ICLEI EUROPE BUILT ENVIRONMENT POLICY BRIEFING

Transforming Europe's building stock for a fair, affordable, climate-neutral future

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Our built environment shapes our daily lives. In the next decade, Europe's built environment as much as our society will need to go through an important transformation towards climate neutrality, while being challenged by a series of interconnected crises. Climate change is projected to bring frequent droughts, rising sea levels, floods and other extreme weather events which threaten the very fabric of our buildings and other key infrastructure[1]. At the same time, urbanisation trends project that a majority of the population will be concentrated in urban centres in the next decade[2]. During this period, the world will need to grapple with these combined challenges of urban expansion, global biodiversity loss, and climate impacts. These issues are interconnected, as our built environment and urban infrastructures rely on biodiversity services, water supplies, and a stable climate. At the same time, uncontrolled urban sprawl accelerates biodiversity loss and damages carbon sinks. Additionally, the growing demand for housing in urban areas, combined with increasing economic inequalities, has triggered a global housing crisis, which is also severely felt in European cities[3].

Facing these challenges, the European Union has put the building sector at the heart of its climate neutrality transition. In 2020, the European Green Deal set an actionable framework to respond to these challenges by making Europe more resilient, resource-efficient, just and competitive with the goal of becoming the first climate-neutral continent by 2050. The new European Commission coming in office in 2024 has re-emphasised, among other things, the need to address today's housing and energy poverty crises[4]: an objective closely linked to transforming our built environment towards a more sustainable and climate neutral one while ensuring better and more affordable houses for Europeans.

Today, 35% of Europe's buildings are older than 50 years and around 75% of the entire EU building stock is significantly energy inefficient. Also, according to Eurostat, 10% of European households in cities are overburdened[5] by housing and energy costs. Besides being costly and inefficient, the EU's building stock accounts for 40% of the EU's final energy consumption and 36% of EU energy related emissions[6]. In addition,

1 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52018DC0738

2 www.eea.europa.eu/en/analysis/publications/addressing-the-environmental-and-climate-footprint-of-buildings

3 www.europarl.europa.eu/RegData/etudes/ATAG/2024/762414/EPRS_ATA(2024)762414_EN.pdf

4 https://ec.europa.eu/commission/presscorner/detail/en/statement_24_3871

5 https://ec.europa.eu/eurostat/web/products-eurostat-news/w/DDN-20230202

6 https://energy.ec.europa.eu/topics/energy-strategy/clean-energy-all-europeans-package_en

5-12% of the EU's total national emissions result from material extraction, manufacturing, construction and the renovation of buildings. In total, the construction sector generates more than one third of the total waste generation in the EU.[7] These numbers make it clear that creating an affordable, energy efficient, climate-neutral building stock is crucial to achieve the EU Green Deal objectives.

While technologically possible, transforming Europe's buildings in the next few years will require significant investments and pose monumental social, cultural, environmental and economic challenges, especially for cities. In addition, the required investments will have to meet a set of social and environmental conditions to support the double objective of more sustainable but also more affordable housing.

This policy brief outlines the major challenges associated with the transformation of European building stock from local governments and authorities' perspective, in addition to discussing current legislation in place. The brief will then present suggestions to address these challenges and turn the EU building stock from a major roadblock to a driving force for a climate-neutral, fair and sustainable future.

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7 www.europarl.europa.eu/legislative-train/theme-a-european-green-deal/file-strategy-for-a-sustainable-built-environment

1. What are the challenges local governments face in making Europe's building stock affordable, energy efficient & climate-neutral?

