

Review of the Energy Performance in Buildings Directive (EPBD) recast 2010/31/EU

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As part of its mission, Eurima promotes energy efficiency in buildings. As our energy system faces a transition, EU buildings legislation must continue to enable structural and sustainable solutions such as mineral wool insulation, which can ensure the overall efficiency of a building over its entire lifespan.

The role of the buildings sector is pivotal to delivering an Energy Union and ensuring that Europe has secure, affordable and climate-friendly energy. Buildings are responsible for the largest share of European final energy consumption (40%) and they represent the greatest potential to save energy, reduce our energy dependence, shrink our carbon footprint, tackle fuel poverty, and lower our household energy bills. Addressing this sector proactively through targeted policies and measures brings enormous short - medium - and long term benefits for consumers, business and government alike.

The key to delivering these benefits is renovation of the existing building stock. This requires a threefold approach: an EU renovation strategy with appropriate regulatory signals (on objectives and performance), increased visibility for renovation (and its benefits) and long term financial incentives.

Eurima believes the EPBD is an instrumental piece of legislation to improve efficiency of buildings and to drive a concerted renovation effort over the next decades. The EPBD has a key role to play in facilitating the transformation of the EU building stock into “nearly zero energy buildings’ (NZEB) levels by 2050.

This position paper complements the response Eurima has provided to the EPBD stakeholder consultation on 30 October 2015.

Our 5 policy asks

1. Renovating the existing building stock to NZEB level by 2050;
2. Setting a kWh/m²/y benchmark for Heating and Cooling (H&C) energy demand;
3. Strengthening key enablers for building renovation such as Energy Performance Certificates (EPCs);
4. Unlocking financial bottlenecks for investment in building renovation;
5. Improving implementation and enforcement of the EPBD and its measures within the existing legal framework.

1. Renovating the existing EU building stock to NZEB level by 2050

We spend 90% of our time in buildings and they provide us comfort, security and shelter to live and work. Having a comfortable, safe and resilient building stock is a fundamental pillar not just part of our jobs, growth, investment, energy and social agenda, but of our everyday quality of life.

Meanwhile, 75% of our buildings were constructed with no or low energy efficiency requirements, between 100- 250 million EU citizens live under energy fuel poverty (with leaky and damp homes), demolition rates are much lower than building rates¹, and building renovation cycles happen only every +30/50 years. If we do not encourage structural energy efficient decisions at key junctures and make building renovation an EU priority, we risk that this same inefficient infrastructure will be standing for another generation². The cost of non-action is high, as we forgo benefits such as more secure energy, reduced CO₂ emissions, job creation triggered by investments in building renovation, progress in living standards through reduction of fuel poverty, employment opportunities in the SME sector, higher property values, increased productivity, and improved health and safety, improvement in air quality, improved tax base and higher GDP.

In this respect, the EPBD has created a framework to stop the challenge of energy waste from buildings from getting worse. The nature of this challenge now calls for addressing our existing building stock. The EPBD is a progressive EU framework for the improvement of building codes and standards by having established a common methodology, introduced the concept of NZEB, deployed Energy Performance Certificates, and initiated a step towards energy renovations by putting in place minimum requirements for when a major renovation takes place. The NZEB concept has set an irrevocable trend, by creating a long term vision for new build, and helping the sector move away from a component based approach towards a more holistic low energy building design (although NZEB improvements are needed³).

A robust EU renovation strategy with a long term vision, clear milestones and objectives to accelerate the shift of our existing buildings into NZEB by 2050 is needed to achieve our Energy Union goals. Such a strategy is based on a holistic approach, which is coherent and consistent between the Energy Efficiency Directive (EED) and EPBD, and contains the following elements:

- **A 2050 Vision.** In order to accompany the '*minimum requirements*' based piece of legislation with an '*objective driven*' legislation the EPBD should introduce a consistent long term objective which is familiar to Member States (MS) (e.g. NZEB level stock by 2050), including indicative levels for energy demand of our existing building stock.
- **Clear milestones** for 2030, 2040 and 2050 to set out a clear trajectory towards the end goal (2050), to progressively target the worst performing buildings and a focus on the root of the problem in buildings: the energy used for heating (and cooling). The post 2020 EPBD should improve building level requirements and ask for a maximum absolute value for heating & cooling (H&C) energy demand, to be defined at national level (for new and existing buildings). Creating such a 'ceiling', triggers energy renovations and can even out the varying NZEB level gap.
- **Translating goals into reality.** This can be done by providing MS with the necessary guidance. In particular MS with less progressive building codes or those more reliant on EU legislation should be supported with a view to defining and organising a cost-effective, socially acceptable transformation to an NZEB level building stock by 2050.
- **Implementation and enforcement.** MS long term renovation strategies as part of their commitment under the EED (article 4) as they stand now are not forward-looking. Most are not time bound (and should be) and lack an obligation to implement. To deliver lasting change this must be addressed. The European Commission should encourage MS to use the opportunity of the 2017 Roadmaps to undertake proper, strategic and inclusive thinking on their long term renovation ambitions, equip those with targets, milestones and quantified benefits/co-benefits of renovation.

