MISSION CITIES' POLICY BRIEF
BUILT ENVIRONMENT POLICY LAB

This policy brief presents recommendations for EU decision-makers and European national authorities on built environment formulated by cities participating in the EU Cities Mission (Mission Cities). *NetZeroCities held its 5th thematic Policy Lab at the EU level on Built Environment, in person and in the context of the Cities Mission Conference in Valencia on 25 June 2024.*

NetZeroCities is a consortium consisting of 34 partners from 27 European countries, managing the Mission Platform for the EU Cities Mission "100 Climate-Neutral and Smart Cities by 2030".

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EXECUTIVE SUMMARY

As Mission Cities lead the way towards climate neutrality in Europe, they are implementing ambitious climate actions to tackle emissions from their public, private and commercial buildings. **The built environment is one of the most critical emitting sectors for most of the 112 Mission Cities** (in many Mission Cities, it is the largest contributor of CO2 emissions as reported through the Climate City Contracts). Cities have the competencies to manage extensive portfolios of buildings, which create opportunities to embark on decarbonisation projects and drive market conditions through targeted actions to tackle emissions from this sector. With public housing companies, owners associations and the building sector, cities can translate the broader European Green Deal objectives for this sector into real projects.

Cities also play a crucial role in supporting citizens, businesses and homeowners by providing trusted advice and access to resources that promote sustainable and energy-efficient improvements. They can adopt local building policies that go beyond national requirements to support their climate neutrality ambitions. As the closest level of government to citizens, they also offer services, such as one-stop-shops, providing guidance, technical advice, financial support, and assistance with navigating regulatory requirements, helping to streamline the renovation process and support vulnerable households.

Moreover, cities often act as connectors between demand (owners wanting to renovate) and supply (contractors, architects, service providers) by fostering local networks, supporting matchmaking, and promoting local workforce training.

Therefore, **it is key that decision-makers at the EU and national level support and empower Mission Cities to shape and implement regulatory provisions on the built environment.** This policy brief provides an overview of policy needs and recommendations that can guide support in this area. This policy brief collects the insights shared by 8 Mission Cities (Vitoria, Valencia, Barcelona, Velenje, Krakow, Dresden, Zaragoza and Paris), supported by representatives from an additional 20 Mission Cities that came together to raise their policy-related challenges in the built environment sector to the incoming Commissioners and EU decision-makers. The needs of Mission Cities should be considered in any new initiative related to buildings and in the implementation of the EU Green Deal legislation.

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THE EU POLICY FRAMEWORK ON THE BUILT ENVIRONMENT

Under the European Green Deal agenda (2020), the previous European Commission put forward several legislative proposals in the area of the built environment to achieve EU climate neutrality by 2050 in this sector and drive the transition towards climate-neutral buildings. EU decision-makers recognised that decarbonising the built environment will be key to reaching the climate neutrality target, as an estimated 40% of the EU's energy consumption and 36% of GHG emissions come from buildings in the EU. More alarmingly, it is calculated that about 50% of whole-life carbon emissions in new buildings come from embodied carbon (extraction, manufacturing, transport, construction and disposal).

The key legislative instruments to tackle emissions from buildings were the revised Energy Efficiency Directive (EED), Energy Performance of Buildings Directive (EPBD), Renewable Energy Directive(RED), and the Renovation Wave and REPowerEU initiatives (the latter, in response to Russia's invasion of Ukraine, to reduce dependencies of Russian fossil fuels and increase energy efficiency and renewable energy generation in European buildings). Additional support measures, such as the **Social Climate Fund**, where Member States should involve cities in elaborating and implementing their National Social Climate Plans. Other instruments to tackle emissions from buildings are the National Energy and Climate Plans, mandated by the Governance Regulation, where member states must consult with local governments.

Mission Cities have a proven track record in implementing EU regulatory provisions related to buildings mandated by previous versions of these Directives. Still, the latest revised versions, recently negotiated by EU co-legislators, have a big impact on Mission Cities.

The following section provides additional details about the relevant provisions related to EU policy framework within the built environment sector (EED, RED and EPBD recast) that impacts Mission Cities.

1) ENERGY EFFICIENCY DIRECTIVE (EED, 2023)

The Directive introduces new rules that apply to all public authorities, including cities, and that will contribute to achieving higher energy savings and improve energy efficiency in the EU by:

- Reducing the final energy consumption of the EU to 11.7% by 2030 compared to 2020;

- Setting increasing target percentages for final energy savings by almost doubling the current level of ambition (0.8%) by 2030; Introducing a new binding EU target for final energy consumption but with indicative national contributions where the actual contributions will depend on national implementation.

