



# Postwar Recovery of Ukraine's Cities: Green Reconstruction and Green Transformation

**Policy Paper**



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## Summary

All Ukrainian cities faced unprecedented challenges during the Russian aggression in 2022. Many cities have suffered significant destruction. Critical infrastructure of cities and regions was deliberately targeted by the strikes by the Russian Federation. Devastatingly large migration processes impose additional difficulties for the operation and restoration of cities.

In this policy paper, we attempted to analyze the problem of postwar reconstruction and urban development, to identify key challenges for the process of planning the postwar reconstruction of Ukraine. We also suggest new approaches to building the cities of future in Ukraine, such as the green reconstruction and green transformation of cities in the postwar period.

### Priority challenges and tasks for postwar urban recovery

- **Human-centricity should be a key pillar of postwar urban regeneration.** People are central element in the urban system: cities are created for people, by people and are used by people.
- **Bringing people back is a key task of the government and of cities.** Postwar recovery and urban development have no sense without people. Human capital is a key determinant to the development of cities and of the country. The state and cities shall actively build and impact people's aspirations to return.
- **It is necessary to distinguish between cities that have suffered significant or total destruction, and the cities that have remained unaffected (or low affected).** The needs of different cities are different, that is why their approaches to development and reconstruction shall also be different. The formers require green reconstruction, the others need green transformation in the postwar period.
- The reconstruction of destroyed cities shall be based on **a single vision**. It shall be the green reconstruction of cities.
- **The reconstruction dilemma: "fast and cheap" or "long but modern"** shall be taken as a challenge rather than a verdict. The dilemma may often be resolved and sometimes it is even far-fetched.
- **Reconstruction of the critical infrastructure** during the war shall account for the principles of future development of the city and the country. This type of infrastructure can continue the operation for many decades to go, and impede the energy transition for cities.
- **Small towns** affected by destruction will find themselves in an especially vulnerable situation. The people will not be likely returning there without any additional encouragement.
- A balance must be struck between the fast **"standard" solutions** (such as the rebuilding of housing) and customized solutions for communities in the process of urban development.
- We must **not forget about the cities in the rear** aspiring for or requiring green transformation.
- **Support programs for green transformation of cities** that were running in the previous years shall resume.
- **Capacity** is a critical issue relevant for all cities. A systemic approach is required to enhance the capacity of cities for the reconstruction, for their development and for green transformation. One such tool may be the regional offices to support green transformation of cities that should be created in each Oblast capital.

## How to implement the vision for the postwar recovery and transformation of cities?

### Planning

- Ukraine continues to sway between the first two stages of planning for the postwar recovery: **understanding challenges and searching for solutions**.
- **Planning capacity** to design the future social and economic development of territories is a major challenge. It applies to cities and to the country at large. Cities are not isolated and will depend on the regional development scenarios.
- **National Council for the Recovery of Ukraine** shall receive the new specific mandate to develop further versions of the postwar recovery plan. In our opinion, the mandate will need to include a clear strategic mission to use green postwar recovery approach.
- In the context of cities, **further development of the national recovery plan** shall be based on the set principles and rules such as energy efficiency, zero waste, climate change adaptation, etc.
- Further **operations of the National Council for the Recovery** shall provide for proper engagement of cities. This has not been provided yet.

### Search for solutions

- The complexity of challenges faced by the cities means that **there are no off-the-shelf solutions available**. That is why the process of postwar recovery shall include the tools to search for solutions to key issues and challenges arising from the recovery.
- We suggest **creating a Postwar Bauhaus-Ukraine**, a platform for searching solutions for green reconstruction and transformation of cities. The platform may be established similarly to the New European Bauhaus.

- Ukraine and the EU shall start the large-scale program to engage Ukrainian cities to **all European platforms and initiatives** that help cities in their green transformation. Green City Accord, initiatives for transition to circular economy, New European Bauhaus, support for participation in LIFE and Horizon programs.
- The Parliament and the Government of Ukraine shall **provide for new legal framework for solutions** to be developed for green postwar reconstruction and transformation of cities.

### Funding

- The amount of funding needed and the speed of their use in the process of reconstruction require new approaches to administering financial resources.
- Most cities do not and will not have sufficient financial resources for postwar reconstruction and transformation. A big part of resources will be composed of international aid, reparations, government budget, and private investment.
- Public funds should act as a multiplier to create preconditions for engaging private capital (investment).
- Potential international (multilateral) funding mechanisms should be unified and simplified to the maximum extent, provide for the transparent process of their engagement and use.
- Government support for the postwar development of cities shall rely on and require the plans of green transformation (development) of cities.
- In general, cities must see clear, transparent, and realistic mechanisms to obtain funding for reconstruction and transformation. On their side, cities must offer clear and realistic plans for their own postwar development and build their own capacity to implement complex programs (projects) for postwar recovery.

# Introduction

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Russia's military aggression against Ukraine is causing enormous damage to our country. Russian army destroys houses, infrastructure, entire cities and villages, and ultimately millions of lives of Ukrainian people. In addition, the plans were disrupted for Ukrainian cities outlining their strategic development, modernization, improvement of the quality of life and green transformation. Under such complex conditions, there are only two main tasks to pursue: to survive and preserve independence and identity.

Ukraine keeps looking on the bright side of things. Even during hostilities, the country has already started thinking about the reconstruction. Ukraine presented its vision for the postwar recovery of Ukraine at an international conference in Lugano (Switzerland) on July, 4-5, 2022. The Working Groups within the National Council for the Recovery of Ukraine developed a draft of the Ukraine's Recovery Plan.

Cities will certainly be the basis for Ukraine's future postwar recovery. However, different cities will face different challenges. For destroyed or partially destroyed cities, reconstruction will be the priority. The undamaged cities will focus on further development and transformation.

Since the current vision of the postwar reconstruction of Ukraine is still under development by the Government of Ukraine, international partners, civil society and experts, we can make an impact and ensure the reconstruction process is based on green principles. We can enable cities to be full-fledged participants in the process, both in the context of planning, and in terms of reconstruction and transformation.

The green reconstruction and green transformation of Ukrainian cities is enhanced by two factors. Back in early 2020, Ukraine announced its aspiration to become part of the European Green Deal. In addition to current decarbonisation trends of economy and the integration of environmental and climate issues into all areas of policy, the economy and the everyday life of citizens, the European Green Deal also offers specific tools for cities to contribute to their green transformation. Tools such as the European Climate Pact, the New European Bauhaus, the Green City Accord, as well as other best practices of EU cities, can be used for the reconstruction and for the green development of Ukrainian cities.

In addition, in June, 2022, Ukraine received the EU candidate country status, which means that we face many new opportunities and the need to bring our legislation in line with the European acquis, in particular in the field of environment and climate change.

The main purpose of the policy is to offer mechanisms and tools for postwar reconstruction and green transformation of Ukrainian cities, to analyze existing challenges and ways to overcome them, and to explore recent changes in legislation and strategic planning at the government level related to postwar reconstruction of Ukraine in the context of cities.

The paper may be of interest to representatives of local authorities (mayors of cities, heads of amalgamated hromadas, representatives of city and regional councils); to central authorities; to civil society organizations dealing with issues of postwar reconstruction of Ukraine; and to international donors and international organizations.

The study applied the following methods of research:

- desk research (collection and study of existing reports, policy briefs, strategic documents, studies, materials of projects addressing the issues of Ukraine's postwar reconstruction);
- method of analysis (the information collected was analyzed, structured, and appropriately presented in the policy policy);
- mapping method for identifying challenges in the operations of cities (data collection and analysis);
- method of interviewing target audiences (a number of interviews with representatives of cities were conducted);
- forecasting method (was applied to Section II and Section III to model the vision of postwar urban recovery and the application of European Green Deal tools).

The policy paper was developed by the team of the Resource and Analysis Center "Society and Environment" (Andrii Andrusevych, Nataliia Andrusevych, Zoriana Kozak, Svitlana Romanko) within the research project "Tools of the European Green Deal for Postwar Reconstruction of Ukrainian Cities" funded by the Konrad Adenauer Foundation in Ukraine.

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Section I.  
**War-related and  
Post-War Challenges  
for Ukrainian Cities**

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Before the beginning of the full-scale war of the RF against Ukraine on February, 24, 2022, there were 461 cities in Ukraine, where about 69.7% of the total population of Ukraine used to live.<sup>1</sup> The problems that have been faced and remain still today include a high proportion of energy consumption, low energy efficiency and the pace of thermal modernization of buildings, the obsolete available building stock, technological backwardness, high energy intensity and low efficiency of life support systems, expiry of their designed service life, the need to replace them, as well as problems in providing uninterrupted, safe, and affordable water supply and discharge services, and management of household waste. Until 2022, cities in Ukraine had been a source of pollution producing large amounts of greenhouse gases, which was a serious issue in the context of climate change.