Local governments and authorities have a significant role and stake in facilitating a sustainable transition of the EU's building stock, as they manage social housing, public buildings owned by municipalities and infrastructure such as schools, sport facilities, meeting centres, libraries and medical facilities. Additionally, they provide various permits which allow the transformation of our cities. As policy and financial measures ultimately come together to address social, environmental and economic policies in an intertwined and inclusive way, they will have a key role in facilitating and managing the necessary changes across the building value chain. In short, local governments and authorities are expected to find and manage solutions to the following interconnected challenges at the same time and in a holistic way:

DECENT AND AFFORDABLE LIVING SPACES FOR ALL

Recent polls show the housing crisis in many European capitals is a leading source of concern[8] for Europeans. From soaring homelessness, to ~40 million Europeans unable to heat their homes properly[9] and over 10% of Europeans spending more than 40% of their income on housing,[10] buildings are a parameter for the economic and social resilience, stability and safety of society - and ultimately of our democracies. While aiming to reach climate neutrality, local governments should create more sustainable and affordable housing in and around urban areas without compromising other important objectives such as preservation of local biodiversity and geodiversity, health and food security.

DENSIFICATION AND SOIL SEALING

An extensive expansion of urban areas by new development and housing projects - while beneficial for reducing pressure on housing markets - will drive urban sprawl effects. The results are often a negative feedback loop of land-take, soil sealing, urban heat, increase of commuting, flooding and water run-off and loss of biodiversity and ecosystems with detrimental effects on people's life quality and health. In this regard, affordable housing in city centres could in some cases also help address the "urban sprawl", soil sealing and land artificialisation, and contribute to the wider sustainability objectives of our cities. However, there is no silver bullet for such solutions. Local governments and authorities are expected to find the right balance between using available space in urban areas, protecting their peri-urban ecosystems and biodiversity and ensuring climate resilience alongside increasing populations and pressures.

RESTORING AND PROTECTING LOCAL CULTURAL HERITAGE

Europe's historical building stock is an important cultural heritage and a source of pride and identity. It requires careful planning of interventions to support transition to climate neutrality without losing heritage qualities - taking into account the whole life cycle of each building, the materials it contains as well as its energy use. Local governments will be tasked with the triple challenge of protecting their cultural heritage and attractions, while finding new, technologically advanced solutions that are also affordable for owners and inhabitants.

8 www.politico.eu/article/gimme-shelter-cost-of-living-crisis-squeeze-europe-housing

9 https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficient-buildings/renovation-wave_en#main-focus-of-the-renovation-wave

10 https://european-social-fund-plus.ec.europa.eu/en/news/commission-launches-toolkit-support-social-housing-member-states

STRUCTURING LOCAL AND REGIONAL VALUE CHAINS

As resource scarcity continues to rise, circularity is emerging as a crucial concept for transforming the renovation and construction sectors of the building industry. Minimising resource consumption by increasing secondary raw material used for deep renovation and new construction goes hand in hand with developing local and regional value chains. With their knowledge on their local economic ecosystem, local authorities are expected to play a role in involving, requalifying and mobilising stakeholders, and structuring local value chains. And they can be instrumental in developing adequate standards ensuring the objective of climate-neutral, healthy and affordable buildings and removing barriers in procurement processes.

MULTILEVEL AND MULTISTAKEHOLDER GOVERNANCE OF THE TRANSFORMATION OF THE BUILT ENVIRONMENT

Local and regional governments are an integral part of EU governance structures. At least 70%[11] of the European Green Deal needs to be implemented at the local or regional level. This requires close collaboration between all levels of governance in the EU: between local, regional, national and EU levels. However, as shown in the Commission's assessment of the National Energy and Climate Plans[12], not all Member States managed to establish structured and permanent dialogues with their cities and regions to implement their climate and energy objectives. To be able to implement all necessary elements of the Green Deal and to transform the building stock in cities, there is the need for establishing structured dialogues with the local and regional level at the EU and national level. This would not only help implement the EU objectives, but also bring a number of improvements, such as continuous feedback between all levels of governments, shared responsibility, and a better, territorially adapted, place-based interventions as well as improvement of political framework conditions in support of cities and regions.

Cooperation at the national level has to accelerate to ensure that local context, i.e., needs, dynamics, and potentials, is taken into account to the extent necessary for broad public support of planned renovation and energy efficiency measures at appropriate standards. Public backlash over the German government's introduction of a new building energy law (GEG -Gebäudeenergiegesetz) - which was meant to implement and meet requirements of EU directives in Germany - suggests that locally adjustable, clear roadmaps for new requirements help standards are a possible solution for ensuring public acceptance of new measures. The development of a consistent and coherent approach needs to build on provisions available in the Directives.