Specific articles that target cities:

- **ART 5, "public sector leading on energy efficiency",** introduces obligations for the public sector to achieve an annual energy consumption reduction of 1.9% (municipalities below 50k inhabitants excluded until 2027).

- **ART 6, "exemplary role of public bodies' buildings"**, extends the requirement to renovate annually at least 3% of what is owned and used by public bodies to local authorities. This comes with a few flexibilities: 1) exemptions that will apply to the renovation of social housing when this can have an impact on the cost of social housing; 2) the 3% should be renovated to Nearly Zero Energy Buildings or Zero Energy Buildings,

defined separately by each Member State; 3) to delay the requirements of renovating the 3% by few years, public authorities could issue a building renovation passport; and 4) less stringent rules for historical and heritage buildings that are hard to renovate without compromising their characteristics.

- **ART 22, "information and awareness raising",** introduces a provision for member states to take appropriate measures to promote and facilitate efficient energy use by final consumers and final users. There is a clear mention of encouraging dialogue between the different actors: cities, regions, social housing providers, owners/tenants, ESCOs, RECs, DSOs, companies and agencies. The article also emphasises the role of one-stop-shops to provide assistance on energy efficiency in buildings and renewable energy projects (e.g. energy communities), in particular, to low-income households. One-stop shops are often operated by or with the support of cities, and they are one of the key instruments for them to facilitate renovations and energy advice to citizens while, in some cases, also acting as a trusted mediator between demand and offer at the local level.

- **ART 24, "energy poverty"**, states that Member States will take appropriate measures to empower and protect vulnerable households, making sure that a share of the energy savings target will be delivered among people affected by energy poverty (vulnerable households, people living in social housing and low-income households). The share of savings will be determined by the proportion of households living in energy poverty as declared by Member States in their National Energy and Climate Plans (NECPs).

- **ART 25.6, "heating and cooling planning"**, introduces a new obligation for regional and local authorities to prepare local heating and cooling plans to be drafted in consultation with all the public administrations/stakeholders in all municipalities above 45,000 inhabitants.

This interactive map '**EU Tracker – Local heating and cooling plans**' gives the current picture of support for local heating and cooling planning, highlighting that in half of EU Member States, there are no regulatory framework in place, and there is almost no support from the national government/agencies towards cities. Hopefully this will change now with the new obligations.

2) RENEWABLE ENERGY DIRECTIVE (RED - 2023)

The objective of the revised directive is to increase the share of renewable energy in the European energy mix, with the new target of 45% by 2030. It has also defined sub-targets for specific sectors (e.g. at least a **49% of renewable energy share in buildings** that should be achieved by 2030 at the EU level).

- **ART 15 highlights the role of cities and regions as implementers local renewable energy production**, by developing projects such as heating and cooling infrastructures powered by renewables, installing VP or solar thermal units on public areas, incentivising private citizens and businesses to do the same, working in partnership the network operators and participating in energy communities and self-consumption initiatives.

- One of the novelties introduced by the communication launching the REPowerEU initiative was to maximise the use of rooftop space, in particular in cities as dense urban areas. Member states can now provide access to third parties to use the roofs of public and mixed public-private buildings, including local and regional buildings, for renewable energy production.

- **ART 15b requires member states to map** the deployment of renewable energy before February 2026 and determine "**renewable acceleration areas**" in coordination with local and regional level: priority will be given to artificial and built surfaces, rooftops, transport infrastructure,

parking and industrial sites. Not land usable for agriculture, no Natura 2000, parks, or reserves.

- **ART 16,** starting from February 2026, all renewable energy planning, construction and operation and the connection of such plants to the grid will be considered as being in the "**overriding public interest**" in order to speed up their implementation.

3) ENERGY PERFORMANCE OF BUILDINGS DIRECTIVE (EPBD - 2024)

The Directive was revised to contribute to the new European Green Deal objectives, creating the conditions to achieve a fully decarbonised building stock by 2050 and setting intermediary milestones for reducing 60% GHG in the building sector by 2030.

- **ART 3: National building renovation plans (NBRPs)** will describe how member states will transform their existing building stock into zero-emission buildings by 2050, including actions and roadmap to intermediate targets towards 2050.

The first drafts of these plans should be presented to the European Commission by December 2025 and the final version by December 2026. This article mandates member states to involve local authorities in the public consultation process, providing a platform for them to share their feedback and needs. The NBRPs will be crucial for local authorities to participate in the process of planned policies and projects and outline the investment and technical needs supporting the implementation of these national plans.