Environmental problems of cities before the war, among other things, were caused by dense (chaotic, illegal) urban development, by a decrease in the number and quality of green areas, concrete casting of the yards and curtilage spaces, concentration of residential housing near industrial production zones, lack of climate change adaptation specialists in city governments, planning activities disregarding climate risks, lack of proper cooperation, coordination and outreach to citizens on adaptation to climate change, transition to green economy at the local level in the future.

The war in Ukraine has modified the common challenges in cities. It put forward the problems related to the destruction of buildings, edifices and infrastructure, with debris after destruction, and some cities were totally destroyed. Large-scale population movements and the need to relocate enterprises exacerbated the

existing challenges. Currently, the government, international partners, and other stakeholders keep working to assess the amount of actual damage caused by the war to cities. Different methodologies offer different estimations amount of damage.

According to the report “Rapid Damage and Needs Assessment” drafted by the Government of Ukraine, the European Commission, and the World Bank, the total amount of damage caused to the housing sector is estimated at \$39.2 billion as of June, 1, 2022. The need for recovery and reconstruction reaches \$69 billion, of which almost \$33 billion is needed immediately, such as for winter preparation.<sup>2</sup>

The volume of damage keeps changing since the war continues. Furthermore, in recent months, the critical infrastructure facilities in cities have been destroyed intentionally. At the same time, data on the volume and cost of damage are constantly being updated. According to the joint report, the total amount of direct documented losses to residential and non-residential real estate, other infrastructure of Ukraine, as of September, 2022, amounted to more than USD 127 billion. In June-August, 2022, Ukraine additionally incurred USD 31.5 billion in losses to its assets. According to experts, the largest share in the total losses comes from the housing stock – 39.7% (compared to the beginning of June, 2022, the amount increased by USD 11.2 billion), followed by the infrastructure sector (27.7%).<sup>3</sup>

Cities have faced a number of new issues and challenges. For cities directly affected by hostilities, the problems include the following:

- destruction of critical infrastructure (energy, road, water);
- significant destruction of the housing stock;

<sup>1</sup> Population of Ukraine. Demographic guide. 2021 / State Statistics Service of Ukraine, Kyiv. – 2022. – P. 12, 26. [https://ukrstat.gov.ua/druk/publicat/kat\\_u/2022/zb/10/zb\\_nasel%20\\_2021.pdf](https://ukrstat.gov.ua/druk/publicat/kat_u/2022/zb/10/zb_nasel%20_2021.pdf)

<sup>2</sup> Ukraine. Rapid Damage and Needs Assessment (August, 2022) //World Bank, Government of Ukraine, European Commission. <https://www.minregion.gov.ua/wp-content/uploads/2022/09/zvit-shvydka-ocinka-zavdanoyi-shkody-ta-potreb-na-vidnovlennya-ukr-1.pdf>

<sup>3</sup> Report on direct damage to infrastructure from destruction as a result of Russia's military aggression against Ukraine as of September, 1, 2022 (September 2022) // KSE (Kyiv School of Economics). Office of the President of Ukraine. Ministry of Economy of Ukraine. Ministry of Infrastructure of Ukraine. Ministry of Community and Territory Development of Ukraine. Ministry of Reintegration of the Temporarily Occupied Territories of Ukraine. [https://kse.ua/wp-content/uploads/2022/10/Sep22\\_FINAL\\_Sep1\\_Damages-Report.docx.pdf](https://kse.ua/wp-content/uploads/2022/10/Sep22_FINAL_Sep1_Damages-Report.docx.pdf)

- destruction and loss of municipal infrastructure (buildings, archives, equipment, etc.);
- departure of residents and personnel (educators, doctors, managers, etc.);
- destruction of enterprises;
- business relocation;
- loss of local taxes.
- restrictions on the use of city budget funds;
- significant risk of loss and regular disconnections from the main energy grids and infrastructure (mainly electricity);
- difficulties in implementing pre-war development strategies and plans;
- outflow of personnel and residents abroad;
- suspension and/or complication of the implementation of large pre-war projects, including loan-based ones;
- security challenges (functioning of educational institutions, health care, public transport, bomb shelters).

Other cities that have not suffered significant destruction and are located in the rear face their own peculiar challenges:

- a significant number of internally displaced persons and related challenges (housing, jobs, integration into the community, uncertainty about their further intentions, etc.);
- risks of new waves of people moving in winter from regions where it will be impossible to provide heating;

In addition, all cities operate under significant restrictions on transparency, open data, and public participation. Therefore, in general, there is a restriction on good governance.

The armed aggression of the Russian Federation against Ukraine and the temporary occupation of part of its territory deepened the gap between the regions in terms of their development; it caused the destruction of infrastructure and a massive outflow of able-bodied population and capital from the territories adjacent to the temporarily occupied areas; it also increased the migration burden of the regions as a result of forced internal displacement of the population; entrepreneurial and investment risks have grown.

*According to the draft Recovery Plan of Ukraine.*

In these incredibly difficult conditions, cities continue to function and try to provide all basic services to residents, including water supply, public transport, heating, waste management, a.o.

#### **Numbers-wise**

As of June, 7, 2022, 4,816,923 refugees from Ukraine were registered in Europe alone.

7.7 million citizens of Ukraine are considered internally displaced persons (IDPs).

As of 14.06.22, 12,900 apartment buildings were destroyed/damaged (~13.5 million m<sup>2</sup>), and 107,707 private homes (~1.9 million m<sup>2</sup>).

As of early June, 2022, about 35% of workers who had been employed before Russia's large-scale invasion lost their jobs.

To date, more than 1,000 educational institutions have been damaged and destroyed, more than 700 health care institutions have been damaged, 255 cultural objects have been damaged and 295 have been destroyed.

At the same time, key stakeholders emphasize that the challenges and opportunities for reconstruction and postwar development bring a chance for a systemic rethinking and transformation of Ukraine,<sup>4</sup> in particular, of its regions and cities, on the basis of green principles of economic and regional transformation, which is people-centered, with a focus on motivating them to return to a healthy, safe, and viable environment.

It is apparent that this will require certain measures based on the “build back better” and “build back greener” principles. However, it will call for different tools to restore regions and cities massively affected by the large-scale destruction and damage, and the regions and cities that have seen less destruction and need to revise the strategic visions for their development. Such measures should be come from the best practices in urban planning and spatial development, in environmental conservation, and with account for energy-efficient, environmental and other modern development trends. The European vector of Ukraine’s development, in particular the latest trends in the EU itself, will be critical. We are talking about the European Green Deal and the transformation of the European continent to climate neutral place by 2050.

All this will require finding a balance between urgent needs and medium- and long-term development goals, prioritizing the reconstruction focus areas. Such recovery and development should be people-centered and community-centered. Still before the full-scale war, Ukraine had outlined the strategic goal of the country’s regional policy. It was the people-centered development and cohesion: “a decent life in a cohesive, decentralized, competitive and democratic Ukraine, ensuring the effective

use of the internal potential of the territories and their specialization to achieve sustainable development of the country, which creates conditions for increasing the well-being and incomes of citizens while reaching cohesion in social, humanitarian, economic, environmental, and spatial areas.”<sup>5</sup>

According to the nationwide public opinion poll, almost 40% of respondents believe that five years would be enough to restore the infrastructure and economy of Ukraine, 25% respondents said that it will take up to ten years, 23% suggested more than ten years. It is noteworthy that Ukrainian people are ready to contribute to the country’s reconstruction: 42% of respondents are ready to contribute personally, 49% are ready but have no possibility. Respondents who are more keen to contribute to the reconstruction include residents of Kyiv city, people aged 18 to 50, men, and wealthier persons.<sup>6</sup>

According to a survey conducted in October, 2022, 88% of Ukrainians believe that in 10 years Ukraine will be a prosperous country and part of the EU. At the same time, 63% of them fully share this view, whereas 26% rather agree. In all regions, the absolute majority sees the future of Ukraine as hopeful (from 90% in the West to 76% in the East). Among the respondents who see Ukraine as a prosperous country within the EU in a ten year’s time, 96% are ready to endure financial difficulties during 3 to 5 years.<sup>7</sup>

<sup>4</sup> Green postwar reconstruction of Ukraine: vision and models. Policy brief (August 2022) // Resource and Analytical Center “Society and Environment” <https://www.rac.org.ua/priorytety/viy-na-ta-zelena-vidbudova-ukrayiny/zelene-povoenne-vidnovlennya-ukrayiny-vizyia-ta-modeli-2022>

<sup>5</sup> Government’s Regional Development Strategy for 2021-2027. Approved by the Resolution of the Cabinet of Ministers of Ukraine dated August, 5, 2020 No. 695 <https://zakon.rada.gov.ua/laws/show/695-2020-%D0%BF#Text>

<sup>6</sup> Assessment of the damage caused by Russia’s war crimes in Ukraine (September, 15-19, 2022) // “Rating” Sociological group. <https://ratinggroup.ua/research/ukraine/oc-nka-shkodi-zavdano-vo-nnimi-zlochinami-ros-v-ukra-n-15-19-veresnya-2022.html>

<sup>7</sup> How Ukrainians see the future of Ukraine in 10 years and the willingness to endure material difficulties (October, 21-23, 2022) // Press release written by Anton Hrushetsky, Deputy Director of KIIS <https://www.kiis.com.ua/?lang=ukr&cat=reports&id=1157&page=1>



# 2

Section II.  
**Post-War Reconstruction  
and Development  
of Cities: Priorities**

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Postwar reconstruction of Ukraine will cover all sectors and sites on the territory of Ukraine, including cities.

