

ROADMAP

Roadmaps aim to inform citizens and stakeholders about the Commission's work in order to allow them to provide feedback and to participate effectively in future consultation activities. Citizens and stakeholders are in particular invited to provide views on the Commission's understanding of the problem and possible solutions and to make available any relevant information that they may have.

TITLE OF THE INITIATIVE	A Renovation Wave initiative for public and private buildings
LEAD DG – RESPONSIBLE UNIT	DG-ENER C4
LIKELY TYPE OF INITIATIVE	CORP – NEW – MAJOR
INDICATIVE PLANNING	Q3 2020
ADDITIONAL INFORMATION	-

This Roadmap is provided for information purposes only and its content might change. It does not prejudice the final decision of the Commission on whether this initiative will be pursued or on its final content. All elements of the initiative described by the Roadmap, including its timing, are subject to change.

A. Context, Problem definition and Subsidiarity Check

Context [max 10 lines]

The [European Green Deal](#) (EGD) aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy, with no net emissions of greenhouse gases in 2050 and decoupling economic growth from resource use. The EGD foresees a 'Renovation wave' initiative for the building sector. This was subsequently included in the 2020 Commission Work Programme.

The EU building stock is the largest single energy consumer in Europe with 40% of energy consumption and 36% of EU GHG emissions. Buildings are indispensable for reaching the EU's carbon neutrality, energy efficiency and renewable energy objectives. Renovating buildings reduces running costs for citizens and businesses. Considering that GHG emissions from material extraction, manufacturing of products, constructing and renovating buildings also need to be reduced, buildings are also critical for making circularity work.

Substantial progress has been made in recent years, in good part due to provisions of the Energy Performance of Buildings Directive (EPBD). New buildings today tend to consume only half of the energy that similar new buildings 20 years ago for their operation and use – or even less. However, approximately 80% of today's buildings will still be in use in 2050 and 75% of this stock is energy inefficient. Current [very low energy renovation rates](#) (approximately 1%) across the EU are insufficient, do not ensure necessary energy savings and will need to at least double in the coming years in order to achieve a climate neutral European Union by 2050.

This initiative is an opportunity for scaling up current rates, with lower hassle and inconvenience for people living in the renovated buildings. There are many benefits for citizens and businesses, from consuming less energy to healthier homes, and saving money. Renovation at neighbourhood and urban scale will also enable more solutions for renewable energy, advanced district heating and cooling, waste management, sustainable mobility and social cohesion. Boosting energy performance of buildings will help to alleviate energy poverty and improve comfort, sanitary and living conditions.

Construction and renovation is a labour-intensive industry supporting a wide array of upstream sectors and small and medium size enterprises (SMEs). In addition to saving energy and money, and reducing CO₂ emissions, this initiative will provide a key contribution to creating jobs and stimulating economic recovery in the context of the Covid-19 pandemic. Faster and deeper renovation would be beneficial in many respects. It is a must for a net climate neutral EU and a clear win-win investment priority for a green, digital and fair recovery¹.

Problem the initiative aims to tackle [max 25 lines]

This initiative aims to address the current low decarbonisation and renovation rates across the EU as well as provide a framework for renovation to play a key role in supporting a green and digital recovery.

Renovation of buildings offers potentially high social and private returns across several dimensions: efficiency in energy and heating and cooling; climate resilience; circularity; renewables uptake, pollution cuts, better health,

¹ The construction sector is responsible for 9% of the EU GDP and nearly 15 million direct and indirect jobs. The near totality of the value chain is located in Europe. The sector is supporting a wide array of upstream sectors and SMEs hard hit by the covid-19 pandemic. Renovation projects can be unrolled quickly and are estimated to account for about 3-4 million workers with around 60% of expenditure on home energy efficiency retrofits going to labour.

lower poverty, e-mobility infrastructure, e-solutions for health, schooling and work. Despite such returns, renovation rates remain low.

Approximately 11% of the EU building stock undergoes some level of renovation work each year ranging from “light” (3% to 30% energy savings), “medium” (30% to 60%) and all the way to “deep renovations” (>60% energy savings). The vast majority of renovation does not address energy performance and the weighted energy renovation rate is only 1%². Inefficient buildings (either insufficiently or not renovated) exacerbate energy poverty and social welfare issues. From an investment perspective, current expenditure on energy efficiency does not come close to cover current needs. Achieving a decarbonised building stock by 2050 will require the effective mobilisation of public and private finance. Additional investment needs to reach EU 2030 energy and climate targets is: around 325 billion annually, with approximately EUR 250 billion for residential and EUR 75 billion for public buildings. Similar magnitude of annual investment is needed to reach climate neutrality by 2050.