- **ART 9:** One of the key elements that will directly impact cities is the introduction of **Minimum Energy Performance Standards (MEPS)** that will support **progressive renovation trajectories** for residential and non-residential buildings. These standards will be established at the national level based on a series of parameters:

- **Non-residential buildings**, member states will have to establish the renovation steps, targeting the **worst-performing buildings (lowest levels in the EPC classification)**, which hold the main advantages of energy efficiency fast gains, and also those are where most vulnerable households live.

- **Residential buildings** with a trajectory approach: every Member State would have to calculate a trajectory representing a progressive decrease of the average energy consumption of their building stock (2020-2050), ensuring that this target is achieved by renovating 43% of the worst performing buildings.

- **ART 18: Highlighting the role of one-stop shops both in the EED and also in the EPBD.** Obligation for Member states to establish technical assistance facilities through **One-Stop-Shops for each 80,000 inhabitants** or at least one per region or in areas where the average age of the building stock is lower than the national or where member states will implement integrated district renovation programmes. There is also an alternative based on proximity: in locations that can be reached within 90 minutes of average travel time.

The purpose is to provide public and trusted advice on financial and technical possibilities and solutions regarding renovations. Target groups are households (in particular, vulnerable households), SMEs and public bodies.

- **ART 7:** from 2030 onwards, member states must calculate the estimated life-cycle Global Warming Potential (GWP) and gather information about embodied carbon for all new buildings.

- **ART 17:** Member states to draft financial incentives, skills and market barriers as part of their national building renovation plans (NBRP – article 3) while also obliging them to **ban subsidies from stand-alone fossil fuel boilers** from 2025 onwards and phase out from 2040.

- **ART 12 Renovation passports:** member states shall introduce a scheme for renovation

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passports scheme within 2 years after the adoption of the EPBD recast that will be voluntary of use by building or unit owners unless the member state makes it mandatory, with the following definition: *"Renovation passport" means a tailored roadmap for the deep renovation of a specific building in a maximum number of steps that will significantly improve its energy performance".*

POLICY-RELATED CHALLENGES RAISED BY MISSION CITIES

The following section gives an overview of the specific evidence-based policy-related challenges in the area of built environment that eight Mission Cities raised in the policy lab. These challenges range from renovating private buildings and entire districts/neighbourhoods, upscaling one-stop shops, enhancing citizen engagement, accelerating the renovation of social housing and mobilising private capital for financing these projects. Notably, some of them teamed up to present their challenges jointly, addressing common issues from different angles. The Mission Cities' requests underscore the urgent need for comprehensive support from the EU and national levels to decarbonise the built environment sector and improve the quality of life of European residents.

ZARAGOZA AND DRESDEN

The Policy Lab started with the pair of Dresden and Zaragoza as lighthouse Mission Cities in the NEUTRALPATH project[1] under the headline question of:

> Fighting energy poverty in social housing - how to fund it?

Both cities are implementing positive energy district projects, taking a neighbourhood approach, and integrating different sectors, including energy, mobility and built environment, with a participative, cost-effective and upscaling approach to other districts in the city. While both cities have different socioeconomic and climatic contexts, they also share the challenge of decarbonising the district heating sector in social housing to tackle energy poverty and support vulnerable households.

Although their primary sources and technologies to decarbonise the heating sector vary (in Zaragoza, photovoltaic panels have been identified as the main energy solution, while in Dresden, 40-50% of heat demand can be covered most cost-effectively by ambient heat of air heat pump, geothermal, etc.), both cities struggle with the difficulty to establish sustainable financing models. As for Zaragoza, there is a dispersed ownership of public buildings that are viable for PV power supply. There is a need to clarify who the legal signatory parties might be to sign long-term power purchase agreements with the PV power producer. Noteworthy, the owners are located at different government levels as well (City Council, Regional Government, public company). Moreover, Zaragoza is unable to sign long-term contracts (5 years long) due to changing political mandates. Therefore, a relevant task for Zaragoza is to solve these complex public tendering procedures to decarbonise the district heating sector.

Looking at Dresden, social housing mainly depends on the municipal budget, while the city administration is currently facing a strained budget situation that will not be eased soon. This means that without public funding from higher administrative levels, Dresden must limit actions to legally required expenditures and invest less in social housing, energy-efficient renovation or GHG-neutral new construction. Unfortunately, this also applies to other municipal buildings as they cannot meet the required renovation rate of 3% p.a. Without sufficient financial coverage, projects have to leave energy-efficient renovation behind

[1]NEUTRALPATH is a Horizon Europe-funded project under the Climate Neutral and Smart Cities Mission call, with the duration of 2023-2027.

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and to use the available budget to especially cover the implementation of required safety and building standards, e.g. increased fire protection requirements, building management systems or other renovation measures that always have to be considered together to avoid touching a building more than once.

