

## Building renovation in the Clean Energy Package: implications at local, national and EU levels



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The Clean Energy Package for All Europeans creates many opportunities to accelerate the energy transition in Europe and reach our European 2030 and 2050 climate and energy targets. The package contains important elements that will influence building renovation policy and encourage local, EU and national authorities to develop and implement ambitious and effective renovation strategies. This report is designed to support decision-makers at all levels, so that our buildings serve the needs of citizens in a sustainable way and that our response to climate change is faster and more effective.

- Oliver Rapf, BPIE Executive Director



Alexander Hadzhiivanov, Associated Director, Green Building Investments, Energy Efficiency and Climate Change Team, European Bank for Reconstruction and Development

"In order to realise the potential of the building sector in meeting ambitious energy and climate goals, we need constant stakeholder dialogue on long-term renovation strategies. This document provides an excellent overview of new EU legislation, offering stakeholders across all level of governance the necessary knowledge to understand their role in implementing the clean energy package."

 Irena Križ Šelendić, Head of Sector for Energy Efficiency in Buildings, Croatian Ministry of construction and physical planning



"If we are to succeed in increasing the energy efficiency of Europe's building stock, it is important that all relevant stakeholders can cooperate with a clear understanding of recent changes and the interplay between legislation in the area of building renovation. This report provides a great resource and starting point for stakeholders to understand where opportunities for action and collaboration exist in their spheres."

- Marco Marijewycz, BUILD UPON<sup>2</sup> Advisory Board Member, E.ON



#### The BUILD UPON<sup>2</sup> Project

We are in a state of climate emergency. We must act now to reach net zero carbon by 2050 - and cities can lead the way. To get there, cities must unlock the huge potential of their buildings - and building renovation in particular.

Deep building renovation has far-reaching benefits for society as increasing indoor comfort and air quality avoids illnesses and premature deaths associated with living in cold and damp homes. This in turn reduces pressure on healthcare and social services.

#### About BPIE

The Buildings Performance Institute Europe is a European not-for-profit thinktank 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.

The EU Horizon 2020 funded BUILD UPON<sup>2</sup> project will empower cities across Europe to join forces with national governments and industry to decarbonise their existing building stock by 2050. BUILD UPON<sup>2</sup> will strengthen the local effectiveness and implementation of the national building renovation strategies required by the EU Energy Performance of Buildings Directive (EPBD).

www.worldgbc.org/build-upon

#### **Contact Information**

Web www.bpie.eu Twitter @BPIE\_eu Email info@bpie.eu

Buildings Performance Institute Europe (BPIE) Rue de la Science 23 1040 Brussels - Belgium

# Foreword

This report is an excellent and timely resource, providing helpful guidance to public and private sector leaders on how to shape and implement effective building renovation policy in the coming years. It brings together the main pieces of the EU energy and climate legislation applicable for buildings and allows market players to adopt an optimal strategy for the ultimate goal of

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The Clean energy package addresses some of the existing regulatory gaps in building legislation and tries to create a supporting the building sector in the EU by the mid-century. It also contributes to achieving the European Union's commitments under the 2015 Paris Agreement on climate change.

# Introduction

The buildings sector is responsible for about 36% of CO<sub>2</sub> emissions and 40% of energy consumption in Europe

The aim of this briefing is to analyse some of the The Clean energy package most important changes brought by legislation for all Europeans [1] is a of the Clean energy package that will influence comprehensive set of legislation building renovation policy in the coming decades. It will focus on four core components: that defines European climate and energy policy for beyond 2020. It is composed of eight different pieces of legislation aimed at accelerating the energy This briefing will also identify the specific role transition in Europe. It will affect for local, national and European actors in order to implement those laws and develop ambitious many areas, from national renovation policies in line with the EU 2030 and long-term planning to reduce 2050 targets. In this framework, it is worth noting greenhouse gas emissions to that the competences of local authorities vary substantially among different EU countries and electromobility and consumers' that the recommendations of this briefing for local rights to produce renewable actors must be tailored to the specific national circumstances. While this briefing specifically energy. recommends actions to EU Member States on

The buildings sector is responsible for about 36% of CO<sub>2</sub> emissions and 40% of energy consumption in Europe, and 97% of the existing building stock is inefficient [2]. Because of this, the Clean energy package also addresses some of the existing regulatory gaps in building legislation and tries to create a supporting framework for decarbonising the building sector in the EU by the mid-century. It also contributes to achieving the European Union's commitments under the 2015 Paris Agreement on climate change.

1. Energy Performance of Buildings Directive	EPBD
2. Energy Efficiency Directive	EED
3. Renewable Energy Directive	RED
4. Governance Regulation	GOV

"The aim of this briefing is to analyse some of the most important changes brought by legislation of the Clean energy package that will influence building renovation policy."

how best implement the EPBD, the same recommendations can be valid for candidate countries that must transpose EU legislation (acquis), including on energy efficiency.

# **Core components** of the Clean energy package relevant for buildings renovation policy



2. Energy Performance of Buildings Directive (EPBD)

The Energy Performance of Buildings Directive (EPBD) [3] serves as the primary legislation guiding building construction and renovation in the EU to enhance building performance and efficiency to achieve 2030/2050 energy targets. The EPBD was adopted in 2002, recast in 2010, and amended in 2018. This latest revision sets a clear direction for the full decarbonisation of the European building stock by 2050, with an increased emphasis on building renovation. This goal, accompanied by a roadmap and suggested measures to achieve that vision with the long- term national renovation strategies, is the driver for increased renovation activities in the EU.