1 New build is roughly 1% a year

2 Sectors' own 2050 decarbonisation target of 88-91% CO₂ reduction, Low Carbon Economy Roadmap 205

3 Definitions across the EU28 vary between 30 kWh/m²/y - 200 kWh/m²/y, Ecofys NZEB 2014

2. Setting a kWh/m²/y benchmark for H&C energy demand

The NZEB model has triggered market transformation (for new build), but the difficulty is that it neither prescribes a common approach to implement NZEB nor does it describe the assessment categories⁴. This fragmentation has resulted in varying levels of NZEB (ranging between 33 kWh/m²/y - 200 kWh/m²/y). The absence of a maximum H&C energy demand requirement and failure to optimize the available energy demand reduction potential, places some MS further away from where technologies can bring the markets in 2020. In parallel, the differing ambition levels and vested interests across MS when it comes to energy and climate priorities have impacted the way NZEBs have been defined, and slowed down in some cases the successful delivery of an efficient building stock.

Buildings have huge potential for energy efficiency gains. Retrofitting existing buildings to make them energy efficient and making full use of sustainable space heating and cooling will reduce the EU's energy import bills, reinforce energy security and cut energy costs for households and businesses⁵. Efforts to reduce the energy use in existing buildings must respect the principle of energy efficiency first and optimize the demand reduction potential of the building. We must therefore address the biggest challenge within buildings, the 70% of energy consumed for H&C⁶ by remaining true to the intended objective of the EPBD, which is to improve the energy performance of the building.

These three challenges: bringing our existing stock to NZEB level, better defined NZEB and reducing H&C energy demand, can be addressed with one measure within the existing legal framework: **a secondary level requirement for NZEB and existing buildings, with a maximum absolute value (KWh/m²/year) for H&C energy demand, to be defined at national level**⁷. Through clear H&C energy demand benchmarks (values may differ for new built vs existing buildings) we can ensure that our buildings are equipped with an adequate building envelope (incl. insulation, windows and ventilation), benefit from low energy H&C needs and most of all establish a first harmonised step towards our goals of an NZEB level building stock by 2050⁸.

Structural measures, such as a good building envelope enable the correct sizing and efficiency of equipment's, safeguard against inevitable changes on the energy supply side, of which the decarbonisation paths are uncertain, prevent the lock-in of voluminous portions of savings and avoid having oversized heating and cooling distribution system ending up as stranded assets.

Highly efficient buildings also create flexibility on the supply side. They can reduce electricity demand and peak loads by nearly 57GW and keep desired room temperature stable over a longer period, also when the heating system is turned off⁹. If we reduce the peak, we reduce investments needed in generation and grid infrastructure, which means less energy, needs to be generated and transported. This can lead to savings in CAPEX costs up to €89-153 billion in the power sector by 2050. Such assessments are neglected in the public policy cost/benefit analysis and should be part of the Commission's estimation in the framework of the economic modelling.

The EPBD's aim is to reduce energy demand of the building, and decarbonised supply side options should be addressed in the EED/RES Directive, as appropriate. The EPBD review must therefore avoid an expansion of the system boundary (beyond building level) due to either a false pre-empting of an increase in energy use or lack of adequate consideration of available demand reduction potential through available and cost-efficient technologies¹⁰, which would discourage investment in renovation.

