

EU's Renovation Wave Initiative

Delivered with cities and citizens

Key messages:

The Renovation Wave Initiative is an essential instrument for Europe to become climate neutral by 2050. Europe's cities fully support this ambition and are ready to work in partnership with the Commission and other stakeholders to make it a reality. The Renovation Wave Initiative can successfully contribute to Europe's green and just transition, when it:

- increases the renovation rate to at least 3% per year combined with an average energy demand reduction of 75% to reach climate neutrality in 2050 in full respect of the principle of subsidiarity.
- combines programmes tailored to each building segment and district level renovation approaches. Cities need flexibility to decide the best approach for starting renovation projects, whether a staged-pathway or a single renovation process, depending on their local conditions, information, and available financial support. Community involvement must be encouraged in both approaches.
- is accompanied by appropriate funding and can leverage long-term investments. It should bring together relevant actors to design finance packages combining different types of funds, provide direct subsidies, and create opportunities for low-interest loans through a European Renovation Fund. It should also build on experiences developed with H2020 funding for smart cities and EIB funding.
- increases technical assistance to set up and operate coordination services such as local one-stop-shops. It must support participatory and inclusive approaches where city authorities and residents have an active role in the design and implementation of renovation programmes.
- supports vulnerable groups and public housing retrofits to avoid negative impacts by bringing together climate and social cohesion goals. Climate neutrality must be achieved through a just transition, which includes tackling energy poverty. A co-creation process with tenants can help make sure that renovation costs are balanced by energy savings and don't become a burden for residents.

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Executive summary

The Renovation Wave initiative can help trigger new investments to restart the economy, create quality jobs, and deliver a just and inclusive transition for European citizens. Cities will be central to making the Renovation Wave work in practice. They manage extensive portfolios of public buildings and they can also, depending on their legal authority and financial and administrative capacity, regulate, incentivise and assist with improving the energy efficiency of privately-owned buildings, and adopt local building regulations as part of voluntary commitments. Many cities have already committed to ambitious or even climate neutrality targets.¹ Delivering the EU Renovation Wave with cities and citizens will require:

- supporting district-level approaches to renovation, and allowing cities to integrate their local plans for producing and using renewable energies, decarbonising heating and cooling systems, to deliver on their climate adaptation plans with green and climate resilient buildings, and support alternative fuels infrastructure development.
- targeting not only easy to reach and easy to renovate buildings, but also increasing efforts to transform hard-to-reach and renovate building segments, and ownership structures. Cities are already stepping up by renovating public buildings, schools, social infrastructures, but this will not be enough to reach scale. Stronger support must be available for developing, testing, and scaling up innovative solutions for residential, commercial, heritage and conservation buildings.
- enabling cities to make use of all available instruments, combine public funding and private financing, and decide on the best approach to boost both rate and depth of renovations, whether a staged-pathway or a single renovation process, depending on their local conditions, information, and financial support available.
- supporting the creation of local and regional coordination services, such as one-stop-shops, to help building owners to renovate, as well as to develop co-creation and participatory approaches where cities and residents have an active role in the design and implementation of renovation programmes. Increased technical assistance for cities will be key to setting up and operating these services, and to build local capacities.
- establishing a European Renovation Fund² managed at EU level with fast-tracked project approval processes as it would give a significant boost to renovations. The EU should also provide direct subsidies for energy renovation and create opportunities for low-interest loans, and ease access to EIB financing for local, social, public, cooperative and affordable housing providers.
- reinforcing financial support for replication and upscaling of pilots and demonstration projects, building on experiences developed for instance with H2020 funding for smart cities, and increase technical assistance.
- achieving climate neutrality combined with a just energy transition in Europe, which includes tackling energy poverty. It should support vulnerable groups and social, public, cooperative and affordable housing retrofits to avoid negative impacts by bringing together climate and social cohesion goals.