#### **2.1** Long-term renovation strategies (LTRSs) (Article 2a)

The amended EPBD (2018) outlines that each Member State is required to produce a national long-term renovation strategy (LTRS). This is not a new requirement as Member States have already produced two national renovation strategies in 2014 and 2017 [4], albeit under the EED (EED Article 4). In the 2018 amendments, this article was substantially strengthened and was moved to the EPBD. The next LTRS is due by 10 March 2020.



Compared to the previous version of renovation strategies, Member States must now conduct a public consultation on the LTRS (Article 2a.5) before they submit it to the European Commission ("Commission"). This is a new requirement and Member States are also asked to enclose a summary of the consultation with the LTRS. The Commission Recommendation on Building Renovation ("Commission EPBD Guidance") invites Member States to specify details such as the duration of the consultation, the method used to consult and the number or type of participants. It also recommends setting up stakeholder platforms on the model of those created by the Horizon2020 project BUILD UPON [].

#### 2.1.1 2050 decarbonisation objective and how to achieve it

The overall goal of LTRSs is to achieve a highly energy efficient and decarbonised building stock by 2050, facilitating the cost-effective transformation of existing buildings into nearly-zero energy buildings. While this goal is not defined further in the EPBD, the reference to nearly zero-energy buildings suggests that decarbonisation should be achieved with i) a reduction of energy consumption in the buildings sector through energy efficiency measures and ii) decarbonisation of the remaining energy needs through renewable energy, in line with the nearly-zero energy building definition included in Article 2.2 of the EPBD.1

The LTRS must contain 2030, 2040 and 2050 milestones and measurable progress indicators (EPBD



Article 2a.2). The Commission **EPBD** Guidance specifies that milestones and progress indicators can be quantitative or qualitative and can be tailored to national circumstances. It also provides examples of how Member States could define these, for example in terms

of percentage of renovated buildings or annual proportion of buildings undergoing deep renovations.<sup>2</sup>

Additionally, the LTRS must provide an explanation of the overall alignment and contribution to the EU energy efficiency target for 2030. In short, Member States must shape the LTRS as a roadmap to decarbonise the building sector by 2050 at latest, with clear steps and measures on how to get there.

#### Core components of LTRS 2.1.2

Article 2a of the EPBD specifically lists the elements that each Member State must include in its LTRS. These are the following:

1. An overview of the national building stock, based, as appropriate, on statistical sampling and expected share of renovated buildings in 2020 (Article 2a.1.a):

An accurate picture of the characteristics of the national building stock in terms of main building

categories, age band for type of buildings, a split by ownership, tenure and location is the starting point for planning tailored and effective policies [2]. The expected share of renovated buildings by 2020 can be expressed in many ways, for example in percentage or absolute number of renovated square metres per type of building [5].

2. The identification of cost-effective approaches to renovation relevant to the building type and climatic zone, considering potential relevant trigger points, where applicable, in the lifecycle of the building (Article 2a.1.b): When deciding renovation measures, those that achieve a better balance between costs and benefits (including benefits at large that go beyond the economic appraisal) must be prioritised. The EPBD specifically mentions renovations at trigger points as being an "opportune moment in the life-cycle of a building, for example from a cost-effectiveness or disruption perspective, for carrying out

### **TRIGGER POINT**

A trigger point is a key juncture in the life of a building (for example sale, maintenance work, or rental), in which renovations or a building intervention is happening regardless, therefore making it an ideal time to execute energy performance upgrades as well. If combined with other building work, energy renovations would be less disruptive for the occupants, as well as less costly.

For example, in France, the energy transition law for green growth includes a requirement to upgrade the energy performance of a building when other works are carried out - cosmetic works or otherwise. In Denmark, if a building undergoes a change of use that would result in significantly higher energy consumption (e.g. from a warehouse to condos), minimum energy requirements are established.

Additionally, article 2a (7) provides that Member States may use the LTRS to address fire safety and risks related to intense seismic activity that affect energy efficiency renovations and the lifetime of the buildings, another way non-energy related renovations can be combined with energy efficiency upgrades.

More information: see BPIE, 2015, Renovation in practice: http://bpie.eu/publication/renovation-in-practice/

energy efficiency renovations."

3. Policies and actions to stimulate cost-effective deep renovation of buildings, including staged deep renovation, and to support targeted costeffective measures and renovation, for example by introducing an optional scheme for building renovation passports (Article 2a.1.c): As the renovation cycle for buildings is often very long (30-50 years), it is essential that when a refurbishment takes place every effort is made to reduce the energy consumption of the building to the lowest level possible. However, deep renovation measures are challenging to implement because they are capital and labour-intensive and the building's owner often lacks tailored information and advice on how to renovate. Member States should design measures to overcome these challenges and stimulate deep renovations, for example by introducing building renovation passports.

<sup>&</sup>lt;sup>1</sup> EPBD Article 2.2: "nearly zero-energy building" means a building that has a very high energy performance, as determined in accordance with Annex I. The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby.

<sup>&</sup>lt;sup>2</sup> For the full list of indicators and milestones, please see point 2.3.2 of Commission Recommendation (EU) 2019/786 of 8 May 2019 on building renovation. In addition, the Horizon 2020 project BUILD UPON also developed a list with examples of milestones and indicators to track the im of renovation strategies, available at <u>buildupon.eu/wp-content/uploads/2016/11/BUILD-UPON-Renovation-Strategies-Impact-Framework.pdf</u>

### **BUILDING RENOVATION PASSPORT**

A building renovation passport outlines the long-term (generally 15-20 years) renovation plan for an individual building. The passport is based on an on-site energy audit and includes expected benefits from renovation beyond energy performance. Building renovation passports are useful tools to support owners with personalised renovation advice and ensure coordination of works during the different stages of the renovation for all involved parties.