As a consequence of missing long-term funding schemes and the costs of complying with public tender procedures, both cities are pondering not being able to keep the prices stable for vulnerable households renting social housing units. Dresden raised the fact that, in Germany, there is a lack of national construction guidance to support new construction in general and this is having a profoundly negative impact on the housing sector, especially the social housing sector. For five years, the German construction market has been shrinking, as mirrored by decreasing general construction output and construction permits of new dwellings, with an overall supply gap of 800.000 flats. There is an urgent need for viable funding schemes on the federal and local levels and depending on public federal funding in Germany.

> "We need new and specific policies to support social housing as such" (Quote from a Representative from Dresden).

Zaragoza and Dresden's representatives shared their views that having ambitious targets in place to decarbonise the building sector can provide a useful pull to drive national support. From a general viewpoint, the objectives of the mission cities should be reflected more strongly in the European and national regulations. As noted above, the climate protection goals depend on external circumstances; e.g. we need 100% renewable electricity to achieve the building sector targets by 2030+.

VITORIA-GASTEIZ, VALENCIA AND BARCELONA

A second batch of Mission Cities, led by three Spanish ones (Vitoria-Gasteiz, Valencia and Barcelona), outlined their common challenge of:

> How to upscale one-stop shops for exponential retrofitting of their buildings?

As part of the NetZeroCities, Pilot City Programme (add footnote) the three cities are engaged in the implementation of pilot activity of URBANEW, in a consortium of seven Spanish Mission Cities. They are currently testing different models of one-stop shops (fixed, mobile and telematic), known for providing free, trusted advice to citizens and local businesses to renovate buildings and promote renewable energies.

Although Barcelona, Valencia and Vitoria-Gasteiz may differ in terms of population size and housing stock, they share a common challenge faced by many European cities: the majority of their buildings are over 50 years old, and yet their annual renovation rate remains below 1% (see Figure 1, below). The primary reasons for slow renovation pace are:

- Different property structures (multi-owners) making agreements very hard to reach between all the owners.
- Priorities among these owners are accessibility, comfort and energy efficiency and sustainable energy production.
- Other barriers also include high maintenance costs to run one-stop-shops, long public administration timings and difficulty in managing the OSS between public and private sectors.

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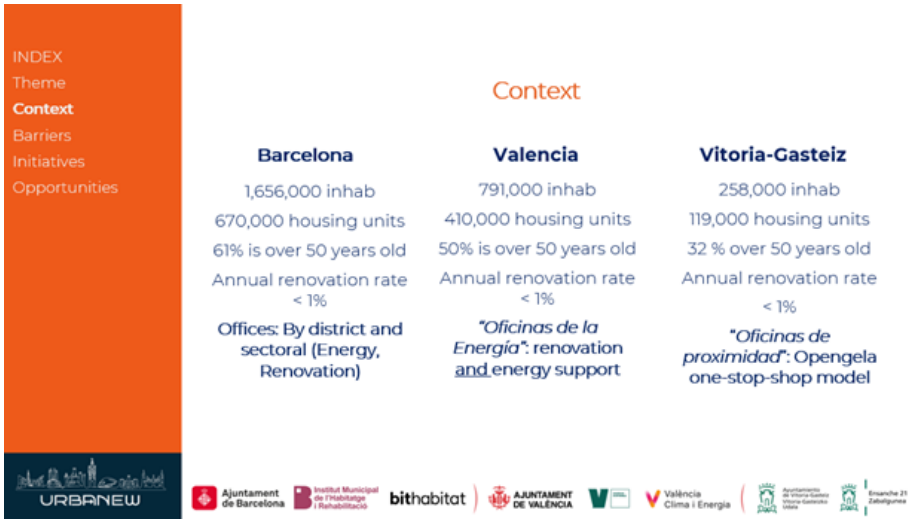

Figure 1. Presentation of policy challenge - Policy Lab

To address these challenges, the three Mission Cities need time to test and evaluate different models of One Stop Shops, understand how to improve the relationships between neighbours and the different actors involved in the building sector, fostering the trust needed to scale up renovations. This includes defining the role of the retrofit manager among multiple actors involved, identifying which OSS model is optimal for each city context and profile (public, semi-public, centralised/decentralised, etc.) and determining the role building passports can have in the process.

In the case of Valencia, the semi-private partnership model proved most effective, as it maintained residents' trust and transparency. On the other hand, Barcelona recognised the useful role of building renovation passports as supporting tools for local authorities allowing flexibility to renovate their buildings step-by-step. Other Mission City representatives from the lab, called on the EU and national decision-makers to support the set-up of OSS with two main pillars:

1. technical support from experts, researchers and academics and
2. administrative staff from the municipality to work closely with citizens.

