and other relevant policies.

The creation of one-stop shops (OSS) is one of the mandatory indicators included in the template of the national building renovation plan. These suppliers provide "integrated solutions" as services and assistance in multiple steps of an energy renovation. Renovating a home requires technical, engineering, administrative and legal knowledge and depends on collaboration between several specialised providers. It can become an overly challenging project for homeowners, hence creating an additional non-financial barrier. These solutions can therefore help with the facilitation and/or coordination of renovation work. A report from the European Commission (2021) finds that these OSS solutions could incentivise between 5% and 6% of the renovation volume desired by the renovation wave in 2030.

To facilitate renovations, the EPBD recast also introduces renovation passports; documents providing tailored roadmaps for the renovation of specific buildings in several steps to significantly improve energy performance. The Commission proposed that by December 2024, member states introduce an implementation scheme for these renovation passports based on a common

framework. The Council's proposal wants to do so by December 2025 and allow it to be used by building owners on a voluntary basis. In both cases, it would give the opportunity to clearly map, through an expert certification, what can be done to improve the energy performance of a specific building.

5 Financial initiatives

As necessary as the directive review is for the EU to respect its international commitments, it raises questions of financial feasibility. Indeed, the estimated investment required to bring buildings to an adequate energy efficiency level varies between countries but is in the range of 15,000 to 100,000 euros for the worst-performing homes. The EPBD recast addresses this issue with an amendment requiring member states to put in place financial incentives to meet the 2050 zero-emission target but also to remove non-economic barriers to renovation. That can include removing the unanimity requirement for co-ownership structures, allowing them to be recipients of financial support or as discussed before, the creation of OSS solutions to facilitate access to renovation information and coordination. However, it will remain up to member states to choose which means to use to achieve their national goals.

The review also highlights that member states should adopt measures to make sure financial institutions offer energy-efficient lending products in a wide and non-discriminatory manner. To support investment, it also states a few examples of funding and financial tools such as:

- Energy efficiency loans and mortgages for building renovation
- Energy performance contracting
- Fiscal incentives
- On-tax scheme
- On-bill scheme
- Guarantee funds
- Funds targeting deep renovation

All these examples should provide incentives to trigger deep renovations or staged deep renovations for a high number of buildings with the goal of reducing at least 30% of primary energy use.

The EU makes a distinction between deep and major renovations.

Deep renovation: Before January 2030, a deep renovation is defined as a renovation which transforms a building into a NZEB. After January 2030, this is defined as a renovation which transforms a building into a ZEB.

Major renovation: Defines a renovation of a building where;

1. The total renovation cost is 25% higher than the building's value.
2. More than 25% of the surface of the building undergoes renovation.

Member states may choose to apply (1) or (2).

In Summary

Overall, these five major changes to the EPBD aim at making the ambitious reduction of GHG emissions by 55% by 2030 a reality. It focuses on triggering concrete action from member states to invest in the upgrade of their building stock. While the negotiations are still ongoing, it's not yet possible to fully describe what will be enforced at the national level. However, with the view of both the Commission and Council on the topic, we can already see the willingness to set concrete steps to proceed with this renovation wave. We can also highlight the aim to consider national variations in the current state of building stock. One question however remains, what will be the effect of the EPBD recast on both society and financial institutions? This is discussed in the following article.

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