Including mandatory renovation passports (potentially as part of energy performance certificates) is a good example of a policy measure Member States can take to encourage deep renovation.

The Commission is currently preparing a feasibility study evaluating the possibility of introducing a building renovation passport to complement the energy performance certificate, which must be concluded by 2020 (EPBD Article 19a).

4. An overview of policies and actions to target the worst-performing segments of the national building stock, split incentive dilemmas and market failures, and an outline of relevant national actions that contribute to the alleviation of energy poverty (Article 2a.1.d): The LTRS must also include detailed measures to target the worst-performing buildings, which can be identified for example through the energy class of the energy performance certificate, using energy consumption figures expressed in kWh/m2 per year, or according to their year of construction [5]. Targeting the worst-performing segment is often highly cost-effective in terms of energy savings, also considering the additional non-energy benefits of renovation, such as reduction of energy bills for occupants. The landlord-tenant split incentive is also a barrier to implementing renovation measures, as the benefits of the renovation (e.g. lower

bills, increased indoor comfort) are not enjoyed by those paying for the renovations (landlord). Member States must therefore outline the measures they aim to put in place to solve this challenge, such as rules for dividing or recovering some of the costs.

5. Policies and actions to target all public **buildings** (Article 2a.1.e): Public buildings can play an exemplary role by showcasing state-ofthe-art construction and renovation practices to the general public. In addition, focusing initially on the public sector provides the opportunity to test renovation measures, as well as develop necessary expertise to then apply similar programmes in the private sector. The EED requires each Member State to renovate every year 3% of the total floor area of heated and/or cooled buildings owned or occupied by central government. This obligation should be

the starting point of the policies and actions to target public buildings within the LTRS. However, the scope of actions to be planned in the LTRS is much broader than central government buildings and the strategies should target all public buildings, including those of local and regional authorities [5].

6. An overview of national initiatives to promote smart technologies and well-connected buildings and communities, as well as skills and education in the construction and energy efficiency sectors (Article 2a.1.f): Smart buildings have the capability to adapt to the needs of the occupant and the grid, and therefore improve energy efficiency by consuming less and providing more flexibility to the energy system overall. Member States must list the initiatives they are promoting in this framework. This requirement shows that LTRSs should also serve to promote new technological developments and technologies in the building sector. Additionally,

# **MULTIPLE BENEFITS OF BUILDING RENOVATIONS**

Energy efficiency measures can deliver more than just energy savings. Increased energy efficiency can reduce greenhouse gas emissions, improve local air guality, create jobs, improve health, alleviate energy poverty and bring financial savings, among other things. These additional benefits are often referred to as the non-energy benefits, or multiple benefits, of energy efficiency.

Using the multiple benefits in policy-making discussions extends the conversation beyond energy to include other departments within a municipality, or ministries such as health, environment, finance, infrastructure and employment (particularly useful for LTRS public consultation).

Additional multiple benefits resources can be found here: www.iea.org/topics/energyefficiency

Member States must also include initiatives to promote skills and education in the construction and energy efficiency sectors. Given the rapidly evolving world of technology, ensuring there is a skilled, knowledgeable workforce equipped to install and advise on energy efficiency measures is crucial to increase the uptake of energy renovations.

7. An evidence-based estimate of expected energy savings and wider benefits, such as those related to health, safety and air quality (Article 2a.1.g): Non-energy benefits are often overlooked in the appraisal of energy efficiency projects. Often the costs of a renovation project can be covered by additional benefits, beyond monetary energy savings, including increasing public budgets, improving local air quality, and increasing asset value, to name a few.

#### 2.2 Mobilisation of investment

Investment is a central driving component needing<br/>attention at all levels in policy-making in order to<br/>achieve regional, national and local targets. The<br/>EPBD (Article 2a.3) lays out several focus areasto address and facilitate financing for building<br/>renovation, which are therefore essential to<br/>achieving the long-term decarbonisation objective<br/>of the LTRS:

Aggregating projects

Addressing

perceived risk

Public

funds to

everage private

investments

Guidina

investment

into public building

stock

Advisory tools In general, energy efficiency projects are small in size, and therefore unattractive to investors looking for large-scale energy projects. In order to obtain substantial financing, it is often important to aggregate similar small-scale projects to attract necessary levels of finance.

Energy efficiency projects are often considered risky as return on investment is based on predicted energy savings and projects can have a long (5+ year) payback period.

In recent years there has been an increasing amount of public funds available at the European level for energy efficiency. However, increasing private investment is essential to reach climate goals. Public investment in energy efficiency can signal to the private sector long-term support for energy efficiency initiatives and policy.

Increasing investment in public sector buildings will help grow and build the energy efficiency market, as previously discussed. Guidance to facilitate investment is key to grow the market. Eurostat issued a guidance note [6] clarifying energy performance contracts in government accounts, to outline and guide public actor investment.

Providing information at the European, national and local level, is essential to create and support effective financing initiatives for improving energy performance in buildings.

# The multiple benefits of building renovation





# What should **Member States** do?



The Commission should consider starting infringement procedures if Member States are late with their submissions, or if the content of the LTRS is not in line with the requirements of the law.

