European Insulation Manufacturers Association

A renovation wave across Europe

How to make it a real driver for a decarbonized, sustainable and healthy built environment and a stimulus for the economic recovery

Summary

This paper builds the case for an EU-level scheme for minimum energy performance standards for existing buildings and explains why they should become the cornerstone of the EU Renovation Wave. It also puts forward recommendations for an enabling policy and financial framework and describes concrete examples of existing comparable initiatives in some Member States.

Spurring a renovation wave in Europe is key to any future economic recovery plan, as it has the potential to create local jobs, support the many SMEs in the construction sector, reduce energy poverty, lower energy bills, deliver on the climate neutrality objective and create more comfortable and healthier indoor environments.

The phase-out of the worst performing buildings, through progressively tightened minimum energy performance standards, should be an essential element of the regulatory leg of the upcoming '*Renovation Wave*' initiative of the European Commission. Such minimum energy performance standards, as part of a wider enabling framework, can help getting the EU building stock on a trajectory towards climate neutrality by 2050 and deliver better buildings for all.

An effective phasing out of the worst performing buildings can bring multiple benefits for building occupants (healthier, more affordable homes), owners (higher property values), investors (better investment planning) and workers (increased visibility on future skills). Minimum energy performance standards are however not a stand-alone policy instrument and should be introduced alongside enabling and well-synchronised measures such as incentives, public and private financing schemes that reward higher energy savings, one stop shops, building renovation passports and social safeguards.

The EU's current building stock

There are currently 210 million buildings in the EU that together use more energy and emit more CO2 than any other sector of the EU economy. Without addressing the EU's biggest CO2 emitters, buildings, the 2050 climate neutrality objective will be unachievable.

Most of the buildings in 2050 already exist today. In fact, over 94% of today's buildings will still be standing in 2050, since the rate at which buildings are demolished is very low. The majority of these buildings are old and energy-inefficient, with over half of them in the three lowest energy classes (E, F and G).

Our homes, offices and schools therefore urgently need to be renovated to become more energy- and carbon-efficient, as well as more comfortable, healthy and affordable, for current and future generations.

Around 50 million of EU citizens are currently living in leaky houses, with no or insufficient insulation, that they cannot afford to properly heat or cool. This has a significant impact on their health, as up to 90% of our time is spent indoors. Indoor cold in Europe is linked to over 38,000 excess deaths in winter according to the World Health Organisation. Indoor dampness causes 15% of new childhood asthma in Europe. Summer comfort is an increasing concern with temperature changes in all geographies. These health problems can be avoided through better housing conditions.

Renovating for a better quality of life and a future-proof energy system

The pace at which existing buildings are renovated to make them more energy-efficient, affordable and healthy is very slow. Today's weighted energy renovation rate is close to 1% per year in the EU; merely 0.2% of the EU residential buildings are deeply renovated each year. At this rate, it could take more than a century to reach a highly energy-efficient and decarbonized building stock in the EU. This is at odds with Europe's objective to become climate-neutral by 2050 at the latest.

To stay on track towards the EU's climate and energy objectives, buildings need to be renovated and decarbonized in less than 30 years, instead of the current >100 years' trajectory.

A study by Climact (2018) has shown that to achieve a climate neutral Europe by 2050, a minimum 3% renovation rate per year combined with an average energy efficiency improvement of 75% need to be reached by 2030.

At building level, reducing energy demand via improving the building envelope as part of a holistic renovation enables a dramatic improvement in thermal comfort in winter and summer, on top of reduced energy bills.

Reducing the energy demand of buildings is a prerequisite for a rapid and cost-effective expansion of renewables in buildings, and beyond. This is because the renewable energy potential is inadequate to meet the heating demand of a poorly renovated building stock. Increased efficiency in existing buildings allows heating system flow temperatures to be reduced, which increases condensation boiler efficiency and permits the use of heat pumps for heating. By reducing peak demand, the grid size can be reduced which would lower costs for consumers, as they do not have to pay for an oversized grid or peak production capacity. Well-insulated buildings can also help with storing energy, acting as a thermal battery solution.

Economic and social benefits of building renovation

Accelerating renovations can make better and more affordable buildings a reality for all EU citizens, while supporting the local economy. Increasing renovation rates to almost 3% would create around 1 million additional jobs in the construction sector while enhancing the resilience of the sector in the face of a crisis. It would also lead to increased property values, as studies have found that properties with a higher energy performance rating are worth more and can attract higher rent.

In total, the monetized co-benefits of energy efficiency in buildings are over two to three times the required investments, without taking into account avoided climate damages. These benefits relate to improved air quality, better thermal comfort, reduced health risks, lower energy imports and enhanced energy security.

Renovating existing buildings furthermore requires fewer materials per square meter than constructing new buildings.

A trajectory to a climate-neutral building stock

The Energy Performance of Buildings Directive specifies that all new buildings need to be nearly zero-energy from the end of this year onwards. It also sets out a vision for a highly energy-efficient and decarbonized building stock by 2050 and requires Member States to develop Long Term Renovation Strategies to get there, including milestones. But in **absence of a stronger link between such milestones for 2030 and 2040 and the measures to be implemented, the 2050 ambition will remain aspirational**.