¹ Cities leading the way on climate action, https://eurocities.eu/wp-content/uploads/2020/08/EUROCITIES_cities_climate_action_2019-1.pdf

² <https://www.renovate-europe.eu/about-the-campaign/renovation-fund-for-all-europeans/>

Introduction

The Renovation Wave initiative can help trigger new investments to restart the economy, create local jobs, and deliver a just and inclusive transition for European citizens.

The building sector, as the largest single energy consumer in Europe, has high potential for creating jobs, boosting the economy, and delivering on climate objectives. Doing this will require a huge effort to increase both the rate and depth of current energy renovations, which are estimated to be between 0.4–1.2% today.³ As 80% of today's buildings will still exist in 2050, the renovation rate would need to increase to at least 3% per year combined with an average energy demand reduction of 75% to reach climate neutrality in 2050.⁴

The housing sector has the responsibility to address social cohesion and emissions reductions, while creating local jobs and contributing to wellbeing for all. Providing affordable housing solutions with existing building stock will need to be supported to make the transition just and fair, and enhance social cohesion in European cities.

From a local perspective, the energy efficiency of buildings can contribute substantially to reducing greenhouse gas emissions, preventing energy poverty, stimulating the local economy and improving health. City authorities manage extensive portfolios of public buildings and they can also, depending on the legal authority and financial and administrative capacity, regulate, incentivise and assist with improving the energy efficiency of privately-owned buildings.

For the Renovation Wave to work in practice, it is essential that it supports local actors with both programmes at EU and national level tailored to each building segment (worst performing buildings, schools, hospitals, commercial buildings, residential) and encourages district level approaches to maximise local potential and carry out deep renovations.

Although conditions are not the same in all EU member states, the impact of state aid rules should also be addressed, as it can be an obstacle to the successful implementation of the Renovation Wave⁵ in many cities⁶.

Cities are crucial in the transition towards a climate neutral society. Many have already committed to climate neutrality targets and are implementing ambitious local building regulations as part of voluntary commitments. However, improving private buildings remains challenging. Collaboration with city authorities, and other key stakeholders, will be essential to ensure the Renovation Wave contributes to securing a just and green transition in Europe.

³ https://ec.europa.eu/energy/sites/ener/files/documents/1.final_report.pdf

⁴ EUROCITIES EU 2030 target plans https://eurocities.eu/wp-content/uploads/2020/08/EU_2030_target_revision_Policy_statement_final-1.pdf

⁵ UA EU Housing Partnership, Guidance Paper on EU regulation & public support for housing. 2017 https://ec.europa.eu/futurium/en/system/files/ged/3_briefing_note_2016_social_housing_and_state_aid_for_services_of_general_economic.pdf;

⁶ EUROCITIES statement on state aid and local public services, January 2016: <https://eurocities.eu/wp-content/uploads/2020/09/EUROCITIESstatementonstateaidandlocalpublicservices16012016final.pdf>

Fostering district level renovation approaches and integration

European cities implement action plans to reduce emissions, plan sustainable mobility and land use, build resilience to climate change, improve indoor and ambient air quality, fight energy poverty and enhance social cohesion. Buildings are a crucial element in all these local strategies. The new initiative should support cities to integrate policies at city and district level. This allows them to meet their objectives for production and use of renewable energy; heating and cooling systems; improving citizens' resilience through greater thermal comfort; social mix; sustainable mobility⁷, and a fair and just energy transition. The way buildings appear and the activities they harbour are central to liveable and sustainable cities, for example: green facades can make streets more attractive for walking and cycling, while increasing local resilience; bicycle parking and electric charging points would improve services and create better air quality. City authorities need the flexibility to decarbonise in the most cost-effective way, by using a combination of building and system level solutions to reduce primary energy demand, contributing to local objectives.

Buildings should be considered as part of a system at the district or community level, given that primary energy savings can be made at both the building and system level. This creates a more integrated energy system where district heating and cooling networks using waste heat and renewable energy sources are considered as part of the overall solution for decarbonising buildings. The community level approach can also help incentivise the installation of renewable energies in buildings without high consumption, which can be used in other buildings in the district.