The Commission should make publicly available on its website, with a courtesy English translation, the LTRSs as soon as they are submitted. This will facilitate stakeholders' engagement in the implementation phase and sharing of best practices.

- ★ When creating an LTRS, Member States should follow a sound process that includes a series of key steps that will help in drafting a comprehensive strategy. These include conducting analysis on all levels (socio-economic, policy and technical assessment) and identifying potential sources of supporting investment from both public and private sectors.
- When conducting the public consultation on the LTRS, Member States should aim to include and receive input from a variety of stakeholders, including local authorities, with an extensive knowledge of local building stock and building characteristics. The consultation should not be one single occasion but should continue throughout the process of developing an LTRS and also cover the implementation phase.
- ★ In conjunction with strong public consultation efforts, Member States should ensure good communication strategies for disseminating information to relevant stakeholders.
- ★ In the drafting process of the LTRS, Member States should ensure that all ministries are involved, including energy, housing, land-use planning, environment, industry, economy, education, health and finance. This is because the LTRS will have wide societal impact on many areas that are relevant across many departments of the public administration.
- Once the LTRS is published, the Member State should start implementing it. This means adopting the needed regulation, legislative tools and supporting programmes to implement the strategy, and checking the progress towards the indicators and milestones on a regular basis so as to take corrective actions if necessary. Also, during the implementation, involvement of key stakeholders including local authorities is crucial.



- Local stakeholders should participate in public consultations on LTRSs in order to join and advise the dialogue for policy-making and to contribute data and policy recommendations.
- In conjunction with national authorities, local authorities can work to establish good data collection for relevant metrics, such as building stock data (including worst-performing buildings, energy subsidy claims, energy poverty data, housing benefit recovery data, local air pollution numbers, etc.), to feed into national and regional databases. This exercise is useful to give an accurate picture of the
- national building stock, also in line with the LTRS requirement.
- Local authorities should also draft long-term renovation strategies for their building stock, which should feed into the national LTRS. Cities that are Covenant of Mayors signatories should include renovation strategies within their sustainable energy and climate action plans.
- Local authorities should lead by example and start renovating their public buildings (administrative buildings, schools, hospitals, etc).
- Given local stakeholders' understanding of their communities and local building stock, they play an important role in identifying potential pilot projects (e.g. aggregation projects to recommend on the national level for financing schemes, or potential locations for connected/ smart communities).

<sup>3</sup> See BPIE "Future-proof buildings for all Europeans – a guide to implement the Energy Performance of Buildings Directive" for more details on the different key steps to adopt an LTRS.

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#### 2.3 Advisory tools

One of the biggest barriers to buildings renovations is that consumers and policy-makers do not have adequate information to make decisions on renovation, especially for deep renovations that require putting in place a comprehensive package of different energy efficiency measures. Providing advisory services or tools is an important part of the EPBD for both Member States and the EU that should address this barrier. Article 20 outlines information components:

Member States need to take measures to inform tenants and owners on methods and practices to enhance energy performance of buildings (e.g. energy performance certificates, available financial instruments).

 Member States must provide information through accessible and transparent advisory tools such as renovation advice and one-stop-shops.

One type of advisory tool is the one-stop-shop. These are homeowner-centric services that should help citizens with their renovation journey, from provision of information, to tailored advice specific for their building, to explanation of the financial support available. One-stop-shop services should also serve as "a bridge between the fragmented supply side and the also fragmented demand side" [7].

Other types of advisory tools include the European Investment Advisory Hub (EIAH) [8], which provides access to different assistance services for investment projects across the EU. This is for example already available, free of charge, for the public sector.

"One type of advisory tool is the one-stop-shop: this homeownercentric service helps citizens with their renovation journey, from provision of information, tailored advice specific for their building, to explanation of the financial support available"

#### 2.3.1 EU. national and local involvement



- The Commission should encourage Member States to set up one-stop-shops and disseminate best practices through the EPBD concerted action.
- The EU should enhance best practice sharing among countries to inspire national policies and initiatives.

🖈 Member States should put emphasis on creating, cataloguing and evaluating incentives for enhancing building performance. For example, incentives for residential onsite generation, smart meter installation. information campaigns and behaviour change programmes.

What should

**Member States** 

do?

#### What should



Local authorities should consider accessing the European Investment Advisory Hub 🕞 to get free technical assistance and various types of advisory services in support of their buildings renovation projects.

Local authorities should consider ways to provide advisory service to citizens, including one-stopsshops and information campaigns. There are EU funds available for this purpose (e.g under the H2020 <u>research programme</u> []>>.) Their proximity to citizens, their knowledge of the local building stock and of the local suppliers are crucial in this respect.

#### 2.4 Smart readiness indicator

Buildings are moving from being highly energydemanding and unresponsive elements of the energy system to becoming highly efficient microenergy hubs consuming, producing, storing and supplying energy, making the system more flexible and efficient [9].

The 2018 EPBD recognises this transition and requires the Commission to develop an optional common EU scheme for rating the smart readiness of a building by 31 December 2019, including both a definition and a methodology on which the calculations will be based (EPBD Article 8.10 and Annex I A). According to the EPBD, the rating of a

smart building will "be based on an assessment of the capabilities of a building or building unit to adapt its operation to the needs of the occupant and the grid and to improve its energy efficiency and overall performance."

The smart readiness indicator will help raise awareness on smart technologies in buildings, including but not limited to smart meters, energy storage and the possibility to incorporate demand response measures. This is relevant for building occupants in the residential sector, but even more so for occupants and investors dealing with commercial buildings.