Different cities will apparently require different approaches. **At least two groups of cities can be distinguished as objects of postwar reconstruction: cities that have suffered significant or complete destruction, and cities that have not been affected by destruction (or the destruction was insignificant).** The needs of such cities are different, and the approaches to their development and reconstruction will also be different.

Cities that have suffered major or total destruction will need reconstruction plans. Other cities will require development plans with account for the new conditions and transformation needs. Therefore, this section focuses on two parallel recovery processes, such as urban reconstruction and urban transformation.

The recovery and development of both categories of cities also include a number of cross-cutting aspects that are relevant for all cities and will continue to be in focus. These aspects include people, capacity, finding solutions, planning, and financing.

**People are a special task. It is difficult to isolate it into a separate part since it is necessary to consider them in the context of each process (reconstruction and transformation). However, it should be noted from the beginning that human-centeredness should be key in the postwar reconstruction of cities.**

People are the central element of the urban system. Cities are made for people, created by people, and used by people. To understand the importance of these issues, one could try to imagine for a moment a gloomy rebuilt ghost city, with new buildings but with no people.

Therefore, a clear understanding and vision are required about the types of people who would live (are living) in a particular city, about what they want, how to make the city comfortable for a productive life (not simply residing), where they will work, and what the identity of the city will be.

In the context of postwar reconstruction, this also implies the need to take into account the migration processes that affected millions of people. Will people who left Lviv or Kharkiv return from abroad? Will people return to the liberated Mariupol? Will internally displaced persons stay in the city or will they return? What can the authorities offer to the returnees: home, work, study, medical services, or recreation? In general, returning people is a monumental and exceptionally challenging task for the future of the whole country.

Moreover, cities are not isolated. It is apparent that cities are connected with the development of the country (region) as a whole. The postwar development approach for the country will undergo significant changes, regions will also look for their place in this development. Therefore, the reconstruction and transformation of cities should be planned with the consideration of these factors.

## 2.1. Green Reconstruction

Still during the hostilities, a number of initiatives were announced to rebuild damaged cities.

Thus, at the conference in Lugano, the idea was proposed of restoring cities on a “country-city” basis. The following countries expressed their desire to patronize the restoration of Ukrainian regions and cities affected by the war<sup>8</sup>:

- Italy – Rivne;
- Germany – Chernihiv;
- Canada – Sumy;
- USA and Turkey – Kharkiv;
- Czech Republic, Finland and Sweden – Luhansk;
- Belgium – Mykolaiv;
- Sweden and the Netherlands – Kherson;
- Switzerland – Odessa;
- Norway – Kirovohrad region;
- Latvia – Zaporizhzhia;
- Poland and Italy – Donetsk.

Unfortunately, not all of these initiatives have started yet. In addition, there have been many national and international initiatives intending to solve the problems with the restoration of

damaged cities.

With the financial support of the Ministry of Foreign Affairs of the Czech Republic, as part of the Transition Promotion Program, a special project is being implemented related to reconstruction of Ukrainian cities affected by a full-scale Russian invasion<sup>9</sup>. The Eurocities network<sup>10</sup> plans to consolidate more than 200 large cities in Europe, who stay in solidarity with Ukrainian twin cities, to implement reconstruction projects for the sites destroyed or damaged through Russian military aggression<sup>11</sup>. The appropriate memorandum was concluded<sup>12</sup>. The European Alliance of Cities and Regions for the reconstruction of Ukraine was established<sup>13</sup>. Under the auspices of the Congress of Local and Regional Authorities, the Cities4Cities platform was created<sup>14</sup>.

Many groups and initiatives have also been formed in Ukraine tackling specific issues of rebuilding cities damaged by the war. Among other things, there are several platforms and developments of architects and their associations suggesting approaches to urban reconstruction and appropriate solutions. The initiatives include ReCreateUkraine<sup>15</sup>, Urbanyna<sup>16</sup>, Ro3kvit<sup>17</sup>, Wise Europe<sup>18</sup>.

Ro3kvit is a network of organizations and specialists working on a volunteer basis. The Coalition operates as a multilateral partnership, as well as a joint group. A Kharkiv NGO, “Architectural Education,” of the Kharkiv School of Architecture, initiated and is engaged in the management and administration of Ro3kvit in general.

Urban Coalition for the Future of Ukraine Ro3kvit conducts their own research and project developments, as well as cooperates with public authorities of Ukraine, such as the Ministry of Communities and Territories Development of Ukraine, and with several Ukrainian cities.

<sup>8</sup> <https://decentralization.gov.ua/news/15192>

<sup>9</sup> <https://hmarochos.kiev.ua/tag/vidbudova-mist/>

<sup>10</sup> <https://eurocities.eu/latest/on-ukraine-visit-mayors-pledge-sustainable-rebuilding/>

<sup>11</sup> <https://www.ukrinform.ua/rubric-uarazom/3554137-vidbudova-ukraini-eurocities-planue-zgurtuvati-ponad-200-mist.html>

<sup>12</sup> <https://eurocities.eu/wp-content/uploads/2022/08/Memorandum-Eurocities.pdf>

<sup>13</sup> <https://cor.europa.eu/en/engage/Documents/Concept-%20ukrainian.pdf>

<sup>14</sup> <https://www.cities4cities.eu>

<sup>15</sup> <https://recreateua.com/>

<sup>16</sup> <https://www.urbanyna.com/dovidnyk-z-vidbudovy-mist>

<sup>17</sup> <https://www.ro3kvit.com/>

<sup>18</sup> [https://wise-europa.eu/wp-content/uploads/2022/10/URBAN-AND-HOUSING-POLICY\\_EN.pdf](https://wise-europa.eu/wp-content/uploads/2022/10/URBAN-AND-HOUSING-POLICY_EN.pdf)

**It is clear that the key to the reconstruction of cities is in the sources and mechanisms of using funds, especially in the postwar period. At the same time, the reconstruction of damaged cities requires answers to a number of critical questions. It needs to account for the specific context (for example, the reconstruction of sites during hostilities). The issues include human capital, the future development of cities, the fate of small cities, the feasibility of generic solutions, the urgent restoration of sites, the dilemma of “fast and cheap” or “better but longer and more expensive”.**

**Human capital – will people return?** People who left the destroyed cities for a long time adjusted their lives in other regions or even in other countries. Schoolchildren and students began their studies elsewhere. Reconstruction of housing, infrastructure, medical facilities, and educational institutions should take into account the expectations (estimates) about the size of the population to return. Such expectations and intentions should not only be the result of identifying the current opinion or intentions of the citizens themselves (which can be done by surveying them). It is a matter of planning the future development of the city – will people get jobs? For example, many cities had one or two local economic mainstay, the enterprises that might have been destroyed or relocated. How to create new jobs in this context? The answer to this question lies in the vision of the future development of the city and the region, rather than in the restoration (reconstruction) of housing or other buildings. **Therefore, people’s expectations and intentions for return should be actively shaped and influenced.**

In this context, the **question arises about the significant differences between the reconstruction of small and large cities.** People are likely to return to a big city (e.g. Kharkiv or Donetsk) as they expect a big city to be a magnet for development and recovery, for education, businesses, enterprises, etc. On the other hand, small towns may face the grim prospect of losing the majority of their population because they may be unable to offer

residents either their previous jobs or new opportunities and prospects. That is why, for such cities, blind reconstruction of what used to be there (housing, kindergartens, etc.) is hardly an efficient approach. Their reconstruction should take place along with the implementation of the strategy for the new urban “ecosystem,” a vision of the city’s own identity. In the most grim scenario, despite the reconstruction of the housing stock, small cities may remain deserted, without any residents, or they may even disappear altogether.