LOCAL TRANSFORMATION REQUIRES LOCAL SKILLS

One-stop-shops and effective outreach and support to vulnerable households must play a key role in the building stock's fair and inclusive transition. For example, evidence from projects such as POWERPOOR[13] has shown that local governments are well positioned to identify and act as contact points for energy-poor individuals and households, e.g. via the operation of local one-stop-shops and by working together with key local services (health, social, etc.).

However, it requires local knowledge and a sufficient number of skilled local professionals for designing and shaping targeted measures for local development projects, sustainable public procurement and the economically sound redesign of local energy systems. While projects like URBANEW, which focused on a systemic transformation of residential, commercial, public and private buildings in seven Spanish cities

11 https://eu-mayors.ec.europa.eu/en/The-battle-for-the-Green-Deal-will-be-won-or-lost-in-cities

12 https://commission.europa.eu/energy-climate-change-environment/implementation-eu-countries/energy-and-climate-governance-and-reporting/national-energy-and-climate-plans_en

13 https://powerpoor.eu

with seven different climatic conditions, provide opportunities for cities to learn different skills from each other and transfer these new skills to other municipal staff and stakeholders, these individual efforts will not be enough[14].

Cities and regions need adequate data, knowledge, in-house skills and workforce within public local administrations to implement national and EU legislation and fulfil their societal responsibility. As the Local Staff for Climate campaign shows, one of the key challenges in the transition of the building sector, similar to many other sectors impacted by the shift towards climate neutrality, is the lack of capacity at the local level. This includes both a shortage of personnel and a deficiency of qualified staff for specific tasks. The campaign study identifies a potential of 214,000 new jobs in local governments across the European Union amounting to around € 16 billion per year. It is hence necessary to identify concrete shortages of skills and capacity gaps in assessing the building stock[15].

FUNDING FALLS SHORT OF INVESTMENT NEEDS

Under the revised Energy Performance of Buildings Directive, the financial support framework for building renovation and decarbonisation is essential for reaching a zero-emission building stock by 2050. Member States are required to specify investment needs and financing resources in their National Building Renovation Plans (NBRPs). However, it is clear that public funds will not be enough to respond to the depth, breath and scale of the challenge. To facilitate the necessary, massive transformation of Europe's building stock to reach climate neutrality in a sustainable, resilient, fair and resource efficient way needs an even stronger mobilisation of public and private funds for locally responsive, holistic programmes. New and expanded types of financial vehicles will be needed. Among them, those aimed at vulnerable groups, in which public administrations should provide the necessary guarantees, will stand out.

14 https://netzerocities.eu/spains-pilot-activity-multi-stakeholder-innovative-and-systemic-solutions-for-urban-regeneration-spain

15 www.localstaff4climate.eu/the-study

2. How will the EU legislation address these intertwined challenges of the building sector and what is in it for local and regional governments?

Since the launch of the European Green Deal, the EU has initiated a number of legislative proposals with high relevance for the decarbonisation of the building sector that require action by local governments and authorities. As under the second term of the von der Leyen Commission, the EU is committed to staying on the course to implement the Green Deal, this section takes a quick look at the key Green Deal policies that would shape the transformation of the building sector but it refrains to comment on the potential upcoming proposals such as Affordable Housing Strategy and Citizen Energy Package.

In October 2020, the EU Commission presented its Renovation Wave Strategy[16] for "*greening our buildings, creating jobs, improving lives*". The main objective of the Strategy is to at least double the annual energy renovation rates of buildings by 2030, while fostering deep energy renovations. The strategy is followed by concrete regulatory, financing and enabling measures to speed up the renovation of buildings by making them more energy-efficient and less carbon-intensive over their entire lifecycle. The Fitfor55 Package sought to implement the Renovation Wave[17] and the 2030 and 2050 objectives enshrined in the European Climate Law by reviewing existing EU climate-related legislation across 12 policy areas to push energy efficiency, electrification and renewable energy targets to this end[18].