4 BPIE factsheet NZEB definitions : criteria for NZEB renovation of buildings have been identified in 13 jurisdictions and definitions have been set in 8 MS

5 Energy Union Strategic Framework

6 EC Heating and Cooling Issue Paper I on decarbonisation of buildings

7 The setting of an absolute value for H&C (for NZEB and existing buildings) is also already in place in some EU MS, namely Latvia. In addition, the long track record and learnings from the Passiv Haus concept which have max H&C requirements can be taken as an example

8 Different benchmarks may apply for NZEB than for existing buildings

9 Ecofys 2015 energy efficient buildings and the future power system

10 Space heating demand growth is moderating and in Germany even decreasing/IEA 2015 medium term report

3. Strengthening key enablers for building renovation such as comprehensive policy packages and EPC's

The buildings sector is large and disaggregated. Decisions on energy efficiency/renovation are taken by multiple players – governments, industry and consumers – based on different needs and goals, and reflect diverse incomes, climate conditions, habits, etc.¹¹. As a result, the construction sectors¹² resilience and growth hinges on consistency and regulatory certainty and multiple drivers are needed to tackle barriers to renovation:

Create demand for energy renovation works ('rate & depth'). Visibility and knowledge for stakeholders including building owners will help them self-accelerate towards change. Ensuring sufficient focus on renovation projects which avoid locking in of savings such as the below are key in this respect:

- Linking energy efficiency needs to the everyday renovation market, incl. DIY market;
- Maximising trigger points to perform energy savings works at the best moment, e.g. change of tenant or owner¹³;
- Integrating energy renovation into other types of works (aesthetic, equipment, technical, facelifts, roofing, etc.) thereby facilitating staged renovations.

Regulatory signals. Other than the need for consistency between definitions of deep renovations, staged deep renovations, and NZEB, and alignment with the long term vision proposed – a common understanding will create consistency, provide regulatory and investor certainty. Member States such as FR and UK have clear regulatory signals to phase out the old and inefficient building stock. In FR, the new green growth law sets an obligation to upgrade the worst performing private residential buildings and to do energy renovation whenever bigger works are being planned so that the best energy solution can be found. In the UK from April 2018, private properties with an energy rating below the E energy class will not be allowed to be rented.

Energy Performance Certificates: EPC's are an important awareness tool and have a large potential to improve the performance of buildings, but currently lack the needed reliability, and there is no uptake of the EPC recommendations. Our suggestions for improvement include, *inter alia*,

- **Increasing Reliability.** Increasing the number of appropriately trained experts; ensuring compliance through mandatory on-site inspections by certifiers; improvement of the certificate and the energy audits upon which they are based, measuring energy; better linking EPCs and access to financing; ensuring applicability of EPC's to all buildings; measuring energy performance of buildings in a more comparable manner; ensuring EPC convergence across members states; and finally ensuring national database are being made public.
- **Evolving EPC to a building passport for recommendation uptake.** EPC's should be developed into an individual renovation roadmap or building passport, which follows the building throughout its life and is linked to a MS database, and facilitates the realisation of consistent tailor-made renovation recommendations. Such a passport would include steps to undertake to achieve a targeted level of performance. Furthermore, ensuring sustainable financing mechanisms for major and ambitious actions such as deep renovation can help consumers with the up-front financing and thus implement the recommended steps in their passport.

Awareness/communication. The lack of knowledge/understanding at consumer level about energy consumption of buildings and the benefits renovation can bring (health, lower bills, asset value etc.) calls for much more MS/regional/local authority awareness campaigns and the available financial incentives for renovation. Also, owners need to be made aware about the short-, medium- and long-term policy goals and links with the evolution of their property green value.

11 IEA Energy Efficiency report 2015 page 79

12 The construction comprises of 3 million enterprises, an annual turnover of almost € 1600 billion and a total direct workforce of around 13 million people, contributing to 10% of the EU GDP of the EU

13 BPIE 2015 Best Renovation Practices

4. Unlocking financial bottlenecks for investment in renovation.

Financing is a key lever to bring our buildings to NZEB level by 2050. Estimates suggest that € 60-100 billion is needed to be invested annually in EU buildings to achieve Europe's 2020 energy efficiency targets yet current investments are below half of these requirements and five times lower than required to deliver 2050 decarbonisation targets for buildings.

As outlined in the EEFIG report, incentivizing renovation through financing should be considered in the context of broader structural reforms needed to improve the competitiveness of the EU economy and ensure that there is sustained impact on the EU 2030 climate and energy strategy. These include market actions, economic actions, financial actions, and institutional actions.

Finding the right mix of financing and incentives is a complex task. The interests of the building value chain need to be aligned and tailored financial instruments for building types, uses and owner profiles are needed. To increase the uptake of available financing we see three fundamental steps:

1. **Making energy efficiency a political priority:** This means MS giving priority to buildings in their long term finance, economic as well as energy and climate policies. In fact, we would recommend that energy efficiency is considered as an infrastructure priority as is already the case in Scotland where energy efficiency of buildings is a designated National Infrastructure priority¹⁴;
- I. **Creating awareness and understanding about the gains and paybacks of an energy renovation:** There is lack of trust towards professionals, lack of visibility regarding performance to be achieved, lack of accompanying structures and service and consumers are not experts but do have to decide about: type of work, level of performance, choice of solutions / materials / choice of professionals etc.;
- II. **Making sure that easy, cheap and long term financing is available (together with independent technical advice):** Current financial options for building renovation are often not easily accessible, complex and fragmented, with still too many structural barriers.