This initiative will update and build upon the analysis of barriers to building renovation identified by the Energy Efficiency Financial Institutions Group (EEFIG) and already considered as part of the amended Energy Performance of Buildings Directive under the Clean Energy for All Europeans package, namely:

1. structural barriers, such as those linked to characteristics of the building stock and the building sector in general – for example, long lifetime of buildings, limited industrialisation and local/regional climatic variations hampering standardised approaches;
2. information barriers, such as the lack of understanding of a building’s energy use and potential energy savings, the consideration of renewables in buildings and of efficient renewable heating and cooling systems, poor data on the building stock, insufficient knowledge of the scope of financing programmes and products available, lack of awareness of the wider benefits of building renovation such as improved health and wellbeing, reduction of CO₂ emissions and financial benefits such as increased value of assets and reduced risk (e.g. synergies between Energy Performance Certificates and financial support for renovation needs are largely unexploited);
3. market failures, like those linked to externalities e.g. housing values do not always reflect the building’s energy performance, or its increase, split incentives between owners and tenants, immature business models for energy performance in renovation, a mismatch between financing needs for renovation projects and the typical products offered by financial institutions, insufficient range of attractive financial products, limited use of mechanisms that leverage public capital to attract private investment, and limited uptake of energy efficiency, certain renewable and smart technologies. A closely related aspect is the non-monetary nature of some of the benefits of renovation such as the improvement of comfort and sanitary conditions of dwellings, direct impact on health and wellbeing of occupants, or lower costs to consumers on a life-cycle basis to reach the carbon-neutral building stock thanks to increased energy efficiency and renewable in buildings;
4. Lack of expertise by providers of renovation, insufficient workforce and the need for scaling up training and green and digital skills, at a much larger scale necessary for matching the targeted renovation rates;
5. A combination of factors making it difficult to aggregate projects and/or carry out more efficient district approaches. These include the small-scale nature of renovation projects which inhibit cost effectiveness, the need for engaging with citizens directly or via local or other intermediaries (local authorities or municipalities, energy service companies, one-stop-shops, social housing providers, district associations, local banks etc), the need for intensified technical assistance, capacity building and support to home owners, project promoters, intermediaries and local and national administrations (including for the necessary legal reforms);
6. Regulatory barriers such as complex permit procedures at national or local level, EU rules limiting the effectiveness and feasibility of some of the possible solutions to the above (state aid, procurement, and blending rules) or insufficient compliance with existing obligations related to minimum energy performance requirements for major renovation works at building level.

More generally, given the complexity of above problems, the lack of a comprehensive strategic approach cutting across various fields has also contributed to their persistence.

Basis for EU intervention (legal basis and subsidiarity check) [max 10 lines]

Article 194(2) of the Treaty on the Functioning of the European Union states that in the context of the establishment and functioning of the internal market and with regard for the need to preserve and improve the environment, Union policy on energy shall aim, in a spirit of solidarity between Member States, to promote energy efficiency and energy saving and the development of new and renewable forms of energy.

The initiative will take into account the subsidiarity principle. In particular, the initiative will bring together follow-on actions at local, national or EU level, wherever that action is best pursued in line with the principle of subsidiarity as set out in Article 5 of the Treaty of the Functioning of the European Union. Increasing the energy performance of the EU building stock cannot be sufficiently achieved by Member States alone and requires, by reason of guaranteed consistency of shared objectives and political drive, complementary action at EU level.

² <https://op.europa.eu/en/publication-detail/-/publication/97d6a4ca-5847-11ea-8b81-01aa75ed71a1/language-en/format-PDF/source-119528141>

Sufficient flexibility would be foreseen to allow for adaptation to national and local conditions in Member States.