There are several benefits triggered by district-level approaches: renovation plans can help to optimise costs, exploit co-benefits of different actions, and combine targeted interventions with long term renovation roadmaps integrated into wider city strategies to achieve sustainable energy, climate, transport, and air quality strategies. This must be done together with investments targeted at improving buildings through glazing, insulation, access to sustainable heating and cooling, which lowers the energy costs for tenants and owners.

The updated renovation strategies submitted by member states in 2020⁸ will be a key element of the Renovation Wave, including measures to increase both the depth and rate of renovations, and milestones to 2030, 2040 and 2050. It is crucial that member states implement supportive regulatory regimes that will scale up building renovation and support local governments. This may include improved transposition and enforcement of EPBD requirements, addressing existing state aid barriers, national building decarbonisation trajectories, minimum energy efficiency standards, guiding investments into energy efficient public building stock, and support to set up integrated local development plans and affordable housing schemes.

⁷ <https://eurocities.eu/latest/cities-recommendations-for-alternative-fuels-infrastructure-deployment/>

⁸ The requirement for EU countries to adopt a long-term renovation strategy is set out in the Energy Performance of Buildings Directive revised in 2018 (2018/844/EU).

Member states should also ensure they take into account the local level in the revision of their national energy and climate plans, as indicated in the regulation on the Governance of the Energy Union⁹, and in their long-term renovation strategies. Integration of local voluntary targets and plans would lead to better policy integration and increase the level of ambition and complementarity of National Energy and Climate Plans (NECPs) and Long-Term Renovation Strategies (LTRs).

The Renovation Wave should be accompanied by a strong governance mechanism that acknowledges the role and ambitions of city authorities in increasing renovation rates and delivering local projects, for example through voluntary commitments, targets, local partnerships, and multi-level cooperation frameworks with member states, where cities can participate in the design of retrofit strategies.

Address barriers to renovation for all building types

The Renovation Wave should focus on tackling the barriers in the hard-to-reach and hard-to-renovate buildings and ownership structures in addition to the easy to reach and easy to renovate properties. These include rented or multi-owner properties, condominiums and apartment buildings, historic buildings, and buildings owned/occupied by SMEs.

Public buildings, hospitals, schools, worst-performing buildings and social infrastructures can be a good lever to build momentum and kick-start renovations, as they are easier to reach, have simpler ownership structures, can attract investments, and act as a demonstrator. Cities are already renovating these types of buildings. However, they will not be enough to reach scale.

Stronger support must be directed to unlock renovation investments for all kind of buildings to decarbonise the overall building stock, especially those that are harder-to-renovate because of mixed ownership structures, limited fabric improvements, or conservation and heritage buildings for which more innovative solutions are needed. Smaller scale projects and pilots should be supported to test solutions for harder-to-renovate buildings that can be scaled up.

The scope of the new initiative needs not only to help increase the renovation rate, but also to address the quality of renovations including deep or staged-deep renovations, and emphasise the quality and circularity of materials used if it is to be an instrument capable of triggering a real wave of investments and projects across Europe. The Renovation Wave should be linked to the Strategy for a Sustainable Built Environment to ensure that the renovation of buildings incorporates the same main criteria as for circular buildings: minimum material use and maximum re-use of materials.

Local policy makers play an enabling role in designing the energy renovation market through local regulations, driving phase out of inefficient heating and cooling systems, managing public procurement processes, and developing public-private partnerships. Cities should continue to have the flexibility, especially concerning deep energy renovation, to decide the best approach, whether a staged-pathway or a single renovation process, depending on their local market, information, and financial support available.

⁹ Regulation (EU) 2018/1999 on the Governance of the Energy Union <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018R1999&from=EN>

When considering support to renovating public sector buildings, the focus should be wider than schools and hospitals, and should also cover residential and office buildings, which are in some cases owned or occupied by public authorities, while maintaining the operational capacity of those institutions.

Renovations will need to be done to a high standard to effectively reduce emissions and improve energy consumption to avoid performance gaps that will only make the targets harder to reach in the medium term.