"Buildings are moving from being highly energy-demanding and unresponsive elements of the energy system to becoming highly efficient micro-energy hubs consuming, producing, storing and supplying energy, making the system more flexible and efficient"

#### 2.4.1 EU. national and local involvement

# What should the $\star$ do?

- The Commission should clearly explain the purpose of the smart readiness indicator and of its functionalities.
- The Commission should promote the uptake of the optional scheme by focusing on the benefits such as comfort for the occupants that smart technologies in buildings can help deliver.

# What should **Member States** do?

- EU optional scheme for rating the smart readiness of a building is adopted, Member States should promote and support its use at the national level as this will also steer investment on smart technologies in the building sector.
- ★ Member state could also test smart readiness indicators on public buildings.

🖈 When the common

#### What should



When the common EU optional scheme for rating the smart readiness of a building is adopted, local authorities should promote and support its use as this is a way to raise awareness about the benefits of smart technologies among citizens.

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# 3. Energy Efficiency Directive (EED)



# The EED establishes an EU headline target for 2030 of reducing energy consumption by at least 32.5% (Article 1).

The Energy Efficiency Directive (EED) sets the overarching legal framework for energy efficiency policy in the EU. It came into force in 2012 establishing measures to achieve the 20% energy efficiency target by 2020. Its 2018 revision extends the lifespan of one of its core provisions, the "energy savings obligation" (Article 7), beyond 2020 and sets a 32.5% energy efficiency target for 2030.

The EED also includes a specific buildings-related provision, which the 2018 EED revision did not amend. Article 5 requires Member States to renovate each year, in line with at least minimum energy performance requirements, 3% of the total floor area of heated and/or cooled buildings owned or occupied by central/national public authorities.

While none of the amendments of the 2018 EED revision has as its core purpose speeding up building renovations, both the overall 2030 energy efficiency target and the annual energy savings objective of the energy savings obligation will also be achieved through energy savings in the buildings sector.

# 3.1 An EU-wide objective to save energy by 2030

The EED establishes an EU headline target for 2030 of reducing energy consumption by at least 32.5% (Article 1). The 32.5% is a reduction in primary and/ or final energy consumption compared to energy projections and means that the EU should not consume more than 1,273 Mtoe of primary energy and/or no more than 956 Mtoe of final energy in 2030 [10]. The European Commission maintains the ability to revise this target upwards in 2023 to achieve the EU's decarbonisation commitments or in case of significant cost reductions resulting from technological development (EED Article 3.6).

Unlike the renewable energy target, which is binding, the 2030 efficiency target is indicative, as its "headline" indicates it is a non-binding obligation. However, its achievement relies strongly on the savings resulting from the implementation of EU binding legislation, including the EPBD.

To achieve the EU target, Member States must establish their national energy efficiency contribution (e.g. their share of the EU headline target) and communicate this to the European Commission within their national energy and climate plans. When establishing their contributions, in addition to complying with obligations from EU efficiency law, Member States are able to focus national actions on the sectors where there is the highest energy savings potential in their countries, including the buildings sector.

The ambition of the overall EU energy efficiency target and of the national contributions has a direct impact on the ambition of national renovation policy: the higher the targets, the more stringent the measures Member States should adopt to reduce energy consumption in the buildings sector. Given buildings account for 40% of energy use and 97% of them are inefficient, there is significant potential.

#### 3.2 Energy savings obligation

The energy savings obligation (EED Article 7) is one of the cornerstones of EU energy efficiency policy. It requires Member States to save annually a certain amount of energy by establishing an energy efficiency obligation scheme or by adopting alternative measures that achieve the same effect. If Member States choose the first option, the obligated parties under the scheme (for example energy companies) will need to achieve the required savings by implementing energy efficiency measures mainly on their customers' premises, for example through building renovations or switching to more efficient lighting. If Member States choose the second option, they must put in place measures, such as financing schemes, fiscal incentives and energy or carbon taxes, to achieve the required amount of savings. A combination of the two options is also possible.<sup>4</sup>

"Energy poverty is generally due to a combination of very high energy costs and low income of the occupants " With the revised EED, this crucial provision has been extended beyond 2020, as the original Article 7 stipulated the measure be in force only for the period 2014-2020. In addition, it sets a new annual energy savings target of 0.8% new savings per year for the 2021-2030 period.<sup>5</sup> This is calculated on annual final energy consumption. In

the current period 2014-2020, the yearly energy savings are set at 1.5%, but because of the several exemptions that are allowed, the delivered savings correspond in reality to only about half this amount. Therefore, the targets of the two periods are comparable in terms of savings to be achieved.<sup>6</sup>

<sup>&</sup>lt;sup>4</sup> According to the European Commission staff working document evaluating the implementation of EED Article 7, four Member States are using the energy efficiency obligation only, 12 Member States have chosen to implement alternative measures and 12 Member States use a combination of both. See for more details <u>https://ec.europa.eu/energy/sites/ener/files/documents/3\_en\_autre\_document\_travail\_service\_part1\_v3.pdf</u> <sup>5</sup> Cyprus and Malta only need to achieve annual savings of 0.24% per year (EED Article 7.1.b).