**The rebuilding of some cities and infrastructure is already underway, even during the war.** Is this always done on a modern basis, including energy efficiency, human-centeredness, etc.? “Rebuilding better” means applying both modern technologies and methods and having a vision for the future functioning of the urban agglomeration. Investments in the reconstruction of road infrastructure can take into account the issues of bicycle mobility, thermal infrastructure (the transition to renewable energy sources, the preservation or restoration of centralized heating systems), and housing (energy efficiency, the possibility of using their own renewable sources of heating and electricity supply). In other words, even when the reconstruction is done in emergency circumstances, it should take into account the long-term prospects because new facilities, such as a new CHP, will function for decades to come.

In the context of applying the “rebuild better than it was” principle, in the situation of the ongoing aggression of the Russian Federation, a **dilemma would often come forward: you can rebuild quick and cheap (but neglecting energy efficiency, aesthetics, environment-friendliness) or long and expensive (but safe, eco-friendly, and aesthetic).** In some instances, the dilemma is far-fetched but it is deeply rooted in the stance of the authorities and experts. At the same time, in some cases, it is really necessary to look for complex engineering, urban planning, and architectural solutions in order to be able to combine the quick, cheap, environmentally-friendly, safe, and aesthetically pleasing. We are unlikely to find ready-made

solutions abroad, in any tutorials or on Google. To rebuild the cities of the future, not of the past, we must find our own solutions to these unique challenges generated by Russian aggression and coming from the scale of destruction.

One of the tools to facilitate the search for ways and methods of reconstruction is the **development of typical solutions**. For example, model plans for the restoration of a city, a neighborhood, or generic construction sites (“Khrushchev-time houses”, “panel-made houses”, “Czech-design houses”, etc.). Such off-the-shelf solutions can significantly speed up the reconstruction process, especially during the period of hostilities, if they are integrated into the relevant legislative and administrative mechanisms (for example, when they do not require expert examinations of design documentation). Currently, the government proposes a similar approach for the restoration of buildings, without special permits, but only in the case of restoring the site to the previous condition (which does not require “to rebuild better than it was”).

At the same time, cities and hromadas should be able to implement **individual solutions adapted to their own reality, vision of development, and opinions of the local community**. To ensure cities could apply individual approaches (solutions), such an opportunity should not be associated with a significant complication of the planning (design) process. In addition, the country needs to create transparent conditions (market) for the emergence of appropriate commercial services to plan (design) and implement (construct) such initiatives.

Under any circumstances, the state (the government, the Verkhovna Rada) should consolidate a **clear strategic framework for the reconstruction of cities**. First of all, this requires the consolidation of the relevant principles of reconstruction. In our opinion, the principle of “rebuild better than it was” is not enough. It should be detailed, and clarified with the corresponding meaningful vision: a modern vision common to the reconstruction of destroyed cities and the transformation of others. There shall be a vision of the future cities. We support the green model of this vision.

## 2.2. Green Transformation

In the process of postwar reconstruction, it is important to help cities that have not been affected or that have suffered minor damage. They need support to facilitate their green transformation. These cities must not be forgotten.

Currently, cities have significant restrictions on the use of their budgets. Donors and international support mainly focus on cities that have suffered significant destruction. However, in the postwar period, they should receive incentives and support to draft and implement their development plans, including sustainable energy and climate action plans.

In this process, the role of partnerships with

other European cities is critical. It means learning their experience and networking. Ukrainian cities must join the existing networks of European cities, including initiatives and processes implemented within the framework of the European Green Deal in the EU, UN, and OECD, such as the European Climate Pact, New European Bauhaus, Covenant of Mayors, etc.

**The programs that were in place in previous years should resume their activities.** A positive example is the resumption of the EBRD’s Green Cities Programme (for example, it resumed its activities in Khmelnytskyi<sup>19</sup>). Cities that already have ambitious and adopted green transformation plans (such as the Green Deal in Vinnytsia) should be receiving support today.

<sup>19</sup> <https://euneighbourseast.eu/uk/news/latest-news/programa-zeleni-mista-vidnovlyuye-robotu-u-hmelnyckomu/>

As of 2020, 7 Ukrainian cities that are signatories of the Covenant of Mayors have announced the goal of switching to 100% RES by 2050. These are Zhytomyr, Chortkiv, Lviv, Kamianets-Podilskyi, Poltava, Trostianets, and Baranivka.

In Zhytomyr and Lviv, Naftogaz plans to build a CHP on biofuels and solid secondary biofuels.<sup>20</sup>

**Unfortunately, most cities do not have modern development plans.** Cities, including those participating in the Covenant of Mayors (currently 311<sup>21</sup>), will need support to implement their plans, including those that have already developed sustainable energy and climate plans. This process is inextricably linked with ensuring the energy security of the country, reducing the social negative consequences of the war (such as inflation) and with uniform and socially just postwar development, as well as the return of people.

In this context, **state support** should be based on the appropriate planning of the cities themselves. As one of the experts we interviewed said, not all cities with plans implement them, but there is not a single example of a city that would successfully transform without a plan (strategy). Such plans should have a realistic phased vision of the necessary steps and funding needs.

In addition, the availability of strategic documents on green transformation allows cities to expose their “red lines in reconstruction” and not to implement non-environmental decisions that come from above.

The question of the so-called **autonomy of cities** is difficult to address, while in the context of war, it has become an important focus of their effort. It means capacity of cities to provide themselves with water, electricity, and thermal energy, with the damaged central systems. European cases show that urban agglomerations, among others, can build effective partnerships with adjacent territories and provide themselves with 100% renewable energy sources.

At the same time, such tasks to ensure the “autonomy” of cities will have negative consequences. In particular, this will mean that centralized systems (e.g. gas or electricity) will only be used for balancing or standby. At the national level, this may raise the question of the survival of such systems, since their functioning in such a “standby mode” will require significant funding, which cannot be provided without using such systems as the main resources (energy). Therefore, decentralization of energy production is the most realistic alternative to the idea of energy autonomy of cities.

No less important is the **problem of markets (such as the market of energy products)** that the cities depend on. Cities do not function outside such markets, their absence is sending some false or contradictory (changeable) signals for municipal or private investment due to distortions in the markets of major energy carriers. Currently, the security of energy supply is an important factor impacting the decision-making (to build or not to build a biogas plant at a landfill or at waste treatment facilities, either to build a CHP on biofuel or gas, etc.). However, after the hostilities end, this security factor will not be the main, and, accordingly, market conditions will be decisive for attracting investments and city plans. A similar situation is common for many other areas, such as in waste management.

Thus, the postwar green transformation of cities can take place only with proper planning by cities, with state support and with the creation of appropriate external market conditions for such a transformation. Green transformation of cities cannot happen if each of these three elements does not contain the appropriate green goals.

<sup>20</sup> Naftogaz is planning to build CHP plants in Lviv and Zhytomyr that will run on alternative biofuels. <https://www.epravda.com.ua/news/2022/10/2/692118/>

<sup>21</sup> <https://www.eumayors.eu/about/covenant-community/signatories.html>