The scope of actions planned by member states (for example in the long-term renovation strategies accompanying the NECPs) will need to provide financial and administrative support to target all kinds of public buildings, including those of local governments. They will be key to achieving mandatory targets at member state level.

Smart energy management systems, digitalisation and artificial intelligence

The potential for optimisation of existing energy systems should not be overlooked. Today, the existing building stock represents the main challenge for more efficient energy use in buildings as well as across the whole energy system. The smart readiness of buildings may evolve faster for devices and systems that are easily replaced and installed, than for other parts of the building's equipment such as Heating, Ventilation, Air Conditioning (HVAC) and Domestic Hot Water (DHW) systems due to higher costs of replacement, longer lifecycles and difficulties related to integration in buildings. Energy management systems and decarbonised networks are also key to reducing emissions from historical building stock where material improvements are limited.

Some cities have already developed demonstration projects, notably through H2020 funding for smart cities, but financial support is also needed to replicate these projects in other city districts and other cities. Deep renovation projects are challenging to implement because of high costs, the need for specialised skills, and tailored information and advice to homeowners. For these projects in particular, integrating energy management systems can lead to high energy savings.

As Artificial Intelligence (AI) is becoming more advanced and more accessible, city authorities are increasingly experimenting and piloting AI, in many cases in combination with other tools such as the Internet of Things (IoT), 5G or Big Data technology, leveraging their potential while understanding new patterns and trends. As with the first smart city projects, cities use the results and lessons from AI experimentation to develop action plans and strategies, often in collaboration with national governments and with the support of local and regional stakeholders.¹⁰

The EU should continue supporting innovation in the renovation sector, the integration of new technologies and approaches, and replication of successful innovations. Many cities have set ambitious decarbonisation targets, examples include voluntary commitments (i.e. through the Covenant of Mayors) or deep systemic transformation pilots through the Horizon Europe Mission on Climate

¹⁰ EUROCITIES Statement People-centred Artificial Intelligence (AI) in cities, April 2020, <https://eurocities.eu/wp-content/uploads/2020/08/Eurocities-statement-on-AI.pdf>

Neutral and Smart Cities for near-zero or positive energy buildings, through world-class digital infrastructure and the deployment of IoT and related applications at scale.

It is important for cities that technological advancements are sustainable and lead to energy-efficient processes. Telecommunication systems such as 5G, together with other new digital technologies, are a key facilitator for cities to tackle climate challenges and to support the European Green Deal.¹¹

Information, participation and engagement

Initiatives to support the development and implementation of local/regional coordination services for building retrofit, for example through one-stop-shops, should be further encouraged and scaled up. European cities are working through local/regional one-stop-shops to support building owners through the complex process, including: building audits; technical advice; financial advice (to coordinate various funding schemes and private finance offers); supply chain development; and behaviour change advice to building occupants after renovation. They help to develop the right mix of instruments to be mobilised according to the building conditions and the potential return on investment.

Access to trusted advice and information has a great impact on increasing confidence and easing the process, especially for private owners starting a renovation project. Increased technical assistance is necessary for the set up and development of one-stop-shops, to mobilise the right expertise and staff. The Renovation Wave should support co-creation and participatory approaches where cities and residents have an active role in the design and implementation of renovation programmes¹². Having the opportunity to influence the scope and cost of the renovations together with the housing companies, landlords and owners' associations in participatory models, would be key to reinforcing the security of tenure in rented properties, and helping ensure that renovation costs are balanced by energy savings as much as possible. Capacity building activities for local housing providers should be envisaged for a better uptake and more coordinated approach when combining different funding and financing sources.¹³