Therefore, financial and technical support from the EU and national levels will be crucial for establishing one-stop shops in the three Spanish Mission Cities. However, beyond the existing supportive frameworks under EU legislation, the next steps for incoming EU decision-makers should focus on how to support the implementation of current measures, and on how future legislative measures on buildings can facilitate the practical expansion and uptake of OSS.

VELENJE

Thirdly, moving slightly towards the East, the Mission City of Velenje raised the challenge of citizens' engagement and the need for funding and financing under the headline question of:

> How can public administrations (at all levels) encourage citizens to invest in energy renovations of their homes and ensure sufficient grants to that end? ofitting of their buildings?

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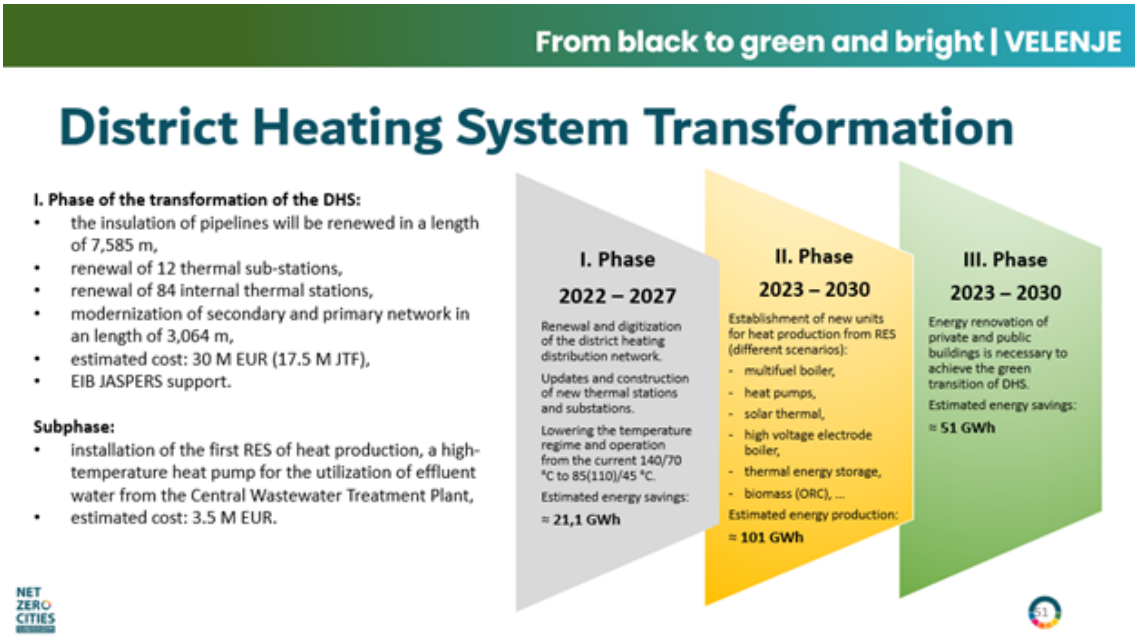

Figure 2. Presentation of policy challenge - Policy Lab

Velenje has recently transformed its district heating system, making it the second-largest district in Slovenia. In 2022, the city put forward a local energy plan to reduce energy consumption and demand from citizens and other stakeholders by 2031, compared to 2020 levels. The plan was based on an analysis to transform the district heating system between 2022 and 2030, with a three-phased approach, focusing on integrating renewable energy sources in the district heating and reducing energy demand through the renovation of private and public buildings (see figure below). However, the challenge remains of encouraging citizens to invest in energy-efficient renovations for their homes.

Although the city promotes subsidies to encourage citizens to embark in these necessary phases through the Eco Fund (Slovenian Environmental Public Fund), which offers financial incentives such as soft loans and grants for different environmental investment projects, additional funding from private homeowners will still be necessary to achieve the city's building renovation objectives. Many residents in Velenje are held back from embarking on renovating their houses for several reasons, but mainly because of the perceived financial burden. In 2023 alone, Slovenia's average effective interest rate amounted to 9,3% for loans of 20,000 Euros with repayment terms for up to 10 years, discouraging investments).

Velenje's challenge is common in other European Mission Cities, such as Galway and Antwerp, where residents are discouraged from investing in their renovation projects due to a lack of affordable long-term loans. Additionally, existing supportive measures at the national level are sometimes targeted at specific types of buildings. For example, e.g., in Belgium, support is directed more to single-family homes, instead of multi-family residential buildings.

