



## 9 WAYS TO MAKE THE ENERGY PERFORMANCE OF BUILDINGS DIRECTIVE (EPBD) MORE EFFECTIVE

### Briefing

The European Commission announced a proposal for a revised Energy Performance of Buildings Directive (EPBD) to be part of the Energy Efficiency Package expected to be published in October 2016. This provides an opportunity to evolve and to strengthen requirements in the current version of the EPBD which would result in higher energy savings and reduced CO<sub>2</sub> emissions from the sector. Some essential changes are suggested below, concluded from BPIE's extensive research made these past years:

- **Including an unambiguous long-term vision for buildings:** the EU building stock should meet high efficiency and zero carbon standards by 2050.
- **Stimulating higher and deeper energy renovation rates of the current building stock**, with the necessary attention to technical and economic feasibility, health and comfort issues.
- **Introducing further compliance and quality assurance measures:**
  - Reform the cost-optimal methodology and take into full consideration other benefits (energy security, employment creation, reduced air pollution, health and comfort) of better building performance.
  - In Energy Performance Certificates (EPCs), Member States should ensure that, inter alia:
    - a) The requirements for qualified experts are harmonised across Member States;
    - b) The certifier needs to be physically present onsite (for new buildings as a part of a verification process);
    - c) The quality check of EPCs is strengthened and harmonised;
    - d) Digital tools are used for quality checks of the EPC data, such as plausibility checks in a calculation software and/or the EPC registers.
- **Ensuring that future buildings are smart and interconnected with the energy system.**
- **Addressing the problem of fuel poverty across the EU** with a carefully designed and more effective policy landscape.



<sup>1</sup>See [bpie.eu/publications](http://bpie.eu/publications) for a full list

## A LONG-TERM VISION FOR THE EU BUILDING STOCK

<b>WHAT?</b>	<b>Adopt a vision for 2050</b>
<b>WHY?</b>	<p>The time horizon of the current EPBD is limited to 2020 and refers to the Kyoto Protocol and the EU's 2020 climate target.</p> <p>The Paris COP21 agreement in December 2015 has redefined the global ambition to mitigate climate change, and the EU should reflect this in its policies. The next version of the EPBD should adopt a long-term vision for the European building stock which follows the Paris commitments: stay well below 2 degrees C global warming and aim at limiting temperature increase to 1.5 degrees C, recognising that the building sector has the most cost-effective mitigation potential.</p> <p>The timeframe regarding the effectiveness of a future Directive (potentially 2020-2030) has to be taken into account, foreseeing it to be sufficiently future-proof, and therefore aligned with the rapid evolution that the building stock and sector are undergoing.</p>

## RENOVATION OF THE BUILDING STOCK

<b>WHAT?</b>	<b>Minimum renovation requirements for the existing building stock</b>
<b>WHY?</b>	<p>A large number of Member States are not in compliance with the minimum requirements for renovation, and Art. 4 of the Energy Efficiency Directive (EED) alone is not sufficiently driving renovation activities.</p> <p>It is therefore necessary to strengthen renovation requirements. Renovation standards should be aligned with the ambition level of new buildings and become a guiding standard for Member States.</p> <p>The EPBD should define "trigger points" resulting in renovation requirements. This is common practice in some EU Member States where national regulation requires building owners to invest in energy performance improvements under certain circumstances (e.g. Germany, France, the UK, Belgium, Italy and Denmark). Defining trigger points would be an evolution of existing EPBD requirements for renovation.</p> <p>Renovation requirements should take into account the multiple benefits, including increase in comfort, indoor air quality, health improvements, creation of local jobs, etc.</p>
<b>WHAT?</b>	<b>Better Energy Performance Certificates: introduce the concept of Renovation Roadmaps</b>
<b>WHY?</b>	<p>All Member States have introduced EPCs, with hugely varying quality, reliability and market acceptance. One of the biggest barriers to renovation is the lack of information for building owners on how to properly plan, finance and implement renovations. The current EPC systems need to evolve into building specific renovation roadmaps, providing a "health check" on the building, including tailored advice to owners and investors on how to improve it.</p> <p>This approach has successfully been implemented in Baden-Wuerttemberg, with the German government currently considering it for the rest of the country. France and the region of Flanders (in Belgium) are also developing similar concepts.</p>
<b>WHAT?</b>	<b>Mandatory performance standards for commercial and public buildings</b>
<b>WHY?</b>	<p>Buildings owned and operated as commercial investments, and those which serve a public function, such as schools and hospitals, should have a defined minimum level of energy performance.</p> <p>Those which do not meet this threshold should be renovated within a certain timeframe. Mandatory renovation requirements are already in place in some Member States and specific measures are compulsory.</p>

<sup>2</sup>For details see BPIE (2015): Renovation in Practice.