The '*smart financing for smart buildings*' communique should help unlock new sources of investment and improve the flow of financing into the energy renovation the EU building stock¹⁵:

1. **Stable, long term regulatory framework**, facilitating policy measures and long term financing schemes where « Energy Efficiency First » is the criteria for investments;
2. **Easy and accessible information 'one stop shops'** at local level with technical expertise about available subsidies, policies, and accredited professionals;
3. **Linking quality of work to financing**, e.g. through promoting best practices such as the KfW retrofitting which now also provide cross border lending to i.e. Bulgaria for boosting the energy efficiency of multi-family residential buildings¹⁶;
4. **Focussing subsidies/grants on renovation projects delivering savings beyond what the market can deliver** and bringing the building on the right path to 2050;
5. **Continuation of Financial support through EU funds** EFSI (France - Energy Posit-if), EEEF in France, Kredex in Estonia, JESSICA in Lithuania etc. These require more awareness and uptake of available funds, and project aggregators;
6. **Ensure higher leverage of private money** through public funding, via notably the involvement of building chain actors especially in the banking sector (need for training about multiple benefits of renovation and making renovation financially interesting for lenders);
7. **Adapt European procedures and accounting systems** so that energy efficiency investments are less of a debt burden for MS;
8. **Tackle barriers for a green mortgage** market;
9. **Reduced VAT** on energy efficiency works and services¹⁷;
10. **Use of revenues from climate policies** such as ETS should be used for investment in deep renovation of the building stock such as the case in e.g. Czech Republic.

¹⁴ E3G G20 statement on prioritising energy efficiency as infrastructure priority

¹⁵ EEFIG report 2015

¹⁶ https://www.kfw.de/KfW-Group/Newsroom/Aktuelles/News/News-Details_9085.html

¹⁷ Such as property taxes to encourage renovation (stamp duty in UK, recent developments in Spain)

5. Improving implementation and enforcement of the EPBD and its measures within the existing legal framework

The fact that the construction sector is inherently complex and fragmented, and one of the worst to be hit during the crisis (resulting in a low volume of construction and improved dwelling standards not having had high impact) - means that MS and markets need more time to adjust and given the necessary guidance on NZEB implementation¹⁸.

The structural issue to be addressed when it comes to implementation is compliance. Only 50% of MS have a view on compliance rates of new buildings and a stable and predictable framework is needed ensure a qualitative transformation in the market. Effective compliance is about procedures, a legal framework and enforcement. In this respect there are several aspects that require attention¹⁹:

- Adequate administrative, institutional, financial and availability of the rightly skilled workforce;
- Calculation methodology (comparability);
- Verification of calculation software, airtightness tests;
- Standards for certifiers, quality control and penalties for non-compliance²⁰;
- Application of EPCs to all building and checking of EPCs after completion of works (this is an important evolution from EPCs '*as designed*' to EPCs '*as built*');
- Stricter oversight of the design and construction: increased requirements for validation of airtightness and thermal bridging design and construction.

Lastly, the EPBD's success should be assessed against what it was meant to deliver: a market pull for cost-effective improvements to our buildings, cost-optimality proofing of our building codes deployment of NZEB buildings, create awareness through EPCs and '*when*' a major renovation takes place for it to be done in line with energy performance standards.

The fact that the renovation of our existing stock has not been sufficient (in rate or depth) should be the logical progression in EU buildings legislation, to which EPBD and EED should contribute in a consistent and coherent way.

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For more information please contact:
Shradha Abt, Energy Efficiency Manager Eurima
shradha.abt@eurima.org | Tel. +32 2 626 20 92. | Twitter: [@Eurima_MW](https://twitter.com/Eurima_MW) | www.eurima.org

18 It has only been 5 years since the entry into force of the EPBD recast, it has been 3 years since the transposition (2012), 2 years for several provisions (Art 6 new build Art 7 existing buildings and 9 NZEB) and a mere 3 months since the entry into force of Art 12

19 2015 QUALICHECK assessment and BPIE evaluation

20 Case of Flanders in Belgium and Ireland