To help solve this challenge and engage residents in the renovation objective, Velenje, together with two other Slovenian Mission Cities, Kranj and Ljubljana, is setting up a new climate and energy office UP-SCALE as part of the NetZeroCities Pilot City Programme. However, the services provided by the office should be coupled with appropriate financial measures and incentives set up at the EU and national levels to encourage its residents to invest in renovation projects. Therefore, the city will urge both the national level to increase the percentage of funding and EU representatives to limit the interest rates to encourage citizens to invest in the implementation of energy renovation projects.

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KRAKOW

70% of Poland's 5 million single-family houses fail to meet energy efficiency standards, and the situation is similarly challenging for other types of buildings. Therefore, five Polish Mission Cities (Kraków, Łódź, Rzeszów, Warsaw, and Wrocław) realised that without a thorough modernisation of buildings, the EU-wide climate targets wouldn't be achieved. They are implementing a pilot activity around the built environment (NEEST), which is focused on decarbonising five types of buildings and neighbourhoods. The goal is to develop a universal operational model (including financing, business strategies, cooperation among stakeholders, etc.) to conduct comprehensive and locally acceptable modernisation of buildings and districts (see Figure 3, below).

The efficient collection of a set of data that precisely describes the building and energy consumption is necessary for effective analysis, renovation planning, and energy management. That's why Krakow and the other Polish Mission Cities, raised:

> How to effectively gather data to create a digital twin that facilitates modelling in the areas of social engagement and built environment?

It is worth emphasising two aspects. First, some data related to individuals may be subject to legal protection, and energy distribution companies are reluctant to share them. Second, we need to perform energy modelling quickly and on a large scale. This means that we need to look for a way to automate the process, using remote measurements and advanced digital analyses. Polish cities, in cooperation with the National Center for Research and Development, are testing the possibility of creating digital twins and carrying out effective decarbonisation actions to renovate five types of buildings in Poland.

While energy is a sector where cities often rely on data held by private utilities, and citizens lack trust to provide data, access to this data is essential or cities to model decarbonised built environment scenarios. Data is crucial for expanding knowledge, estimating impacts, and simulating the costs of planned actions through the Digital Twin. However, existing national legislation on data privacy and data protection poses a barrier in some European cities to accessing data, as seen in Polish Mission Cities. Cities would greatly benefit from easy access to aggregated and anonymised energy data on frequent-based consumption per building. They could use it to implement a building renovation passport in the form of a renovation roadmap, support the energy transition, optimise consumption, develop Energy Communities and reduce energy poverty, or even provide personal advice to residents.

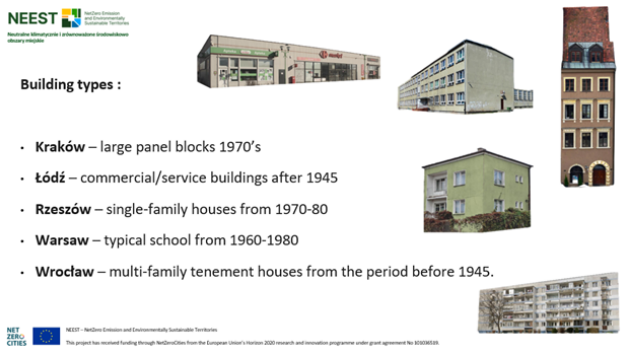

Figure 3 Presentation of policy challenge - Policy Lab

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PARIS

In another field of decarbonising the built environment, Paris brought up the challenge of refurbishing private buildings (mainly small and medium-sized commercial buildings) under the headline of:

> How to accelerate the refurbishment of private buildings, mainly the non-accommodation sector? What level of intervention by the public authorities? How can private financing of private renovations be facilitated?

Paris' case is representative for most of Mission Cities, where local authorities lack the competencies to mandate or regulate the renovation of private buildings and where public funding alone is not an attractive enabler. In Paris, private buildings account for 60 million square meters of floor space, and reaching climate neutrality in the city will require a big effort to renovate these buildings (see Figure below).

Although revised EU EPBD provisions mandate national governments to push for the renovation of private buildings, Paris remains sceptical about their impact, as the private sector might not feel sufficiently encouraged to play a role in the renovation objectives.

This leads to questions about the capacities of SMEs to secure the financial resources needed for building renovation: how can they afford it? Therefore, the EU decision-makers should support Mission Cities in funding the renovation of commercial/ private buildings, with new EU own revenue sources and taxation on financial transactions.