Tangible trajectories for the different segments of the existing building stock that will take us to a highly energy-efficiency and decarbonized building stock by 2050 are still lacking.

A commitment to phase-out the worst performing buildings is hence needed to guarantee quality homes to people, improve housing conditions (and related health issues) and meet the EU's energy and climate targets. This can be achieved by setting minimum energy performance standards for existing buildings that are progressively tightened over time in line with the EU's 2050 climate neutrality objective. If the timeframe is missed, the building in question could be deemed unsuitable for occupation until renovated up to the required level.

Such **minimum energy performance standards would help operationalize the pathway to 2050 climate neutrality in the building sector**.

Planning for the transformation of the existing building stock

Increasingly tightened minimum energy performance standards can give visibility and security to the market regarding the future direction of the existing building stock. If done right with sufficient lead times, it allows the market to mobilise itself and properly plan for the transformation. This has positive impacts for all involved stakeholders.

Investors would be encouraged to shift their real estate portfolios into Paris-compliant ones, nudging their clients to value energy efficiency and providing financial incentives, such as lower interest rates for buildings with higher energy performance or more advantageous financial products for energy renovations.

Companies active in the construction sector would know what solutions will be required in the future and are able to plan and organize themselves to deliver these. Introducing minimum energy performance standards would also help new skills to emerge in the market, giving visibility to SMEs on the future skills and training needs, and enable the development of new coordination functions.

Tenants would be able to live in houses that have increasingly higher levels of energy performance and comfort, which can reduce energy poverty and bills if adequate social safeguards are put in place to avoid unjustified rent increases. Property buyers would know in advance when they are required to do energy renovations in the future, and to what level, and can depend on the market to properly value these energy improvements.

Increasingly tightened minimum energy performance standards set a **trajectory for the transition of each building segment** (commercial, public, rental sector etc.) over time, and enable policymakers to plan accompanying measures, technical assistance and financial instruments in support of these trajectories.

An enabling financial and policy framework

It is clear that in the current situation, spurring a renovation wave will not be feasible without an economic recovery package that injects capital in the transformation of the EU building stock, thereby supporting local job creation and SMEs in the construction sector.

Financial assistance can come from a range of public and private sources, including through energy efficiency obligations, green mortgages and revenue recycling.

For example, channeling (part of) the billions of euros raised from emissions trading to the renovation wave can deliver seven times more carbon savings than the price of emissions alone. Scaled-up national building renovation programmes can get a headwind through the upcoming revision of the EU state aid guidelines which should better attune these rules to the specificities of structuring and managing the national programmes.

To deliver the best results, financing schemes should incentivise deeper energy renovations, providing a premium to renovations that deliver more energy savings and enabling buildings to reach Paris-proofed levels of performance. .

Finally, introducing building renovation passports alongside minimum energy performance standards enables the coordination and right sequencing of work, while alleviating burdens and complexity for the building owner.

Examples of national minimum energy performance standards

Several EU Member States have already introduced minimum energy performance standards. Examples listed below demonstrate approaches tailored to the specific categories of buildings.

In the Netherlands, from 2023, any office that has an energy performance certificate lower than class C will not be considered fit for purpose and cannot be used as an office until it is renovated. The plan is to strengthen this requirement by mandating an energy label A for all offices by 2030. Private banks in the Netherlands promote this requirement among their clients and urge them to renovate up to energy label A, to avoid having to go through two investment cycles. This shows how a solid visibility on policy milestones can help market actors activate positive market dynamics that support achievement of regulatory objectives.

In the UK, mainly to reduce energy poverty of tenants, landlords of privately rented properties have to comply with a minimum energy performance standard. From 1 April 2020, landlords cannot continue letting their properties with an energy label F or G unless they are renovated to at least level E. There is a cost cap of £3,500; if a landlord cannot improve the property to energy label E for £3,500 or less, he/she should only make all energy efficiency improvements which can be made up to that amount. The cost cap does not apply to third party funding. This law is a pioneering example of setting minimum energy performance standards. It however lacks a long-term vision on how to transition buildings to higher levels of performance over time.

Expected impacts

Progressively tightened minimum energy performance standards are effective in both accelerating renovation and increasing the depth of renovation. When introduced in the rental sector with adequate safeguards (e.g. rent control), they can help protect tenants against leaky and unhealthy buildings, as well as against high energy bills. Up to 6 million people could be lifted from energy poverty by 2030 as a result of minimum energy performance standards according to the European Commission.

Research by KU Leuven for the Flemish Energy Agency has shown that a higher energy performance is also beneficial for real estate owners. Single-family houses with an energy label B have been sold for an average 11% more than houses with an energy label E.

Minimum energy performance standards can be based on the existing national energy labels, even if they vary in each Member State due to differentiated climate conditions and national circumstances. The same approach has been taken for new buildings whereby the definition of ‘nearly zero energy buildings’ is also made at the national level.

A requirement to phase out the worst performing buildings, inter alia through minimum energy performance standards for certain building segments, along with sufficient financial resources and adequate social safeguards, can help spur a renovation wave in Europe. Such a renovation wave should support the just transition to a climate-neutral Europe by 2050 at the latest, boosting the local economy and paving the way for the construction sector, where many more skilled people will be needed in the near future, to play a leading role in the EU’s economic recovery.