B. What does the initiative aim to achieve and how [max 25 lines]

Following on from the revisions of the EPBD, this initiative will encourage more focus on removing barriers and incentivising investment in making buildings and districts more energy efficient – thereby reducing emissions, lowering consumer bills and improving the quality of life of occupants. The initiative will also look at how to foster deeper renovation in terms other complementary dimensions to energy efficiency such as the development of renewables, heating and cooling solutions, climate resilience, circularity, e-mobility infrastructure and digitalisation. In the context of the Covid-19 economic recovery package, the Renovation wave will also reinforce an important labour-intensive investment option for public spending which will create jobs for SMEs and put money back into the local economy.

The initiative will take the form of a strategic Communication, with an integrated approach across policy areas. It will seek to establish an action plan with concrete measures to address the main barriers and to reinforce the pull factors for faster and deeper renovation, gradually triggering at least a doubling of current renovation rates and reducing the greenhouse gas footprint. This will consider legislative and non-legislative instruments and enabling tools, financing and non-financing aspects, and different levels of action (EU, national and local or regional).

The Communication will set out a broad strategy incorporating elements from, or providing options for other Commission initiatives (e.g. climate, circular economy, just transition, skills agenda, industrial strategy, Sustainable Built Environment Strategy, green finance, state aid guidelines revisions, simplification of legislation, review and possible revision of the Energy Efficiency Directive and the Renewable Energy Directive II as announced in the Green Deal Communication).

The Communication will include a factual stocktaking and gap analysis, and will present an updated state of play of building renovation across the EU on the basis of the Member State national long-term renovation strategies, of the relevant aspects of the National Energy and Climate Plans and of work and key activities in this area already put in place by the Commission.

Important aspects that the Communication and Action Plan will address include:

- **How to stimulate the volume and depth of renovation through regulatory and non-regulatory instruments:** meaning fostering the “industrialisation” of building renovation (including as part of larger approaches, e.g. at district level) with reduced inconvenience for occupants (e.g. standardisation, off-site production and assembly), including in the context of the economic recovery. In order to reach climate neutrality by 2050, deep renovation should also address building integrated renewables and efficient renewable heating and cooling systems, waste management, sustainability, mobility and circularity principles. Stimulating renovation also means easing administrative burdens for property owners through smarter and/or simplified permitting procedures;

- **Facilitating access to mechanisms to support the mobilisation of investments in building renovation:** bridging the large financing gap to reach the 2030 targets and 2050 goals in this sector requires massively scaling up private investments and making better use of centralized and EU funding in addition to national and local resources. Rapidly attracting investments to support the renovation sector and create employment becomes particularly important in the context of exiting from the Covid-19 pandemic. Building on the EU’s rich experience in the area of financing for energy efficiency (notably the Smart Finance for Smart Buildings –SFSB-initiative, the Private Finance for Energy Efficiency and the ELENA facility) and deployment of small-scale renewables, the Communication will draw on lessons learnt using centrally managed EU funds and decentralized ESIF funds as leverage to attract private investment at much higher volumes. It will explore means to scale up successful initiatives to stimulate the bundling of smaller/individual projects into aggregated ones and thereby facilitate financing and reduce costs. In addition to easier blending of public and private capital, and of grants and loans, it will explore further innovative financing instruments and approaches, e.g. on-tax, on-bill, green loans and mortgages, services contracts and the possible intensified use of ETS revenues for building renovation. It will also analyse the benefits related to increasing visibility, improving understanding and facilitating access to EU funding available for building renovation, e.g. through a single entry point acting as a ‘one-stop-shop’ for building renovation, or by developing a “renovation label” similar to what is being used for projects financed via the LIFE programme. It will consider reinforcing the use of Energy Performance Certificates and of nearly zero-energy building standards in order to direct private financing to highly performing buildings;

- **Tackling worst performing buildings and energy poverty:** ensuring affordability of housing and reducing the costs linked to energy consumption requires tackling the worst performing segments of the building stock (e.g. these constructed to low quality standards or before energy performance building codes were in place) and those buildings most commonly occupied by lower income households, such as social housing. Energy performance certificates can be an effective tool for data mapping of the EU building stock, allowing for legislative, fiscal or non-legislative measures prioritising specific segments in need of building renovation and tracking progress against milestones for national renovation strategies. Stimulating the use of renewable self-consumption and renewable energy communities’ rights can help alleviate energy poverty.