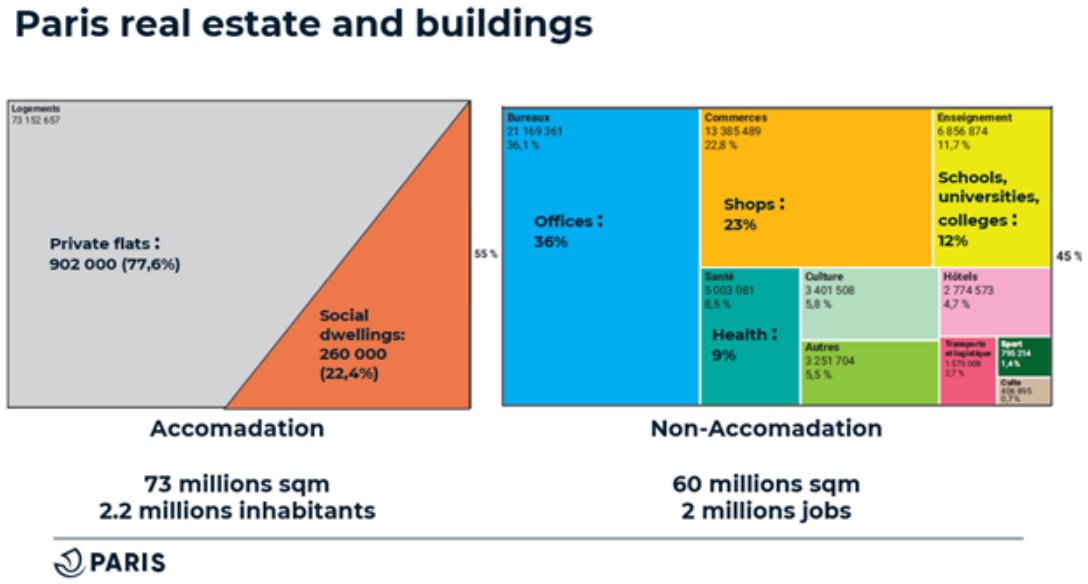

Figure 4 Presentation of policy challenge - Policy Lab

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POLICY RECOMMENDATIONS FOR EU AND NATIONAL DECISION-MAKERS:

1) **Ensure that cities are consulted on the National Building Renovation Plans** and that the specific experiences of Mission Cities are considered when preparing the plans, with the first draft to be submitted by member states by December 2025. As the EU member states move into the transposition and implementation phase of the EU regulatory provisions on built environment (through NECPs, national building renovation plans, Social Climate Plans, etc.), legislation requires member states to consult with local and regional governments. As mandated by the revised EPBD, the transposition phase must be guided by strong public and stakeholder consultation, including structured multilevel dialogues between the national and local levels. Therefore, instead of merely fulfilling consultation requirements, the European Commission should emphasise the need for the national level to involve local authorities with cities through structured dialogues. National authorities would also benefit from local expertise and hands-on experience in the field when drafting the NBRP.

2) **European Commission to stay vigilant on how the EPBD will be implemented:** upcoming EU initiatives/legislation related to the decarbonisation of buildings should introduce guidance to Member States on how the Minimum Energy Performance Standards, common EU system on Energy Performance Certificates classes and calculation methodologies, should be implemented. Insufficient harmonisation in revised EU legislation is leading to different implementations in each Member State and fragments the EU market on building renovation, especially for those companies that operate in different Member States.

3) **Invest in capacity building and technical skills in Mission Cities:** Mission Cities face significant challenges in terms of technical capacity to effectively translate EU policies into concrete actions and projects. To successfully implement Minimum Energy Performance Standards and foster demand for European businesses and industries, they need a well-equipped workforce with the necessary in-house expertise. Local authorities should receive support from the EU and national levels to build this capacity. This includes access to transparent information on available technical, administrative and financial resources to implement building renovation projects. This should be done through establishing dedicated training programmes at the national level to enhance cities' technical knowledge on energy efficiency renovations and financial planning. These trainings could also encourage partnerships with Industry experts, research institutions and technical experts to provide long-term hands-on technical assistance and innovation.

4) **Support the upscaling of one-stop-shops (OSS):** Mission Cities highly value the numerous provisions in both the Energy Efficiency Directive (EED) and the Energy Performance of Buildings Directive (EPBD) that support the development of one-stop-shops, many of which are already in operation within Mission Cities.

However, cities need flexibility and time to determine what is the best model (fixed, mobile and telematic) and profile (public or semi-public) of a one-stop shop that better suits their specific urban context to be able to upscale them broadly across their cities. EU and national frameworks should provide cities with the flexibility to tailor OSS formats and profiles to their specific needs, as one-size-fits-all approaches may hinder local adaptation. Sustainable funding at both levels is essential to support OSS development, covering both initial setup and ongoing operational costs to enable gradual expansion. This should also include funds for training in issues related to energy poverty, nature-based solutions, and renewable energy installations as part of the services provided by OSS. Additionally, promoting OSS is crucial for encouraging citizen participation in renovation projects, and public outreach campaigns should receive support from national and EU authorities to enhance visibility and build trust in OSS services. A further expansion of the model could be considered to replicate OSS for non-residential buildings, such as those owned by SMEs or other commercial entities.