## 2.3. Capacity

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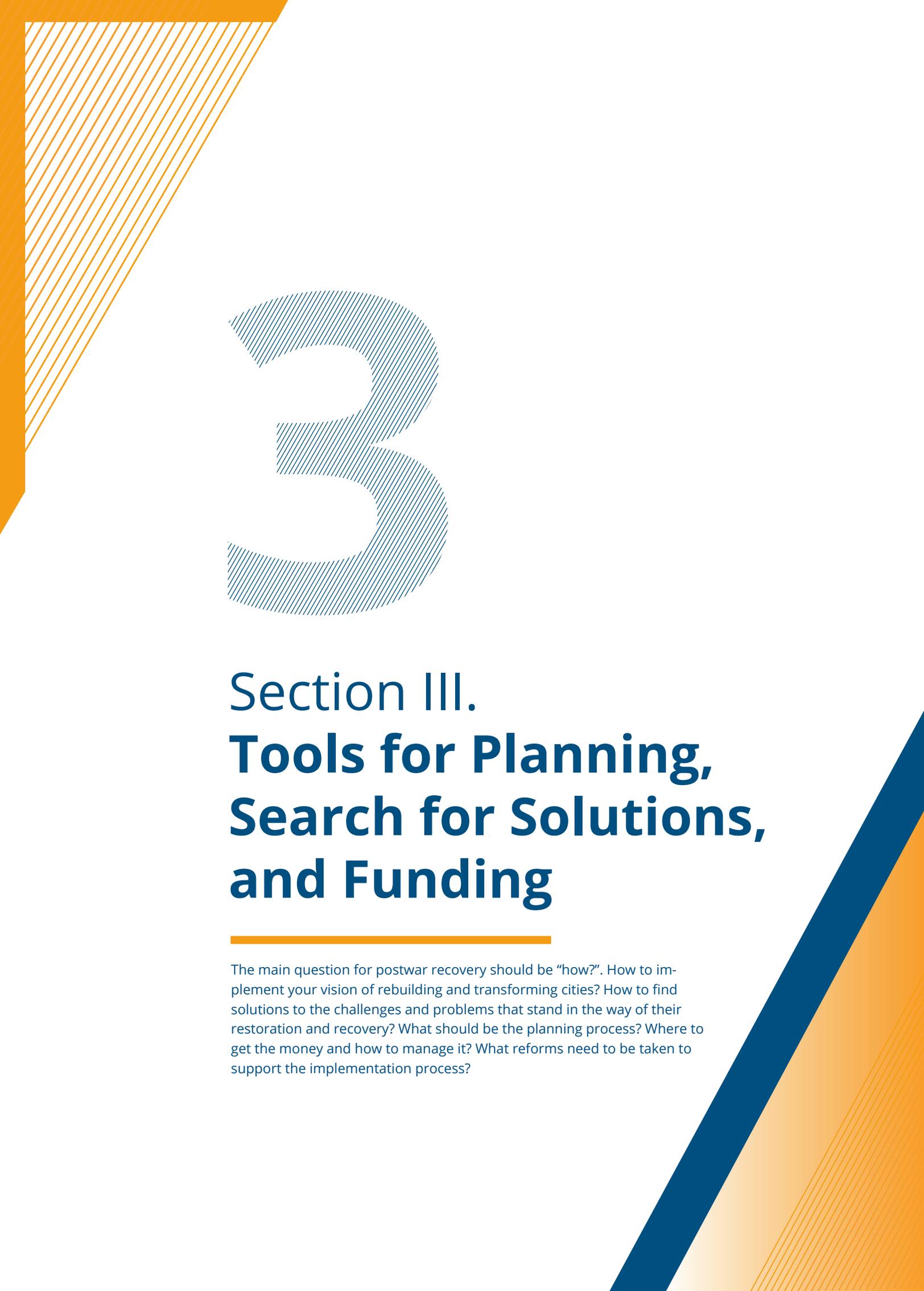
Institutional capacity is a cross-cutting and pertinent issue for green reconstruction and urban transformation. Lack of institutional capacity is especially pressing for the reconstruction of the liberated cities that face a shortage of qualified staff and, ultimately, a shortage of residents.

Capacity means knowledge, human resources, and institutional arrangements for the efficient use of such knowledge and resources. Without capacity building, cities will not be able to independently plan and implement ambitious green transformation plans. They would depend on the decisions, instructions, and recommendations from regional and central authorities.

In the field of energy transition, sustainable energy, and sustainable transport, some cities have already gained certain experience. At the same time, even they lack specialists with knowledge in other areas, such as adaptation to climate change, biodiversity, noise pollution, etc.

One of the mechanisms for solving this problem may come from **offices for supporting the green transformation of cities at the regional level**. Many cities do not have the resources to attract specialists due to lack of funds and people. Such offices could have appropriate staff available for all cities in the region. It will also contribute to the accumulation of experience, and the exchange of best practices. The implementation of such a mechanism requires government support.

In addition, cities can significantly strengthen their ability to transform by supporting self-organization of the population, through developing a culture of informal self-organization of residents at different levels (streets, courtyards, etc.). Such culture of self-organization of the population can significantly strengthen the process of transformation by attracting the capacity of residents and by ensuring a sort of institutional memory and sustainability of the process itself. In fact, local initiatives are the most stable and do not depend on changes in the city authorities, or in local and national policy.



# 3

## Section III. **Tools for Planning, Search for Solutions, and Funding**

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The main question for postwar recovery should be “how?”. How to implement your vision of rebuilding and transforming cities? How to find solutions to the challenges and problems that stand in the way of their restoration and recovery? What should be the planning process? Where to get the money and how to manage it? What reforms need to be taken to support the implementation process?

## 3.1 Planning of the Postwar Recovery of Cities

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From the point of view of the theory of policy-making, the planning of postwar reconstruction of Ukraine remains by far on the verge of the first and second stages: the definition (understanding) of the problem and the development of solutions. Every day of the war brings us back to the first stage because the destruction continues, and the targets of the Russian invaders change. Every attempt to find solutions also brings us back to the problem analysis as it reveals new components of the problem.

For example, the **obvious problem is the ability to plan the future socio-economic development of territories** (regions, sub-regions, cities, and villages). The youngest city in Ukraine, Slavutych, was founded in 1987, 35 years ago. The country does not have the experience of building new agglomerations, of creating industrial or new economic areas, regions or zones, whereas the postwar restoration will require this. It means that in addition to postwar reconstruction per se, we will face the problem with the capacity to plan and implement large-scale projects (programs) for the development of territories.

The National Council for the Recovery of Ukraine from the War Consequences, created by decree of the President of Ukraine, is the first attempt to start the planning. The development of draft sections in the recovery plan will certainly require new iterations, and more cycles of consultations and deliberations.

From the point of view of postwar recovery (including the reconstruction and transformation of cities), the current process has not led to any holistic concept yet, either green, or any other (see Appendix 1). Currently, the draft sections of the plan rather resemble the findings of a brainstorming session. Although the National

Council for the Recovery had a broad mandate, it apparently had not made use of it.

**To be able to efficiently continue the process, the National Council must be given a clear and substantive mandate, objectives, and vision for the restoration. In our opinion, the task should focus on the development of a draft for the green postwar reconstruction of Ukraine, which can combine the priorities of security, social justice, and progress, and present a historic mission to the entire generation of Ukrainian citizens.**

Today, the urgency to reduce Ukraine's energy dependence includes two critical elements. The country has a high import dependence on fossil fuels (such as natural gas), which Russia uses as an economic and political weapon. Secondly, there is a need to counter climate crisis which was seriously exacerbated by Russia's aggression against Ukraine. Modernization of a huge urban infrastructure combines consumption (construction sector) and supply (heat and water sources, networks, water treatment plants, etc.) and requires significant financial, human, and time resources. In fact, the scale of Ukraine's recovery needs that accounts for modern approaches should change the principles of state and local energy and investment planning, as well as targets for the coming two decades, the planning horizons in particular. Ukraine has not had the experience of such changes before.<sup>22</sup>

Therefore, in the context of green reconstruction of cities and urban transformation, cities should strive for climate neutrality, which is associated with energy efficiency, transition to sustainable transport, investment in renewable energy in energy and heating sectors, and adaptation to climate change. Accordingly, the principles of urban recovery could be the following:

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<sup>22</sup> Draft Recovery Plan of Ukraine, materials of the working group "Construction, Urban Planning, Modernization of Cities and Regions of Ukraine."

1. maximum energy efficiency of cities;
2. energy transition of cities;
3. “zero waste” for cities and circular economy;
4. environmental friendliness of buildings and facilities;
5. adaptation to climate change;
6. promotion and transition to a green lifestyle;
7. transformation of life from resource-consuming to resource-saving;
8. engaging citizens as climate ambassadors;
9. involvement of consumers in the circular economy.

According to our findings, the cities have not been involved in the development of the draft National Recovery Plan. Moreover, no representative of the local authorities with whom our research team communicated was aware of the scope of work of the Working Groups of the

National Council for Recovery. Since this process took place in working groups that were open to experts, the problem may obviously be related to the fact that cities expected their formal involvement as partners of the process. Instead, the process of developing the National Recovery Plan provided for the formal involvement only of the Government, the Parliament, and the Office of the President of Ukraine.

**Therefore, further planning of postwar recovery should ensure proper involvement of cities and local communities.** This axiom, unfortunately, need to be highlighted. Local communities and cities shall not be the executors of the recovery plan, they should be full-fledged actors and partners in the postwar recovery of Ukraine.

## 3.2 Search for Solutions to Overcome Challenges

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The green reconstruction and transformation of cities will face a number of challenges, including those outlined above. As noted before, off-the-shelf solutions are unlikely to be found in other countries, in textbooks, or on Google. We need to find our answers to the extremely complex and unprecedented challenges that the country faces in the process of postwar reconstruction.