Many of these legislations are key for the future of urban centres and Europe's building stock, such as the recast of the European Performance of Buildings (EPBD), Renewable Energy and Energy Efficiency Directives as well as the introduction of the Emission Trading System for buildings and road transport (ETS II) and the Social Climate Fund. In this section, three key pieces of legislation: the revision of the **EPBD**, the introduction of the **ETS II** and the **Social Climate Fund** are highlighted. The transposition of these relevant Directives into national legislation, will be crucial and local and regional governments should be actively consulted during their transposition phase. However, time is pressing, and the horizon for the transposition of this legislation is far from the timeframe set by the reality and urgency of the climate emergency and affordable housing crisis. For this reason, local and regional governments, while on one hand actively reach out to their national governments to support the transposition of this legislation into the national legislation, they should also continue to act in the shorter term and prepare for when they become a reality.

Revision of the Energy Performance of Buildings Directive (EPBD): The new rules adopted under the EPBD are meant to enable an EU-wide emission reduction target of at least 60% in the building sector by 2030 (compared to 2015 levels)[19] through renovation action and targeted financing and investments. Some key elements introduced under the recast EPBD make it a key legislation for the buildings sector[20]:

- New 'Zero-emission Building Standard' for new buildings (instead of nearly zero energy building standards) considering whole life carbon emissions of buildings;
- Minimum Energy Performance Standards for highly inefficient non-residential buildings;
- Progress targets for the renovation of residential buildings;

16 https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficient-buildings/renovation-wave_en
17 https://ec.europa.eu/commission/presscorner/detail/en/IP_21_6683
18 www.epc.eu/content/PDF/2021/Renovation_wave_PB.pdf
19 https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficient-buildings/energy-performance-buildings-directive_en
20 www.bpie.eu/publication/the-epbd-decrypted-a-treasure-chest-of-opportunities-to-accelerate-building-decarbonisation

- National building renovation plans;
- Updated Energy Performance Certificates;
- Building renovation passports and one-stop-shops;
- Stronger focus on social requirements and a strengthened financial framework.

The EPBD has introduced a process to develop the EU-wide Minimum Energy Performance Standards for non-residential buildings. For residential buildings, Member States have the flexibility to choose the tools for achieving required improvements of the residential building stock, such as Minimum Energy Performance Standards, technical assistance and financial support measures. For the rest of the national building stock, Member States are free to decide whether they wish to introduce Minimum Energy Performance Standards. It is clear that voluntary standards will not deliver the scale and quality of deep renovations that are needed to decarbonise Europe by 2050. Thus, minimum standards are needed in all cases and must be introduced in consultation with local and regional governments, with a clear roadmap of incremental tightening, to de-risk new business models and the investment of the private sector. For the first time, the EPBD recast also introduces an approach to building lifecycle evaluations that takes buildings' climate impact into account.

More specifically, the EPBD requires all Member States to develop National Building Renovation Plans that cover both public and private, residential and non-residential buildings. For the development of these plans Member States need to consult regional and local authorities to take into account local actions plans or investments via public consultation before submitting them to the European Commission. The public consultation should allow for ex-ante and ex-post evaluations of plans by local actors "*to ensure the accessibility, convenience and affordability of the renovation solutions.*" In addition, the EPBD asks Member States to establish a one-stop-shop each per 80.000 inhabitants and/or per region, or in areas where the average age of the building stock is above the national average. The directive furthermore proposes an integrated district approach to building renovation for which Member States may empower regional and local authorities to identify districts in order to roll-out Integrated Renovation Programmes (IRPs). These IRPs should address social aspects, energy, mobility, green infrastructures, waste and water treatment, and other aspects important to urban planning, and take into account local and regional resources, circularity and sufficiency.