According to analysis performed in 2016, energy savings in the buildings sector were likely to account for 42% of the expected savings under Article 7; for comparison, 44% of the savings were expected to come from cross-cutting measures covering several sectors at the same time and only 8% from transport and 6% from industry [11]. This split confirms the large energy savings potential in the buildings sector, but also shows that Article 7, if well implemented, can contribute substantially to improving energy efficiency in EU buildings. In particular, to ensure building renovations are incentivised, the energy savings obligation scheme and alternative measures should be designed to favour energy savings from measures with a long lifetime.7

Another new requirement from the 2018 EED revision is that when Member States design policy measures to fulfil their obligations under Article 7, they must require that a certain share of measures are implemented as a priority among "vulnerable households, including those affected by energy poverty and, where appropriate in social housing" (EED Article 7.11). Energy poverty is generally due to a combination of very high energy costs, resulting from inefficient buildings and the increasing cost of energy, and low income of the occupants; prioritising energy efficiency renovations in those households would ensure that the energy savings obligation contributes to improving the living conditions of EU citizens.

The revised EED also clarifies what savings from buildings can be counted. EED Annex V states

that savings related to the renovation of existing buildings can be claimed as long as it can be demonstrated that they are the result of a specific direct action of a recognised actor, such as a public implementing authority (materiality criterion) [12]. This clarification aims at encouraging building renovations; in practice, however, it could be used by Member States to account for savings that would have happened anyway, instead of being

"Member States will be able to claim savings from the construction of new buildings during the current period" additional in terms of increased number of renovations or more deep renovations.

Under no circumstances can savings resulting from the construction of new buildings be claimed for the purpose of Article 7 for the post-2020 period. However, because of a retroactive change in the revised EED, Member States will be

able to claim savings from the construction of new buildings during the current period (2014-2020), but under very strict conditions, which de facto limit this possibility substantially.8

#### 3.3 EU, national and local involvement



The Commission should ensure the collective achievement of the 2030 energy efficiency target and propose additional measures if the national planned contributions and measures do not add up to at least the 32.5% target.

The Commission should consider proposing a higher energy efficiency target by 2023 to drive additional action in the buildings sector.

do? ★ Member States should set national energy efficiency contributions that take into account the great energy savings potential of the buildings sector. The higher the planned contribution, the more building

- investors. **\*** When complying with the energy savings obligation, Member States should consider how the different measures and policies support the objectives of the LTRS. In particular, the fact that buildings renovations can be counted for the purpose of Article 7 should lead to increased renovation activity, not to simply accounting for savings that would have happened anyway.
- 🖈 Member States should ensure that a significant share of energy efficiency measures under EED Article 7 is achieved through actions targeting vulnerable and energy-poor consumers living in inefficient buildings.

What should

#### Member States

renovations will be incentivised, also thanks to increased predictability and security for

#### What should



Cities and regions should consider setting their own 2030 target for energy efficiency. This could inform and influence the indicative national energy efficiency contributions of Member States. It could also be useful to inform the Commission's decision of increasing the energy efficiency target in 2023.

Local authorities are best placed to identify the vulnerable households facing energy poverty that should benefit, as a priority, from the energy efficiency measures under Article 7.

<sup>&</sup>lt;sup>6</sup> For more detailed information about the changes brought by the Revised EED to Article 7, see the Coalition for Energy Savings publication <u>http://</u> energycoalition.eu/sites/default/files/20190222\_TheCoalitionForEnergySavings\_EED\_Article\_7\_New\_period\_new\_savings.pdf For example, a new efficient light bulb will generate energy savings for few years only and after that will need to be replaced; while building renovation measures generate energy savings for a much longer period.

<sup>&</sup>lt;sup>8</sup> See Annex V.2.b: "Savings resulting from the implementation of national minimum requirements established for new buildings prior to the transposition of Directive 2010/31/EU can be claimed as energy savings for the purpose of point (a) of Article 7(1), provided that the materiality criterion referred to in point 3(h) of this Annex is ensured and those savings have been notified by Member States in their National Energy Efficiency Action Plans in accordance with Article 24(2).

### As part of the Clean energy for all **Europeans package, the RED was** amended, establishing a new EU binding target of 32% by 2030.

Reduction of energy consumption through energy efficiency measures and renewable energy production are mutually supportive. On the one hand, reducing energy consumption facilitates the increase of the renewable share in the energy mix; on the other, most renewable energy technologies are more efficient than fossil fuels [13]. In the buildings sector, the synergies between the two must be strengthened to speed up decarbonisation, particularly of heating and cooling. For example, the deployment of renewable energy technologies, such as heat pumps or renewable-based district heating, works best with very low energy buildings.

The Renewable Energy Directive (RED) was originally established in 2009 to create a legal framework to support the development of renewable energy in Europe. Among other provisions, it established a minimum binding target of 20% renewable energy by 2020. As part of the Clean energy for all Europeans

# Renewable **Energy Directive** $(RED)^9$

<sup>9</sup> This section analyses only the regulatory framework related to renewable energy in heating and cooling as the legal framework related to renewable electricity has little influence on buildings renovation policy.

package, the RED was amended, establishing a new EU binding target of 32% by 2030. The 2018 RED also includes some provisions to facilitate the penetration of renewable energy in buildings.

#### 4.1 A 2030 renewable energy target of 32 %

In 2009, the Renewable Energy Directive established a binding EU target of 20% renewable energy in final energy consumption, with national binding targets for EU Member States. The revised RED includes a binding EU 2030 target of at least 32%, but with national contributions, instead of binding national targets. The target must be calculated on gross final energy consumption, therefore covering renewables in all sectors, from industry to households, and delivered by different carriers.

As with the Energy Efficiency Directive, the European Commission maintains the right to revise this target upwards in 2023 in case of significant cost reductions resulting from technological development, to achieve the EU decarbonisation's commitments, or in case of a significant decrease in energy consumption (RED Article 3.1). This last point clearly shows the interactions between the energy efficiency and renewable energy targets: successful energy consumption reduction measures could

lead to an achievement of the renewables target with little additional renewables deployment, thus requiring an increase of the renewables target to steer additional action.