Therefore, the plan (process) of postwar reconstruction should provide tools for finding solutions to problems that we already know of. In the context of postwar reconstruction and transformation of cities, two such tools can be offered. These two tools do not cover all the problems described, and other tools need to be developed to find solutions to the remaining key issues. We provide them as illustrations of tools for finding solutions that the postwar reconstruction planning process should involve.

The first tool to be mentioned deals with a complex dilemma in the reconstruction process,

such as either “fast and cheap” or “nice, but long and expensive”. If we wish to rebuild the cities of the future (rather than the past), Ukraine needs a postwar Bauhaus, following the model of the New European Bauhaus.

**Postwar Bauhaus-Ukraine needs a platform to find solutions in the field of green reconstruction and urban transformation.**

It shall be a platform that would bring together architects, builders, urban planners, citizens, artists, and all other stakeholders. The platform’s mission should be to find an answer to the question of how to make the postwar reconstruction of cities combine the “fast”, the “sustainable (environment-friendly)”, the “beautiful”, and the “safe”. We are convinced that a properly organized platform (process) will provide an opportunity to find unique answers to these complex practical questions using the experience of our specialists and colleagues from abroad.

The EU defines the Bauhaus as a platform for experiments and interconnections that foster cooperation, a bridge between the world of science and technology and the world of art and culture, an invitation to change perspectives and perceive the need for green and digital transformation as an opportunity to change lives for the better, a new approach to jointly finding innovative solutions to complex social problems, shaping thinking, behaviour, and markets around new ways of living and building, including through the greening of public procurement.<sup>23</sup>

It is critically important for Ukrainian cities to rebuild culturally and be people-oriented, like sensitive to the needs of people. Construction should have greater resource efficiency and use more recycled materials, avoiding the use of hazardous materials. The ecosystem should cover every part of the life cycle of buildings and infrastructure. A separate role in this process belongs to designers, including through the specifications of materials, for the best use of resources and ensuring future reconstruction, repurposing, and deconstruction.

The second tool concerns the green transformation of cities. Since cities lack the capacity to implement such ideas or even to properly understand their meaning, **Ukraine, together with the EU, should launch a large-scale program to involve Ukrainian cities in all European green platforms/networks that help cities in a green transformation.** As we strive to be part of the EU, such involvement of cities today must find political and financial support from the Ukrainian government and the EU. Next come some examples of such platforms.

The Green City Accord is a movement of European mayors that helps cities improve governance in the areas of air quality, water, nature and biodiversity, circular economy and waste, and noise pollution. This platform is similar to the Covenant of Mayors, but focuses on other substantive issues.

Initiatives contributing to the transition to a circular economy in cities (the Circle Cities Program, the Circular Cities and Regions Initiative, etc.).

Cities and their inhabitants should be members of the European Climate Pact, a long-term EU initiative, a space for exchange of ideas, debate, and action on climate change. In fact, it is a tool for the building of a new social climatic consciousness.

Finally, the New European Bauhaus, the “soul” of the European Green Deal. It is an innovative process, a platform where new ideas for the building and housing sector are sought. It is clear that cities seeking transformation should also be included in the postwar Bauhaus-Ukraine proposed above.

Cities should be supported to participate in the running funding programmes and initiatives in the EU, such as LIFE and Horizon. These programs require cities to have a significant capacity to submit relevant projects and implement them, the ability to co-finance significant shares of large project budgets. The detailed tools are described in Appendix 3 and include many initiatives for strategizing, networking, and public participation.

All found solutions will require a new legislative framework. The current efforts of the Government and the Verkhovna Rada of Ukraine aimed at facilitating and regulating the reconstruction process (see Appendix 2) must be adapted. Otherwise, new regulations must be adopted. It is important that the search for solutions is not a search for new changes to laws or other regulatory acts. Their role is to set legal framework the implementation of such solutions.

<sup>23</sup> Read more about the new European Bauhaus here: From words to action: The new European Bauhaus is an energy-efficient aesthetics to achieve the goals of the European Green Deal. A guide for cities. Edited by Svitlana Romanko. — Resource and Analytical Center “Society and Environment” (2021), <https://www.rac.org.ua/priorityty/evropeyskyy-zelenyy-kurs/novyiy-evropeyskyy-baugauz-energoefektyvna-estetyka-dlya-dosyagnennya-tsiley-evropeyskogo-zelenogo-kursu-posibnyk-dlya-mist-2021>

### 3.3 Financing Mechanism

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Postwar reconstruction and transformation of cities will require huge financing. Such funds can come from the international assistance, from reparations received from Russia, from the central budget, local budgets, and from private investment. The volume and pace of use of such resources require new approaches to the administration of financial processes.

“Public” sources (all of the above except private investment) should not only play the role of financing direct costs, but they should also set conditions for attracting private investment. This role (function) of public financing for reconstruction is a necessary precondition for the reconstruction and transformation of cities, since no public funds are able to ensure either the volume of such investments or further self-sufficient and effective operations of the new facilities. This function of public financing cannot be ensured without the creation of proper legislative and administrative settings, in particular ensuring the transparent functioning of the main markets, combating corruption, etc. Therefore, ensuring pro-European reforms (primarily those related to EU accession) is a necessary parallel task.

Currently, many cities in need of reconstruction face the problem of reduced budgets, which is associated with the relocation or destruction of enterprises, a decrease or lack of economic activity in the city. Thus, the postwar reconstruction of cities will mainly rely on international and government sources of funding.

Recently, there has been much discussion about international funding for postwar reconstruction. In particular, there is some competition between the main players regarding the management of such funds. At the same time, from the point of view of cities, the key factor will be the mechanism of using funds, rather than the structure of managing the funds. For example, the combination of funds from international

donors for the purposes of one program (project) is likely to lead to a significant complication of the process of obtaining and using funds. In other words, when there are two donors, it means two sets of requirements, approvals, conditions, etc. All this will cause a significant delay in the use of funds, complicating the whole mechanism for cities where there is already a lack of capacity to obtain and use the funding.

Therefore, potential multilateral mechanisms for international financing of postwar reconstruction and transformation of cities should be as unified and simplified as possible, and provide for fast and transparent processes for attracting and using such funds by cities. Ideally, they should be as unified as possible with the mechanisms for the use of public funds.

Various programs to support the green transformation of cities that existed before the war (including loan programs) should resume and improve their work. The current practices, which cities often complain about, when international loans take several years to receive, needs to change. The government should take a proactive stance on this matter if we want to ensure the receipt of such funds when they are most needed.

State support for the green transformation of cities, including common subsidies and budget transfers, should be based on a whip-and-carrot policy. The condition for its receipt should be the availability of realistic targeted plans for the postwar transformation of cities, such as the sustainable energy and climate plans.

In general, cities should see clear, transparent, and realistic mechanisms for obtaining funds for reconstruction and transformation. For their part, cities must themselves offer clear, transparent, and realistic plans for their postwar development, and build their own capacity to implement complex postwar reconstruction programs (projects).

# Appendix 1.

## Cities and Tools for their Recovery in the Draft Plan for Postwar Recovery of Ukraine

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The Ukraine's Recovery Plan is a document that presents a vision and course of the government for the recovery and development of Ukraine (and cities, in particular) from the consequences of the war in the urgent/short/mid-term. However, the recovery plan requires the formulation of a common vision, the definition of common (cross-cutting) goals and the harmonization of activities of different working groups to ensure the effectiveness of its implementation.

The vision of postwar reconstruction was presented at the Ukraine Recovery Conference in Lugano on July, 4-5, 2022. Furthermore, the National Council for the Recovery of Ukraine from the Consequences of the War, established by the President of Ukraine in the format of the Working Groups, developed a draft Recovery Plan in 24 focus areas.<sup>24</sup>

The issues of restoration and development of regions and territorial communities have been comprehensively considered in the section "Construction, Urban Planning, Modernization of Cities and Regions of Ukraine".<sup>25</sup> Recovery and development are based on such key principles as "rebuilding better than before", openness and transparency, European integration, sustainable development, energy independence, inclusion, and civil protection. For each separate group of issues (restoration and stimulation of regional development; regulation in construction; housing, energy efficiency, civil protection; infrastructure of life support systems), they determined the purpose, goals, objectives and stages of their implementation, as well as relevant targets.

Regarding the issues of restoring and stimulating the development of regions, the following goal and key target indicators have been identified:

**1.1. To return people to Ukraine and back home. To create conditions for providing people with work, housing, public services, and a safe living environment. To stimulate fertility and provide support for families with children. To build a geographically balanced system of resettlement.**

Target indicators in the short term: 60% of citizens returned to de-occupied territorial communities; 50% of citizens who left after the introduction of martial law returned to Ukraine; 70% of IDPs of working age are employed in the relevant region; mid-term indicators: 75-80% of people who left after the introduction of martial law returned to Ukraine; 75% of citizens returned to de-occupied territorial communities; 75% of citizens have access to high quality public services; in the long term: annual positive natural population growth; all citizens have access to quality public services; a positive balance of external migration, etc.