Energy Performance Certificates (EPCs) should be improved and expanded, along with ensuring their reliability and consistency across member states. EPCs could be expanded to become Building Passports, which provide owners with a renovation pathway to zero (or near zero) energy buildings. Given the high cost of deep retrofit, some building owners will want to take a staged approach to renovation. Building Passports can, if used correctly, raise awareness of the benefits of energy renovation and help develop a staged approach to renovation and pathways to zero, near zero, and possibly positive energy buildings, ensuring 'no regrets' decisions and investments. If accompanied by passports for building materials, they can be useful tools to inform all actors of the construction sector on the quality and safety standards of secondary materials and therefore encourage circularity (recycling, reuse, refurbish) and foster sustainability throughout a building's life-cycle. Despite relatively high recovery rates of used materials, the construction sector will need to be even more ambitious in its waste management practices if it is to fully embrace Europe's circular economy and

¹¹ EUROCITIES Statement The fifth generation of telecommunications system (5G) deployment in cities, June 2020, https://eurocities.eu/wp-content/uploads/2020/08/EUROCITIES_statement_on_5G_.pdf

¹² www.responsiblehousing.eu

¹³ Action Plan of the EU Urban Agenda Housing Partnership, Action 11 Recommendations on EU funding of affordable housing, page 50 (2018)

thus contribute to the renovation wave. They can also potentially be used as a basis for minimum energy efficiency standards or performance regulations.

An Open Platform for Renovation, engaging all actors of the sector and stakeholders, including financial partners, to design, plan, and implement renovation strategies is welcome. However, the Platform will need to be complementary to existing strategies and partnerships already established at the local level and address the current scarcity of building data on energy use, actual renovation rates, costs of renovation.

The European Building Stock Observatory should be reinforced to update data, monitor changes related to the building stock in the EU and evaluate the impact of policies. Ideally it should also integrate indicators to help predict the effects of energy savings after renovations, taking into account users' energy behaviour. The Observatory should also create links with the future common European Data Spaces. Common European Data Spaces will explore actions for improving the interoperability of smart buildings and products, with the objective of improving energy efficiency and help integrate renewable energies, benefitting from Business to Government data-sharing schemes, and supporting decision making from all actors of the chain.

Minimum energy performance requirements in renovations

For Europe to reach climate neutrality in 2050, the renovation rate would need to increase to at least 3% per year combined with an average energy demand reduction of 75%.¹⁴

The introduction of legislation on minimum energy performance requirements at EU level could potentially trigger renovations, effectively target the worst performing buildings, and provide a realistic timeframe for planning renovations. Currently, measures to set mandatory minimum energy requirements for certain building elements and technologies, or for the full building, varies across member states.

Building codes and standards in the construction sector are useful tools to achieve climate goals, but they can lead to higher costs, thus endangering the capacity of cities to invest in renovation. It is therefore important that cities are involved in the assessment and design of these standards to ensure better uptake.

However, to be successful, this legislation would have to be accompanied by a framework that would mobilise funding, finance and technical support as well as measures to advise and support building owners and occupants, especially the most vulnerable.

Prior to introducing such requirements, it would also be important to consider including conditions such as phasing out oil and coal fired heating systems or other inefficient technologies, through the right financial incentives.

Moreover, the introduction of minimum energy requirements will need to rely on robust datasets, building assessment tools, and metrics. The information about the specific building, for example

¹⁴ EUROCITIES EU 2030 target plans https://eurocities.eu/wp-content/uploads/2020/08/EU_2030_target_revision_Policy_statement_final-1.pdf

through renovation passports, should be shared to identify technical no-regrets solutions and carry out assessment costs. It would help public authorities to set the ambition of a specific building project, and to inform contractors about the use of energy efficient appliances and circularity of materials.

Cities should have the flexibility to introduce minimum energy performance requirements higher than in national building codes to contribute to wider policy objectives.

Funding & financing

Building retrofits involve significant up-front costs, long payback periods, and in some cases split incentives. The Renovation Wave should mobilise existing tools and allow for bundling different funding sources, minimising administrative burdens. Green investment for economic recovery is already a priority of many European cities, especially in the post Covid-19 context.