The EPBD recognises that these, and other measures, require significant skill sets, and explicitly asks Member States to "*put in place measures and financing to promote education and training with a view to ensuring that there is a sufficient workforce with the appropriate level of skills* [...], *especially targeting SMEs, including microenterprises, as appropriate*". Complementary data and knowledge should be made available by Member States to "*ensure that local authorities have the necessary resources for data and information management" and "have access to data on energy performance of buildings on their territory* [...] *to facilitate drafting of heating and cooling plans.*" In the review of national draft building renovation plans the European Commission will assess whether "*national and local authorities need technical assistance to facilitate the implementation of these plans; and whether the plans provide for sufficient skilled workers and effective skilling and training initiatives.*"

By 2030 "*All new buildings should comply with the Zero Emission Building (ZEB) standard and should have their lifecycle global warming potential calculated through the EPC*". Circularity is mentioned throughout the text as a means to achieve this target. It does not, however, define explicit standards for circular materials. Instead, it refers to the Construction Product Regulation (EU) No 305/2011, currently under revision. Whilst new product requirements will ensure that the design and manufacturing of construction products make them more durable, repairable, recyclable and easier to re-manufacture, new specific standards should be proposed for reused materials. The revised CPR, which should enter into force in autumn of 2024, is needed to bring a consistent regulatory framework for construction materials to make them more circular. The curve to integrate these new standards on the market will be progressive, though, with tailored timelines for different materials.

While the recognition of lifecycle emissions and the use of sustainable and circular materials is important, it should first be noted that **appropriate use and reuse of the building stock must take priority over demolition and new construction**. From a sustainability perspective, maintaining, repairing, reusing and retrofitting are always preferable options.

Although Article 2.57d of the EPBD says "*circularity' means the reduction of the need for extraction of virgin materials* [...] *through the extension of the lifetime of products and buildings*", the recommendation to prioritise renovation and adaptive reuse over demolition and new build "*as appropriate*" (in the EPBD's preamble) is not strong enough to enforce the principles of circular economy and the New European Bauhaus initiative. The conceptualisation of more modular and 'disassemble-able buildings' should be encouraged in the planning phase to increase the buildings' lifespan and to make their use and functions more adaptable and flexible. To accomplish this, **digital material passports**, similar as foreseen in the Constructions Products Regulation, act as efficient tools that enable better traceability of materials by identifying their history, quality, use, maintenance and, thus, reuse potential.

However, this measure should come alongside a strict requirement for systematic materials sorting when a building is dismantled. Although the Waste Framework Directive requests Member States to "*take measures to promote selective demolition in order to* [...] *facilitate re-use and high-quality recycling by selective removal of materials, and to ensure the establishment of sorting systems for construction and demolition waste*", it does not give clear recommendations on the kind of measures. A possible incentive could be "*obligatory pre-demolition audits*" which could create opportunities for reuse of materials, and to support the development of a functioning market for secondary building materials, which are mandatory in some Member States such as France.

The European Commission is working on the establishment of End-of-Waste Criteria of Construction and Demolition Waste, which might be integrated in an upcoming Waste Directive (2008/98/EC) revision. This could seize the opportunity to add more binding measures for a systematic sorting.

The ETS II is another key legislation[21] for the transformation of the building stock. It introduces a new emissions trading system to reduce emissions from fuel combustion in buildings and road transport. ETS II will function like the EU ETS, as a 'cap and trade' system but will cover emissions upstream. In that sense, it aims to target more fuel suppliers, rather than end consumers. Nevertheless, this additional price on carbon emissions will certainly be challenging for low-income households and small businesses who might not be able to pay for increased prices or afford investments in solutions, such as heat pumps or electric cars. To mitigate the significant risk that the ETS II will create economic burdens for vulnerable households, the **Social Climate Fund (SCF)** legislation was introduced. The SCF will enter into force in 2026 together with the new ETS II scheme for buildings and transport sectors. The Social Climate Fund is expected

21 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2023.130.01.0134.01.ENG

to provide €86 billion over the 2026-2032 period (€65 billion fixed from auctioning of allowances, plus at least 25% of Member States' own contributions from ETS II auction revenues). To benefit from the Fund, each Member State should submit a Social Climate Plan to the European Commission by 30 June 2025 and Member States can decide to spend their allocated amount of funding for the following two measures:

- Measures and investments for increasing energy efficiency of buildings, building renovation, decarbonisation of heating and cooling in buildings, and the uptake of zero and low-emission mobility and transport;
- Measures providing temporary and limited direct income support to the most vulnerable households.