#### 4.2 Renewable energy in buildings

Integrating renewable energy solutions in buildings, such as solar water heaters, heat pumps or renewables-based district heating and cooling, is essential to reduce the sector's greenhouse gas emissions and is best done when planned in conjunction with building renovations. There are several provisions in the RED that aim at strengthening these synergies or will have a clear effect on buildings renovation policy. These include the following:

Member States must ensure that qualified authorities at national, regional and local levels include measures facilitating the deployment of renewables when carrying out spatial planning and when building or renovating urban infrastructure and commercial or residential areas (RED Article 15.3; this provision strengthens similar requirements already included in the 2012 RED).

 Member States must introduce appropriate measures in their building regulations and codes to increase the share of renewable energy in the buildings sector. For example, they must introduce in their building regulations and codes a minimum level of energy from renewable sources in both new buildings and buildings undergoing major renovations<sup>10</sup> (RED Article 15.4; this provision was already included in the 2012 RED).

• Member States should aim to increase the share of renewable energy in heating and cooling by an indicative 1.3% per year between 2020 and 2030 (RED Article 23, new provision). This could have a positive effect on accelerating building renovations as increasing penetration of renewable energy sources through district heating or heat pumps requires very low energy buildings and a joint planning approach between supply side and demand side measures.

"MS must introduce appropriate measures in their building regulations and codes to increase the share of renewable energy in the buildings sector."

#### 4.3 EU, national and local involvement

# What should the

The Commission should create a supportive framework to increase renewable energy in heating and cooling. This is necessary to decarbonise the building stock and has so far had little attention compared to renewable energy measures in electricity.



- **★** Energy efficiency and renewables are both necessary to decarbonise the building stock. When Member States set requirements to increase the renewables share in their building codes, there should be no trade-off with stringent minimum energy performance requirements for new buildings or for renovations.
- ★ When drafting their longterm renovation strategies, Member States should also jointly plan for renewable energy measures in the buildings sector. The decarbonisation goal of the LTRS must be achieved by substantially reducing energy consumption of buildings in the first place, but the remaining energy needs must be covered by renewable energy, whose deployment must be planned.

""'Major renovation' means the renovation of a building where (a) the total cost of the renovation relating to the building envelope or the technical building systems is higher than 25% of the value of the building, excluding the value of the land upon which the building is situation; or (b) more than 25% of the surface of the building envelope undergoes renovation; member states may choose to apply option (a) or (b)." (Art 2.10)

### local authorities do?

What should

Cities and regions should consider setting their own 2030 target for renewable energy penetration. This could inform and influence the renewable energy contributions of Member States. It could also be useful to inform the Commission's decision to increase the renewable energy target in 2023.

Local authorities should use an integrated planning approach that captures the interdependencies between supply and demand. Buildings renovations and deployment of renewable energy solutions should be planned in conjunction, for example by using a district-bydistrict approach in cities to reduce costs and annoyance for citizens and to maximise synergies.

The regulation streamlines the Member States' planning, monitoring and reporting obligations on climate and energy by introducing a 10-year planning cycle, the national energy and climate plan (NECP), which is the main framework for the delivery of the 2030 climate and energy targets.

The Governance Regulation (GR), established in 2018, sets the framework for cooperation between the European Union and the Member States on climate and energy policy. The overall aim is to facilitate achieving the Energy Union objectives, the 2030 climate and energy targets and the obligations under the UN Framework Convention on **Climate Change and the Paris** Agreement [14].

The regulation streamlines the Member States' planning, monitoring and reporting obligations on climate and energy by introducing a 10-year planning cycle, the national energy and climate plan (NECP), which is the main framework for the delivery of the 2030 climate and energy targets. It

# 5. Governance Regulation

also requires Member States to prepare national longterm strategies to plan their greenhouse gas emission reductions by 2050.

#### 5.1 National energy and climate plans (NECPs)

While under the current system Member States are required to plan over a three-year cycle with separate strategy documents for different areas, NECPs are based on an integrated planning approach for greenhouse gas emission reductions, renewable energy and energy efficiency for a 10-year period.

The first NECPs cover the period from 2021 to 2030 and the GR establishes a binding template (Annex I) that Member States must follow when preparing their plans. The 28 EU Member States have already submitted their draft NECPs, which were due on 31 December 2018, and the European Commission presented its country-specific recommendations on how to improve those drafts on 18 June 2019 [15]. Member States must now submit their final plans by 31 December 2019, taking into account the Commission's recommendations. Before that, if they have not done so already, they must organise a public consultation on their NECPs.

Buildings policy is a key component of the NECP, particularly of its energy efficiency dimension.<sup>11</sup> When setting their national objectives and targets for energy efficiency in their NECPs (GR Article 4.b), Member States must outline the indicative milestones, evidence-based estimates of the expected energy savings and wider benefits in line with the requirements of the LTRS under the EPBD. They also must include the total floor area to be renovated (or equivalent savings) in line with the obligation to renovate 3% of the total floor area of heated and cooled buildings owned and occupied by central government every year (EED Article 5).

The LTRS also forms an integral part of the NECP, as it must be annexed to the final version. However, there is a derogation for the next one, as it must be submitted by 10 March 2020 (not with the final NECP, due by 31 December 2019). As the two timelines are overlapping, but not completely synchronised, the coherence between NECPs and LTRSs could be jeopardised.