**1.2. To plan, restore and develop critical, social, economic, transport infrastructure; public facilities and public service network, according to modern approaches and in line with the challenges, opportunities, and limitations in different types of territories.** Targets in the short term:

<sup>24</sup> <https://www.kmu.gov.ua/diyalnist/nacionalna-rada-z-vidnovlennya-ukrayini-vid-naslidkiv-vijni/robochi-grupi>

<sup>25</sup> Draft Ukraine Recovery Plan. Materials of the working group "Construction, urban planning, modernization of cities and regions of Ukraine" // <https://www.kmu.gov.ua/storage/app/sites/1/recoveryrada/ua/construction-urban-planning-modernization-of-cities-and-regions.pdf>

assess the condition, identify the needs, and plan the restoration and modernization of public service infrastructure and network in each region; restore critical infrastructure in the de-occupied territories; in the mid-term: to build / restore / modernize public service infrastructure and network under modern approaches and in accordance with the challenges, opportunities, and limitations in different types of territories, in accordance with the new needs and EU requirements.

**1.3. To stimulate the development of local, regional and macro-regional economies based on the potential of different types of territories and with account for “green economy” principles.** Targets in the short term include, among other things: 30% of businesses affected by the armed aggression of the Russian Federation resumed their activities after its termination; 15% of regions show the growth of the industrial production index compared to the previous year; 10% of regions show the growth of the agricultural production index; 15% of regions have the increase in the number of SMEs per 10 thousand of the available population; in 10% of the regions, the employment rate of the population aged 15-70 years increased; in the mid-term: in all regions, more than 80% of businesses resumed activities after the termination of the armed aggression; 70% of regions see the growth of the industrial production index; 50% of regions see the growth of the agricultural production index; 50% of regions have the increase in the number of SMEs per 10 thousand of the available population; in 30% of the regions, the employment rate of the population aged 15-70 years increased; at least 25 industrial parks are provided with engineering and transportation infrastructure; in the long term: the number of non-industrial infrastructure increased in all regions; agricultural production index increased in all regions; at least the 25% share of capital investment into GRP in 20 regions; at least 60 industrial parks are provided with engineering and transportation infrastructure, etc.

**1.4. To create a system of multilevel governance and specialized institutions for the development of territories that meets the challenges of wartime and postwar recovery and development. To ensure data-driven policymaking and management decision-making.** Target indicators in the short term: all authorities perform their functions (powers) in 100% of the liberated territories; in the mid-term: in all regions, there are functioning Regional Development Agencies; 90% of the public officials in the authorities have increased their managerial capacity through training; 100% of the territorial communities have mid-term budget planning; 100% of the territorial communities have development strategies (except for the affected territories); 100% of the territorial communities have adopted a comprehensive spatial development plan; in the long term: all regions and territorial communities have relevant (updated) regional development strategies and community development strategies.

Regarding regulatory issues in construction, the following goal and key target indicators have been identified:

**2.1. Comprehensive restoration of infrastructure and housing after the destruction, on the basis of modern approaches and practices of development of regions/ territorial communities/ settlements, under the sustainable development principles.** Target indicators in the short term: an inventory of damaged objects has been taken, a list of priority restoration objects has been compiled, information has been collected on the needs for the development of social infrastructure taking into account migration processes; in the mid-term: 100% of comprehensive restoration programs developed; 40% of urban planning documentation updated at all levels; in the long term: 100% of strategic and programming documents updated at all levels; 100% of urban planning documentation updated at all levels.

**2.2. Ensuring publicity and transparency of urban planning documentation and implementation of permit and registration procedures.** Target indicators in the short term: the regulatory framework has been updated (100%); a plan for reviewing construction standards has been adopted; in the mid-

term: there is an integrated system of city-planning cadastre at the national level; city-planning terms and restrictions can be obtained in the form of an extract; automatic registration of the right to perform construction work and acceptance of the completed construction object into operation with the help of software of the Unified State Electronic System for Construction; reform of state urban planning control and supervision has been carried out; in the long term: the share of urban planning documentation (100%), the share of permit procedures (100%).

**2.3. Effective management of buildings during their life cycle.** Target indicators in the short term: legislative acts and regulatory documents adopted; in the mid-term: publicly available databases available; in the long term: management of buildings and facilities, in particular residential and civil buildings, during their life cycle.

**2.4. Implementation of European rules for assessing and verifying the stability of indicators of construction products. Implementation of Regulation (EU) No 305/2011.** Target indicators in the short term: the infrastructure has been created to assess the conformity of construction products with the requirements of Regulation (EU) 305/2011; in the mid-term: the system of conformity assessment in the field of construction in Ukraine meets the EU requirements 100%.

**2.5. Introduction of a system for the sustainable management of building and demolition waste.** Target indicators in the short term: to establish the Procedure for waste management generated in relation to war-caused damage to buildings and facilities; to collect data on the volume of waste generation; in the mid-term: to sort at least 30% of waste from destruction at the established temporary storage sites; to recycle and dispose of 20% of the generated building and demolition waste; in the long term: to recycle and dispose of 60% of building and demolition waste.

Regarding housing, energy efficiency, civil protection, the following goal and main target indicators have been identified:

**3.1. Restore the livable condition of the damaged housing and provide compensation in case of futility of housing restoration (major damage, destruction, etc.).** Target indicators in the short term: 10% of the damaged housing stock has been restored; in the mid-term: 50% of citizens have been provided with compensation for damaged/destroyed housing; in the long term: 100% of citizens have been provided with compensation for damaged/destroyed housing.

**3.2. Provide housing for IDPs and persons whose housing was damaged/destroyed due to the armed aggression of the Russian Federation against Ukraine.** In the short term, the following targets have been envisioned: 100% of citizens in need of temporary housing have been accommodated in places for temporary residence; in the mid-term: 50% of citizens are provided with housing (compensation for rent, increase in housing funds for temporary residence and social housing, and other tools for temporary use); in the long term: 100% of citizens are provided with housing (developed market and many tools for providing housing).

**3.3. Maintenance and servicing of residential buildings is carried out in full scale.** The main target indicators in the short term: co-owners of multi-apartment buildings have access to building management; in the mid-term: 70% of multi-apartment buildings have effective management and maintenance of buildings, which ensures the proper technical condition of buildings, in accordance with the basic safety requirements; in the long term: 100% of multi-apartment buildings co-owners have access to effective management tools (organizational, financial, informational, methodological, etc.), 50% of multi-apartment buildings have had major repairs completed.

**3.4. Providing the maximum number of the population with protection from dangerous damage due to hostilities.** Key target indicators in the short term: the stock of civil protection facilities expanded; 90% of existing civil protection stock is ready for use; a new planning approach developed; in the mid-term: 100% of existing civil protection facilities stock is ready for use. The Civil Protection Facility Fund is expanded through a new approach to territory planning and construction; in the long term: maximum number of civilians have access to Civil Protection Facilities.

**3.5. Creating conditions for sustainable energy development of communities and regions of Ukraine.** Key target indicators in the short term: 100% of local governments are provided with a methodology for long-term energy planning; in the mid-term: 100% of local governments have introduced planning and efficient management of fuel and energy use; in the long term: 30% reduction in energy consumption and greenhouse gas emissions/ decarbonization of energy use in hromadas.

**3.6. Strengthening energy independence by reducing the energy intensity of the residential and public buildings sector in an energy-efficient way.** Key target indicators in the short term: increase in energy efficiency in the sector of buildings by 5%; in the mid-term: by 13%; in the long term: by 35%.

Regarding the infrastructure of life support systems, the following goal and main target indicators have been identified:

**4.1. To guarantee to consumers continuous, safe, affordable, and high-quality heating supply.** Target indicators in the short term: 100% of Ukrainian citizens are supplied with heating; in the mid-term: a 20% reduction in the use of natural gas for heat supply needs; in the long term: 50% of thermal energy in heat supply systems is obtained from renewable energy sources, sources of waste heat energy, and cogeneration plants.

**4.2. Ensuring the stable functioning of centralized drinking water supply systems.** Target indicators in the short term: ensuring the stable functioning of centralized drinking water supply systems; in the mid-term: modernization of 10% of centralized drinking water supply systems; in the long term: modernization of 30% of centralized drinking water supply systems.