The Renovation Wave will require the private sector, member states and cities coming together to design finance packages for retrofit schemes that would combine different types of funds. This includes the use of guarantee funds at member state level to underwrite risk and reduce the cost of capital for building renovation, it should also increase technical assistance available to cities and building owners to build the expertise needed for project development. Public subsidies must be combined with measures to prevent capitalisation.

EIB instruments can become an important financial resource, but to achieve their full potential, it is important to design a framework at regional and national level that aggregates demand and scales capacity of local authorities and encourages new business models.

The establishment of a European Renovation Fund¹⁵ managed at EU level with fast-tracked project approval processes would give a significant boost to kick-start renovations. This Renovation Fund would be open to city authorities, social, public as well as cooperative housing companies, and provide innovative tendering and technical assistance to deliver deep or staged-deep energy renovation projects, making sure that the investments would go towards the 2050 goals of decarbonising the building stock. It could be used to leverage private financing or national/subnational funding for the renovations in the medium and long term.

The EU should also provide direct subsidies for energy renovation and create opportunities for low-interest loans and ease access to EIB financing for social and affordable housing providers.

Fight energy poverty and support vulnerable groups

Climate neutrality must be achieved through a just transition and tackling energy poverty. The Renovation Wave needs to support vulnerable groups and the renovation of public housing, avoiding negative impacts on low income or energy poor households, and make the European energy transition just and fair.

¹⁵ <https://www.renovate-europe.eu/about-the-campaign/renovation-fund-for-all-europeans/>

Renovation of rented homes should aim for improvements that do not threaten the security of tenure and include direct subsidies to fight energy poverty for vulnerable homeowners and tenants. A co-creation process with tenants can help make sure that renovation costs are balanced by energy savings and don't become a burden for residents.

The Renovation Wave should take into account voluntary commitments from local authorities to set up and advance their renovation measures in the context of integrated local development plans and affordable housing schemes that help prevent possible negative side effects of renovation programmes.

The inclusion of energy poverty measures in the national renovation strategies and the obligation to have 'social' requirements in energy efficiency obligation schemes are useful¹⁶, but not enough to address the challenges faced by vulnerable groups, which have been further exposed by the Covid-19 crisis. The Renovation Wave represents an opportunity for a more ambitious and systematic examination of energy poverty, such as specific and minimum earmarking of energy efficiency obligation schemes and alternative policy measures for energy poor households.

The Renovation Wave should also take into account the gender dimension of energy poverty, as there is still a need to advance energy efficiency measures and tackle energy poverty by addressing gender issues related to energy poverty in general and housing in particular. Access to systematically collected gender-disaggregated data on the gender-energy-poverty connection in housing would enable a more strategic approach to addressing the underlying challenges that perpetuate energy poverty among women, and especially among groups of vulnerable women (e.g. single women, single mothers, elderly and retired single women). It is vital to consider housing as the place of households' energy consumption in this process.¹⁷

Boost skills and quality jobs

Preparing the construction sector to carry out renovations both in terms of depth and rate will require a skilled workforce. The Renovation Wave must create opportunities to up-skill workers through training programmes covering the latest energy efficiency technologies. It also has to cover programmes to re-skill people that come from different sectors, to increase the workforce available in the construction industry. This can be ensured through adult learning programmes as well as through a good cooperation with Vocational Education and Training (VET) providers. The Renovation Wave must be linked to the updated EU Skills Agenda, as well as European Social Fund+ and it needs to take up the principles of the European Pillar of Social Rights in the construction sector. The Renovation Wave can potentially be one of the main incentives for job creation at the local level in the Covid-19 recovery. If used well, it can create an opportunity to generate new quality employment at local level, while focusing on fair contracts, decent working conditions and access to social protection. It can also contribute to implement Corporate Social Responsibility in the construction sector, fostering good governance principles in an economic recovery that is also safe and fair.

¹⁶ Art 7.11 Energy Efficiency Directive

¹⁷ Action Plan of the EU Urban Agenda Housing Partnership, Action 10 - Recommendations on the improvement of EU gender-poverty-energy nexus data, page 46, (2018)