# 5.2 National long-term strategies

The GR also requires Member States to develop by 1 January 2020 a long-term strategy (LTS), which is a society-wide national decarbonisation plan to guide national action in reducing emissions from all sectors for the long term (covering a period of at least 30 years). The LTS should show how Member States plan to cut their greenhouse gas emissions to contribute to the objectives of the Paris Agreement and to a highly energy efficient and highly renewables-based energy system in the EU (GR Article 15).

With buildings-related emissions accounting for more than a third of the EU total, Member States must address in their strategies both reductions in heating

<sup>11</sup> The NECP binding template covers the five dimensions of the Energy Union, namely, i) decarbonisation, ii) energy efficiency, iii) energy security, iv)

internal market, v) research & innovation and competitiveness. <sup>12</sup> When developing their LTS, Member States must follow the requirements of Article 15 and Annex IV of the GR; Annex IV, unlike Annex I for NECPs, is not a binding template.

and cooling and in the buildings sector (residential and tertiary). In their LTS, they must also look at the links with other national long-term objectives and planning.<sup>12</sup>

"With the EU currently discussing its goal of achieving net-zero emission by 2050, LTS must be ambitious enough to align with this decarbonisation objective. " With the EU currently discussing its goal of achieving netzero emission by 2050, LTS must be ambitious enough to align with this decarbonisation objective.

# 5.3 Multilevel climate and energy dialogue

In addition to the public consultation requirements, the GR also recognises the importance of a constant dialogue with different stakeholders on climate and energy policies to increase their public acceptance. This is why each Member State must set up a multilevel climate and energy dialogue with relevant stakeholders to discuss different scenarios for climate and energy policies, including long-term aspects (GR Article 11). Local authorities, civil society organisations, the business community, investors and the general public are explicitly mentioned as actors to be involved in this dialogue.

### Summary of the respective timelines

NECP

GR

#### DIRECTIVE/ REGULATION

FOCUS

Integrated planning approach for greenhouse gas emission reductions, renewable energy and energy efficiency for a 10year period – INCLUDES LTRS



LTS

GR

**LTRS** 

**EPBD** 

Society-wide national decarbonisation plans to guide national action in reducing emissions from all sectors for the long term

January 2020

1 January **2025**  Establish a national roadmap to achieve a decarbonised building stock by 2050 in line with nearlyzero energy standards



10 March **2020** 

30 June **2024** 

1 January **2029** 

#### 5.4 EU, national and local involvement<sup>13</sup>



# What should Member States do?

- ★ The EU, particularly the Commission, should keep conveying the importance of meeting the 2030 and 2050 targets. Political commitment at the highest level is necessary to ensure those objectives remain high on the agenda and the necessary regulatory and financing measures are put in place at all levels.
- ★ The Commission should recommend to national governments to take an integrated approach when developing the different climate and energy planning tools. The GR was created to streamline obligations across the areas of energy efficiency, renewables and greenhouse gas emissions; this approach should remain a key principle that guides national implementation.
- ★ The Commission should ensure Member States comply with the requirements of public consultation on NECPs and LTSs and setting up multilevel climate and energy dialogues.

- ★ Even if the deadlines for submitting the NECP and LTRS are different, the two planning tools are inextricably linked. Member States must develop them at the same time to ensure full coherence and alignment. In particular, the LTRS milestones are also an essential part of the NECP.
- ★ When submitting their LTS, Member States should build on the objective of decarbonising the building sector included in the LTRS. The two documents cover a similar long-term period and the measures planned under one are also relevant for the other.
- ★ Member States should ensure that their public administration does not work in silos and the different departments that are responsible for the several planning tools cooperate and exchange information.
- ★ Member States must run open and transparent public consultations for both the NECP and the LTS that aims at gathering input from all relevant stakeholders, including local authorities.
- ★ Member States must set-up a multilevel climate and energy dialogue. The topics to be discussed in the multilevel climate and energy dialogue are not defined by the GR
- but addressing buildings renovation policy in this forum would be valuable. It would allow for the different levels of governance and the general public to come together to agree on a vision to decarbonise the building stock, which is a societal challenge that requires everyone's ownership and acceptance.

local authorities

What should

- Local authorities should participate in public consultation on NECPs and LTSs. The contribution of local authorities, through local policies and measures, to climate and energy policies is often overlooked or not known by the national authorities. Public consultations are an occasion for local authorities to showcase their results and to ensure they are used as an input to national plans and strategies.
- Local authorities should actively request to set up a multilevel climate and energy dialogue in case Member States have not done so and use the Covenant of Mayors political board to convey this message at the highest level.

<sup>13</sup> See as well recommendations from the EU Life PlanUp project on good practices in energy and climate governance in EU Member States, available at https://cdn.webdoos.io/planup/8796e0620db7f235c0b4213b5f466bd7.pdf



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# The Clean Energy Package: implications for National Renovation Strategies

The Clean energy package for All Europeans is a comprehensive set of legislation that defines European climate and energy policy for beyond 2020. It is composed of eight different pieces of legislation aimed at accelerating the energy transition in Europe. This publication analyses some of the most important changes that will influence building renovation policy in the coming decades, and more specifically on four core components: the EPBD (Energy Performance of Building Directive), the EED (Energy Efficiency Directive), the RED (Renewable Energy Directive) and the GOV (Governance Regulation). It also identifies the specific role for local, national and European actors in order to implement the legislation and develop ambitious renovation policies in line with the EU 2030 and 2050 targets.