Instead of focusing on short-term cost relief activities like direct bill payments, it is important to invest as much as possible in long-term energy efficiency measures and energy-saving infrastructure.

Additionally, the amount of money in the SCF will never be enough to address the transport and energy poverty at the needed scale which can also provide a ground for a systemic transformation of buildings sector (This is particularly concerning given that this funding will not become available until 2027, coinciding with the conclusion of NextGenerationEU, which will reduce opportunities for blending resources for larger transformative investments.). This brings an additional necessity to plan and invest that amount properly through a multilevel governance approach and to ensure that every drop of the SCF funding serves its purpose and reaches the most vulnerable to improve their lives and livelihoods when ETS 2 enters into force. It is also required by the legislation as the Article 4 and Article 5 of the Social Climate Fund legislation requires Member States to ensure public consultation with regional and local governments, as well as with social actors and other stakeholders. Article 22 of the Social Climate Fund requests them to ensure complementarity, synergy, coherence and consistency among different instruments at Union, national and local or regional levels, both in the planning phase and during implementation. In that sense, it is of utmost importance that local and regional governments contact their national authorities in the drafting phase of their national Social Climate Plans to ensure the multilevel governance approach.

In addition to the traditional regulatory approach, the European Commission presented its **New European Bauhaus (NEB)** initiative in 2020. The New European Bauhaus seeks to connect the **European Green Deal** directly with citizens by challenging all actors of society to imagine and build together a beautiful, sustainable and inclusive future. By actively endorsing a multilevel approach to the transformation – from global to local - the New European Bauhaus is seeking to directly explore ways to support small-scale and place-based initiatives by individuals, neighbourhoods and local communities. With its spirit of seeking place-based approaches, the initiative aims to act as an incubator of innovation and creativity and is of high relevance for local authorities.

3. Recommendations for turning the building stock from roadblock into driving force?

The EU legislation in the buildings sector and their transposition in the national laws will bring a number of obligations, opportunities and challenges to local and regional governments. The social, cultural, economic and environmental costs and impacts of regulatory changes will ultimately manifest at the local level. An additional challenge is the legislations that will transform our cities and regions that are designed at the EU or national level without structured and regular dialogue with local and regional governments. As a result, for instance, the requirement under the EPBD to establish one-stop-shop each per 80.000 inhabitants does not reflect the average size of neighbourhoods in medium-sized cities. During the implementation of the legislation, there will be a need for more ambitious local policies, multilevel governance that provide regular and positive feedback loops between all levels of governments and integrated finance to accelerate the transformation of our buildings.

These developments put local governments in a unique position to drive a sustainable, fair, and place-based change but this also currently poses far too large of a task for limited local and regional capacities, technical expertise and budgets. This section lists recommendations for all levels of governments to address some key challenges and limitations and turn the European building stock from roadblock into driving force:

a. Recommendations for national and EU level: Establish multilevel governance and empower local governments to transform the building sector

MULTILEVEL COOPERATION

- The Commission should provide best practices and guidance to Member States regarding how to set up multilevel governance mechanisms and dialogues and review their set up, implementation and reporting.
- Under the supervision of the European Commission, Member States should establish permanent, structured and systematic multilevel dialogues with regional and local level through clear mechanisms for the co-creation and review of strategies, policies and initiatives including the implementation of legislation related to building stocks such as EPBD, Social Climate Fund and ETS II. These dialogues should also be supported through a technical multilevel working group.
- These mechanisms must ensure cooperation across relevant policy areas, especially in planning bodies responsible for urban planning, climate change, energy, social policies and cultural heritage and domain integration.
- Member States need to collaborate with local and regional authorities for ramping up social housing, which is currently 20% more energy efficient than the regular building stock in the EU with an aim to decrease pressure on the housing market.

TRAINING AND SKILLS

- The EU and Member States should set up national programmes and an EU level coordination mechanism to coordinate training offers for local and regional civil servants, developed under, for example, the Technical Support Instrument (TSI).