- **Public sector and public buildings leading by example,** promoting compliance with relevant EU legislation and exploring effective ways to target public buildings (with a special focus on hospitals and schools) including in the context of planned review and revision of the relevant Directives (see above). Options for promoting green

procurement will be explored, next to stimulating public-private partnerships and energy performance contracting for the public sector;

- **Supporting skills and employment strategies:** the construction sector employs approximately 18 million workers, 95% of whom work in small and medium-sized enterprises (SMEs). The green and digital skills of today's and future workforce should be strengthened to deliver the Renovation Wave. These actions should contribute to the economic recovery from the Covid-19 crisis, leading to a more sustainable economy;

- **Driving smart technologies in buildings, digital and data aspects:** promoting and strengthening the use of digital tools can improve the durability and adaptability of buildings; ensuring optimal operation of buildings and maintenance of building systems are also important in this context. How to foster renovation in a manner that favoured the energy system integration of renewables in buildings, installation of e-vehicle charging infrastructure, thermal storage, and connection to smart grids should also be considered. The EU data strategy can contribute to better collection and use of data on the energy performance of the building stock.

C. Better regulation

Consultation of citizens and stakeholders [max 10 lines]

The Communication will build on a factual stocktaking and gap analysis across the EU. It will take stock of the state of play and look at the assessment of Member States' national long-term renovation strategies (deadline 10 March 2020) under the Energy Performance of Buildings Directive and building-related elements in the National Energy and Climate Plans (deadline for final plans 31 December 2019).

To support the preparation and roll-out of the Renovation Wave, synergies with adjacent areas and initiatives will be explored, such as the Covenant of Mayors³ or the Smart Cities Marketplace⁴, bringing together many relevant stakeholders on local level, representing a wealth of knowledge, capacity and best practices in the area of integrating renovation concepts on district and city level (e.g. urban clusters grouping buildings in a certain area), addressing the systemic nature of renovation and linking it with ICT as well as transport and mobility.

Recent developments in the Covid-19 crisis context resulted in the cancellation or postponement of a number of public events on the Renovation Wave planned in particular in April-June 2020. A web-based public consultation will take place instead and will be accessible via the Commission's central [public consultations page](#).

Evidence base and data collection [max 10 lines]

The evidence for the Communication will come from several sources, including recent reports in support of the Clean Energy for all Europeans package. This package involved evaluations and impact assessments of energy efficiency, energy performance of buildings, and renewables legislation, as well as various JRC and other studies supporting the implementation of the Energy Performance of Buildings Directive and the Energy Efficiency Directive (e.g. on one-stop-shops for building renovation, split incentives, accelerating energy renovation investments in buildings, market development of energy services companies (ESCOs) etc). It will build on the Long Term Renovation Strategies and the National Energy and Climate Plans by Member States, which will provide context for complementary EU action. They will feed into a country-by-country analysis that will accompany the Communication. The work of EEFIG, notably its 2015 report⁵, will also support the analysis in order to build on experience from already ongoing actions (SFSB, InvestEU, Underwriting Toolkit, DEEP, etc.).

The analysis will take stock of recent studies, for instance the comprehensive study of building energy renovation⁶ and the uptake of nearly zero-energy buildings in the EU. Data collected through the Building Stock Observatory, the Energy Poverty Observatory, the Construction Sector Observatory, and other sources will contribute to the preparatory work. Preliminary findings from the ongoing study on 'Lessons learnt to inform integrated approaches for the renovation and modernisation of the built environment' will be considered. Recent studies on circularity and whole life carbon, at European, national and other levels, will further inform the Communication. A variety of studies and reports from stakeholders, industry associations, consumer associations, think-tanks, local, regional and national authorities, and other bodies, and feedback and input from consultation with stakeholders will contribute to the preparation of the Renovation Wave initiative.

No impact assessment will be carried out for this Communication. The broad range and diversified nature of the measures announced in this Communication do not allow for conducting an in-depth analysis already at this stage of policy development. The follow-up initiatives will be accompanied, where relevant, with impact assessments in their due time.

³ <https://www.covenantofmayors.eu>

⁴ <https://eu-smartcities.eu> (will soon move to the Europa domain with new URL: <https://smart-cities-marketplace.ec.europa.eu>)

⁵ "Energy efficiency – the first fuel for the EU Economy. How to drive new finance for energy efficiency investments"

⁶ <https://op.europa.eu/en/publication-detail/-/publication/97d6a4ca-5847-11ea-8b81-01aa75ed71a1/language-en/format-PDF/source-119528141>