## COMPLIANCE AND QUALITY ASSURANCE

<b>WHAT?</b>	<b>Reform the cost-optimal methodology</b>
<b>WHY?</b>	<p>The introduction of the cost-optimal calculation methodology to define energy performance levels for buildings was a major innovation in the 2010 EPBD recast.</p> <p>The DG ENER overview report about the cost-optimal methodology calculations as provided by Member States shows that a significant improvement is necessary to support nearly Zero-Energy Buildings (nZEBs) and renovation activities at a similar level. It states that “Regarding new construction, about 2/3 of the Member States’ results reveal improvement potential (a gap exists) and about half of the Member States have a significant gap (i.e. larger than 15%). Regarding renovation, the picture is similar [...]” Cost-optimal performance levels must pave the way for nZEB requirements for new buildings in the coming years. This can be achieved through the consideration of other co-benefits (energy security, employment creation, reduced air pollution, health and comfort) via, for example, a lower discount rate in the macroeconomic perspective. The reflection of the multiple benefits to a larger degree would also have implications on the assumptions made e.g. for Impact Assessment (IA) modelling. At the same time, the accepted degree of deviation from the cost-optimal approach should be lowered to foster more bespoke solutions.</p>
<b>WHAT?</b>	<b>Strengthen monitoring and compliance</b>
<b>WHY?</b>	<p>There is a need to consistently improve the enforcement of the EPBD provisions in Member States and to strengthen the monitoring of compliance rates with regulations concerning the energy performance of buildings.</p> <p>Development of skills in the construction sector is crucial to meet building requirements and to secure a high performance of products and technologies in the long-term. The present EPBD does not cover the quality of works. Quality schemes should be put in place to guarantee the expected performance and to stimulate the market uptake of innovative technologies and techniques, as well as help regaining the trust of owners and investors.</p> <p>It is highly problematic that only 50% of Member States have a view on the compliance rates of new buildings with energy performance requirements and that, in various countries, input data for the EPC calculation are based on design, not taking into account modifications or execution during the construction phase.</p> <p>The quality, credibility and usefulness of the EPCs vary greatly, representing a major barrier for policy making and undermining EPCs’ credibility and reliability from the perspective of building owners and tenants. This may hinder the use of EPCs as a policy instrument for renovation programmes.</p> <p>The EPBD should set guidelines for the implementation of EPC schemes at the national level, encourage independent control of EPCs and enforcement of penalties for non-compliance.</p>

## DATA TRANSPARENCY

<b>WHAT?</b>	<b>National building stock census</b>
<b>WHY?</b>	<p>The data availability for the building stock in Europe shows significant gaps. Effective renovation strategies can only be implemented if Member States have sufficient good data to define a baseline performance. Countries should therefore undertake a comprehensive census of their national building stock and its performance.</p> <p>This could be supported by setting up national EPC databases, which will facilitate the quality check of EPCs, with a selection of anonymised data being available at EU level.</p> <p>A well-functioning EPC system accompanied by an EPC database provides a ready-to-use source of information on the building stock for policy making and allows monitoring the implementation both at national and EU levels.</p>

<sup>3</sup>Ecofys (2015): Assessment of cost optimal calculations in the context of the EPBD (ENER/C3/2013-414)

## FUTURE-PROOFING BUILDINGS

<b>WHAT?</b>	<b>Interconnected and smart-ready buildings</b>
<b>WHY?</b>	<p>Buildings are the nexus between energy supply and demand. The challenge ahead is to ensure that future new buildings include smart demand flexibility and energy storage, both for heating and cooling energy and for electricity. Introducing the principle of smart-ready buildings and defining a common standard, also for major renovation plans, is a necessary next step.</p> <p>An increasing amount of heating and cooling is provided via electricity (cf. the growth of heat pumps). Energy generation, storage and grid-balancing functions are new energy services which can be provided by the building sector, enabling a higher renewables share. Recent technological advancements, such as developments in battery technologies, price decrease for renewable energy systems, and the need to have flexible and smart grids provide opportunities and challenges for the building sector.</p>

## FUEL POVERTY

<b>WHAT?</b>	<b>Address fuel poverty</b>
<b>WHY?</b>	<p>The EPBD can actively contribute to a more effective policy landscape to eliminate fuel poverty. Estimations indicate that between 50 and 125 million people in the EU are exposed to fuel poverty.</p> <p>The EPBD states that “Member States should draw up lists of existing and proposed measures that [...] potentially contribute to reducing energy poverty”. Energy poverty - or better fuel poverty - is inextricably linked to the buildings’ performance. Measures adopted at national or often local level focus mainly on income support schemes or on providing fuel subsidies. The EPBD should stimulate the shift to vigorous energy renovation programmes of fuel poor homes, as it is the only real sustainable long-term solution to eliminate fuel poverty.</p>

These recommendations are based on results of earlier BPIE research on the respective topics and are not considered exhaustive. A revision of the Energy Performance of Buildings Directive should:

- **Take the urgent need to reduce greenhouse gas emissions into account** reflecting the Paris Climate Agreement;
- **Reflect the agreed political priority to deliver energy savings through “energy efficiency first”;**
- **Respond to technological innovations** which enable the building sector to provide new “services” to other carbon-intensive sectors such as transport and energy generation;
- **Recognise changing societal and individual expectations with respect to comfort and functionality** of buildings, whether residential or non-residential;
- **Realise that the built environment is the biggest infrastructure investment opportunity** in Europe creating immediate positive returns for individuals and society at large;
- **Trigger increased economic growth and employment opportunities in the building sector** value chain and
- **Represent a pan-European initiative** to improve the living and working conditions for Europe’s citizens.



The Buildings Performance Institute Europe is a European not-for-profit think-tank with a focus on independent analysis and knowledge dissemination, supporting evidence-based policy making in the field of energy performance in buildings. It delivers policy analysis, policy advice and implementation support.