- National and regional governments must build capacity and multidisciplinary expertise through collaboration with academia to provide education, training and upskilling/reskilling at all levels in order to address the skills gap and to ensure the safeguarding of cultural heritage against c limate change.

- Training clauses in public tenders should offer a direct opportunity to reskill and upskill the workforce at the local level. These should be developed, and their application encouraged in the national legislation. When awarding a contract, the clauses could ensure that contractors commit to training their staff during the project in a specific set of skills.

- Soft skills, gender approaches and intersectional perspectives will play a key role in cohesive and inclusive transition. Regional and national governments should support cities' with building soft skills to help with their urban, climate and energy transition planning.

FINANCING

- Financing remains a major obstacle for citizens and public administration at the local level to achieve massive renovation and rehabilitation that is required to achieve the envisaged objectives. Designing financing schemes, it will be key to have legislative flexibility and direct communication between local, regional and national governments to ensure that financing measures respond to the needs of cities.

- The overall funding approach towards local governments should move from 'funding by project' or by topical priority to 'funding by programme'. This is necessary to enable the holistic, cross-sectoral design of development projects.

- Local governments should be involved in the decision-making process pertaining to SCF spending allocation at Member State level.

- Under the EPBD, the financial support framework for building renovation and decarbonisation is essential for reaching a Zero-Emission Building (ZEB) stock by 2050. Member States are required to specify investment needs and financing resources in their National Building Renovation Plans (NBRPs). They should also encourage the use of various financing instruments for building renovations. More broadly, public funds should be used as guarantees to attract private investors as the scale of the transition would require the mobilisation of both the public and private funds.

- Previous experience of financing private interventions should carefully be considered in order to establish national efficient financing tools for energy retrofitting. These tools should consider direct financing for income building owners and based on the energy performance achieved with the intervention.

REGULATORY MEASURES

- In the European markets, secondary raw materials are still reported to be more expensive than virgin raw materials, hampering construction clients' will to build more circularly. EU and national governments should correct this market failure - as negative externalities connected to extraction are not reflected in prices - and adopt **fiscal measures** to support establishing a level playing field for circular materials, including higher taxes for virgin materials, incentives for clean and sustainable materials and practices or tax reductions for secondary raw materials. At the EU level, the implementation of Carbon Border Adjustment Mechanism, as well as the EU fiscal reform should support the transition to a more circular construction and buildings sector.

- End-of-waste criteria and standards should be defined at EU and/or at national level for the most commonly used building materials such as concrete, masonry, steel and wood.

- **Selective demolition and pre-demolition audits should be made mandatory**. The tendering of pre-demolition audits or screening should become mandatory for all large buildings that are commissioned for selective demolition or deconstruction services, as it is in France for instance.

- Implementation of an Extensive Producer Responsibility **(EPR) scheme for building materials** (such as the one created in France in 2023), through which producers take responsibility for managing their waste by collectively setting up approved eco-organisations, should be investigated.

- **Development of standards and certifications for recycled and re-used materials** should be guaranteed to ensure they meet quality, health and safety standards. Existing standards hindering circularity in construction should be reviewed and removed.

- New constructions should take into consideration the future (re)use of building materials by integrating information and data on the materials used, so that **digital material passports** can be an effective tool to enable the re-use and - when not possible - repurposing or recycling of all types of construction materials.

- **Design for flexibility and disassembly** makes adaptation of buildings to future uses easier, reducing the likelihood of future demolition and therefore reducing resource consumption. Flexibility of buildings should be integrated in regulatory frameworks and building codes by incorporating new standards for both refurbishment and new construction, along with incentive measures such as mixed-use development and re-densification.

LAND USE

- To avoid expansion of land use/land take and soil sealing through urbanisation, "**no net land take**" has been set as a long-term objective of the EU Soil Strategy. To avoid conflicts with the objectives on affordable housing and building renovation cities across Europe will need to mobilise brownfields requiring support by EU institutions and Member States in terms of regulations and guidance. An example is set by the 2023 adopted law "Zéro Artificialisation Nette" in France, which aims to reduce urban sprawl and achieve no net land take by 2050 by avoiding greenfield development, reducing soil sealing and introducing compensation measures.