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5) **Ensure a holistic approach of buildings with nature-based solutions:** EU and national decision-makers must recognise the co-benefits between decarbonising the building while integrating nature-based solutions for a more resilient and adaptable building stock (e.g. combination of green and blue roofs) that many Mission Cities are already developing.

Unfortunately, the recent recast of the Energy Performance of Buildings Directive (EPBD) missed an opportunity to support this approach fully, but the announced Water Resilience Strategy and new Climate Adaptation Plan can prove useful to fill this gap. Some guidance is available through the European Taxonomy, construction standards and the Level(s) framework, but more is needed to make sure the investments made in the building sector in the coming years will be sustainable in the medium to long term. Member States should provide technical and financial guidance for cities to integrate green, blue and solar roofs in their strategies prioritising the maximisation of multifunctional potential of roofs both for social and environmental benefits. Aligning EU climate, building, and biodiversity policies at the EU level will be key to ensuring that NBS is not seen as an add-on but as a core component of climate-resilient building strategies. Coherent policies will help cities integrate NBS into their decarbonisation and adaptation efforts, fostering a more sustainable urban environment.

6) **Reduce interest rates paybacks to encourage residents:** EU decision-makers should actively support Mission Cities to embark on the renovation of their buildings by lowering interest rates on loans for building renovations, using mechanisms such as on-bill recovery to reduce financial burden. This approach can play an important role in investment decisions for European citizens to participate in energy efficiency projects. The case of Velenje illustrates how combining financial incentives and removing investment barriers can raise awareness and empower residents to take part in citywide renovation efforts. Special attention should be given to low-income households by creating tailored loan packages or grants to ensure inclusivity in building renovation efforts, thus reducing energy poverty while achieving climate goals.

7) **Improve data availability and transparency while ensuring socially responsible management of data:** To be able to reach the full decarbonisation target by 2050, Mission Cities need the full picture and calculate the "real" emissions of the buildings. The recently adopted EPBD foresees at least to calculate the overall emissions of all new buildings, including guiding criteria for construction tenders from public authorities. However, Mission Cities like Krakow highlighted the growing need for a socially responsible management and the use of data-generated knowledge to improve decision-making and enhance the efficiency of public services, As noted by Paris, the EU level could intervene to give free access to local authorities to the information from the energy grid data for non-commercial use and prospective policy.

8) **Secure dedicated financial incentives for different type of building owners** ranging from social housing (Dresden and Zaragoza) to private sector/SMEs for the renovation of private and commercial buildings (e.g. Paris), with particular attention on supporting renovation of social housing to high-performance standards, tackling both emissions and energy poverty; given that social housing is an area where cities often have more competencies and ownership to intervene.

While considering the difficulties with ownership-specific ownership structures, Member States should tailor targeted support (via One-Stop-Shops) and financial incentives for commercial buildings owned largely by SMEs in Mission Cities, as is the case in Paris.

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CONCLUDING REMARKS

As we examine the recently negotiated EU legislation on decarbonising the built environment and transition into the newly appointed EU mandate, it becomes evident that Mission Cities' can only achieve their climate objectives if supported by national and EU decision-makers, particularly as they work to implement the built environment provisions of the European Green Deal from the previous mandate.

From the eight Mission Cities' real-case challenges on the built environment, some of the key issues include the ageing building stock combined with ambitious climate targets, a construction sector with limited scale and capacity, and the essential yet costly phase-out of fossil fuels are just a few of the critical issues at hand.

Additionally, while the objective of a just transition remains central, the short-to-medium-term financial impacts on households (especially vulnerable households) and local authorities will strain Mission Cities' ability to invest in necessary projects. Strong public-private partnerships will be crucial to overcome these obstacles, alongside boosting skills and capacity within local administrations as they handle an increasing volume of decarbonising built environment projects.

An integrated approach is also essential – one that places buildings within the broader urban planning considerations, including transport, energy, public space, nature-based solutions and circular economy principles.

For the years to come, it is vital to highlight that only with robust involvement from local authorities in national renovation plans will Member States stand a chance to meet their decarbonisation targets for buildings by 2030 and beyond. The path forward is challenging but achievable, and Mission Cities will be at the heart of this transformative effort, at the forefront of climate action and sustainable urban development.

USEFUL RESOURCES:

Renocally project - https://www.bpie.eu/renocally/

EPBD recast in EU Official journal - https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202401275

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