- Municipalities should promote urban regeneration and re-use of existing buildings, included temporary uses, by mapping: empty and underused properties and creating a link between the new ideas for re-use and the general urban development strategy with appropriate financing. The mainstreaming of this innovative approach can be achieved through different measures, such as establishing local structures and organisations that are responsible for the reactivation and revitalisation of underused spaces and setting up regulations, by-laws, legal instruments that support the reactivation and revitalisation of underused spaces; introducing integrated management structures that allow a joint management of the spaces.

b. Recommendations to local governments and authorities to drive local building transitions in a just and sustainable way

Actionable recommendations for action subnational governments:

LAND USE

- Cities and regions should drive forward **Strategic densification** (Transit Oriented Development (TOD) vertical densification), **redensification**, the **expansion of green-blue infrastructure like greening roofs and facades, and the reversing of soil sealing on public land** to the extent possible. Transit Oriented Development (TOD) is a concept that could be explored in this regard, as it combines transportation and land use planning to create communities where walking, biking, and public transit are prioritised. Development is centred around public transport hubs to maximise efficiency[22].

- Municipalities can own or manage, directly or indirectly, a lot of land. However, due to increasingly stretched budgets of local governments, public land owned by the city is being put on sale. **To the possible extent, other sources of funding should be considered and selling public land and property should be avoided**. Leasing arrangements combined with public pre-emption afford more control regarding sustainability performance and future urban design. If the sale of public land is deemed necessary, local governments should attach conditions that ensure continued public benefit, such as affordable housing mandates, green infrastructure requirements, or mixed-use development that serves the wider community. For instance, plot allocation through competitions is a very effective way to require specific criteria from the companies who would like to purchase the land.

- Circular regional strategies to d**evelop local supply chains of secondary building materials should be considered** to support the development of new - business and logistical - models for reuse centres to store and refurbish materials. Those initiatives often face difficulties to identify lands in highly densified urban and metropolitan areas, calling for the landowners' support to work collaboratively. The development of such new economic activities should be supported by the regional/local economic development strategies and urban planning documents by reserving plots and spaces for these activities.

BUILDING MATERIALS AND RENOVATION

- Local governments can address **local demand and supply-side fragmentation** in the renovation market value chain by setting up One-Stop-Shops and putting in place other necessary measures to support citizens.

- **Local governments can lead the way on public buildings** through the transformation of existing buildings under public ownership and harnessing green public procurement.

- **Local governments should incorporate measures that prioritise retention and responsible retrofit of the existing built environment over new construction. This minimises the carbon footprint and extends the life of buildings, which aligns with the EU's commitment to sustainability and resource efficiency**. There is a need to include more robust processes for evaluation and green-lighting of planned building demolitions on a case-by-case basis.

22 Thomas, R., & Bertolini, L. (2015). Defining critical success factors in TOD implementation using rough set analysis. *Journal of Transport and Land Use*, 10(1), 139–154. https://doi.org/10.5198/jtlu.2015.513

- Funding priorities for projects must be consistent with the "**European Quality Principles for EU-funded interventions of projects with potential impact on cultural heritage**", and with strategic cultural heritage protection policies and must have been approved by the national cultural heritage institutions/administrations.

TRAINING, SKILLS AND CAPACITY BUILDING

- Local governments should **plan ahead the capacity needs** for a holistic transformation of the built environment.

- Local governments should also be in regular contact with regional and national governments to ensure that Member States have a regular evaluation of the human resources needs of public authorities (in particular local ones) to implement climate and energy policies. Inspirations can be taken from the approach of the recent "Municipal Competence Centre for Heat Planning" organised by the German Energy Agency.

- Local Heritage and Risk Managers should **refer to Guidance Papers on resilience and cultural heritage in urban development** such as the (in German): **Baukulturelles Erbe vor Risiken schützen und resilient gestalten - Eine Arbeitshilfe für die kommunale Praxis** developed by the German Federal Ministry for Housing, Urban Development and Building (BMWSB) and the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR) as well as the **Guidance Paper on Integrated Risk Management**.

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