**4.3. Ensuring the stable functioning of centralized water discharge systems.** Target indicators in the short term: ensuring the stable functioning of centralized water discharge systems; in the mid-term: modernization of 10% of centralized water discharge systems; in the long term: modernization of 30% of centralized water discharge systems.

**4.4. Structural modernization of the system of household waste management and bringing it in line with European standards.** Target indicators in the short term: restoration of damaged household waste management equipment; in the mid-term: restoration of damaged and/or destroyed objects and household waste management equipment; recycling and recovering of 10% of the total volume of household waste; in the long term: recycling and recovering of 15% of the total volume of household waste.

The draft Recovery Plan offers a range of **tools** for the postwar city's development and for their long-term growth. In particular, the development and implementation of various programs and plans (for example, regional development programs "Territorial Cohesion of Ukraine" and "Development of Human Capital", the program "Stimulating the Development of Regional Growth Poles," "New Ukrainian Village," "Development of Border Areas in Adverse Conditions," "Development of the Macroregion of the Ukrainian Carpathians," "Developing the Potential of the Macroregion " Azov-Black Sea," the State Dedicated Program for the fair transformation of monofunctional cities of Ukraine, plans for the restoration and

modernization of infrastructure facilities), the development of guidelines and measures to increase awareness, the creation of special mechanisms for financing reconstruction, improvement of legislation, development of industrial parks, implementation of pilot projects, strengthening the capacity of local self-government bodies, etc.).

**Regarding green issues**, we can see that the draft Recovery Plan focuses on stimulating the development of local, regional and macro-regional economies based on the potential of different types of territories and taking into account the green economy principles. Achievement of the goals with account for green economy principles is planned to start on the 2nd and 3rd stages of recovery and development. However, the indicators for achieving this goal and objectives include general socio-economic indicators. The indicators that would reflect the principles of green economy are not provided. At the same time, individual tasks are outlined that will contribute to achieving the goal, taking into account the green economy principles. For example, the priorities for the development of rural infrastructure include the objectives to create enterprises for the energy processing of forest and agricultural waste, the production of biodiesel and bioethanol.

The plan provides for specific tasks **for the reconstruction of infrastructure and housing, sustainable management of building and demolition waste, major repairs, modernization of the existing housing stock, including energy-efficient measures, sustainable energy development of communities and regions of Ukraine**, etc. It is important that such tasks are provided not only for the stage of recovery from the consequences of the war, but also for the development of regions in the future. They shall be based on the principles of sustainable development, such as human-centered approach, rational spatial planning, urban mobility, inclusion, energy efficiency, environmental friendliness, and the “life-work balance” settings.

**The draft plan contains a number of important target indicators related to waste management, sustainable energy development, decarbonization, energy efficiency**, etc. They include the following:

- introduction of a system for the sustainable management of building and demolition waste provides for the processing and recycling of 60% of construction and demolition waste;
- creation of conditions for sustainable energy development of hromadas and regions in Ukraine provides for a 30% reduction in energy consumption and greenhouse gas emissions/ decarbonization of energy use in hromadas;
- strengthening energy independence by reducing the energy intensity of the residential and public buildings sector in an energy-efficient way provides for an increase in energy efficiency in the building sector by 35% (through large-scale thermal modernization of buildings and construction of buildings with close to zero energy consumption).

The development of cities and regions is also considered in the context of **environmental security**.<sup>26</sup> In particular, they focus on the adaptation to climate change in integrated recovery programs/projects at the regional and local levels, on the implementation of pilot recovery projects at the regional and local levels (taking into account the challenges of adaptation to climate change) and projects for their implementation (for example, “Planning and further recovery of community infrastructure adapted to climate change consequences, as determined by the assessment of vulnerability to climate change,” “Ecomodification of large combustion plants that play the role of critical infrastructure for city’s heating supply”).

<sup>26</sup> Draft Ukraine Recovery Plan. Materials of the working group // <https://www.kmu.gov.ua/storage/app/sites/1/recoveryrada/ua/environmental-safety-assembly.pdf>

The draft plan also considers the **issue of waste management**, both in the context of environmental safety and the development of cities and regions, and provides for the modernization of the system of management of household waste in accordance with EU standards. However, different sections of the plan offer different targets (15% recovery and recycling in the section on regional development in contrast to 40% in the section on environmental safety). At the same time, certain issues are left out of the draft plan, such as the biodiversity related issues in cities.

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<sup>26</sup> Draft Ukraine Recovery Plan. Materials of the working group // <https://www.kmu.gov.ua/storage/app/sites/1/recoveryrada/ua/environmental-safety-assembly.pdf>

## Appendix 2.

# Legislative Changes: How to Help Cities Rebuild

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### 2.1 Recovery of cities from the war consequences: legislative changes and their impact on the policy making in Ukraine

Before the war, the national policy of regional development, as well as the policy for the development of cities, were made in line with a number of trends, such as the EU integration, decentralization, reform of the energy sector, and implementation of energy efficiency reforms. In the process of long-term planning, some cities followed a model of the the European ideas of green transformation. For example, on January, 28, 2022, the Vinnytsia City Territorial Community was the first in Ukraine to proclaim the Green Deal following the example of the European Green Deal<sup>27</sup>.

However, the war has introduced its own adjustments, so the national and local government policies will be built through the prism of Ukraine's recovery and development after the consequences of the war. In this process, it is crucial to keep the previous developments and implement the "build back better and greener" principles. Therefore, it is worth considering the changes that national legislation has undergone in connection with the need to rebuild and develop Ukraine in general, and cities in particular. Furthermore, instruments of government planning are important to consider, and how further recovery and development of cities will be determined.

**Recent legislative changes were preconditioned by the need to take into account war-related and postwar challenges for Ukraine's recovery and further growth. In particular, amendments to the Laws of Ukraine "On Regulation of Urban Development Activities" and "On the Principles of State Regional Policy" were adopted.**

On May, 12, 2022, amendments to the Law of Ukraine "On Regulation of Urban Development Activities" were adopted,<sup>28</sup> which included the following issues:

- *restoration of cities*: they determine ways to rebuild destroyed localities, introduce a new type of programs for the all-encompassing recovery of a region, a territory of the territorial community (its part);
- *arrangement/building of temporary housing*: they determine the procedures for the development of schemes for the location of temporary structures intended for temporary residence and maintenance of citizens who have lost their homes, to simplify the mechanisms for the capital construction of objects for temporary residence of persons who have lost their homes;
- *relocation of enterprises*: they regulate procedural issues related to the placement of production facilities of relocated (evacuated) enterprises;
- *land issues*: they simplify the procedures for allocating land plots.

<sup>27</sup> Vinnytsia is the first Ukrainian community to proclaim the Green Deal // Vinnytsia City Council. – News, 28.01.2022. <https://www.vmr.gov.ua/vinnytsia-persha-ukrainska-hromada-i-aka-proholosyla-zelenyi-kurs>

<sup>28</sup> On introducing changes to certain laws of Ukraine concerning priority measures of reforming the sphere of city-planning activities. Law of Ukraine dated May, 12, 2022 No. 2254-IX. <https://zakon.rada.gov.ua/laws/show/2254-20#n18>

On July, 9, 2022, the Verkhovna Rada amended the Law of Ukraine “On the Principles of State Regional Policy”,<sup>29</sup> which addressed the following issues:

- *focus areas of the state policy*: they added a new focus in the state policy to adapt the regional economy and human habitat to climate change, to strengthen the resilience of territorial communities to climatic, demographic, and economic challenges;
- *strategic planning systems*: the system of strategic planning documents for regional development has been expanded, their adoption was determined as obligatory, logical integrity and interconnection have been included;
- *restoration and development*: the system of documents of the state policy for regional development includes documents on recovery and development, functional types of territories are determined which will affect the strategic planning of their further recovery and development;
- *institutional mechanism*: the coordinating role has been strengthened for the Ministry of Development of Communities and Territories of Ukraine in the implementation of regional policies, and in the institutional support for regional development;
- *monitoring and evaluation of state regional policy*: the mechanism of such monitoring has been specified, the phased assessment of state regional policy is provided – at the stages of development, implementation (interim), and after the completion of the implementation of strategic planning documents.

In addition, a number of recovery-related draft laws were registered: the peculiarities of the procedure for restoring damaged buildings,<sup>30</sup> the powers of local governments and military administrations<sup>31</sup>, the principles of the functioning of the recovery fund and the stimulation of the development of regions and territories.<sup>32</sup>

Article 7 of the Law of Ukraine “On the Principles of State Regional Policy” has been amended to define the system of documents. Three key focus areas of public policy can be highlighted that will entail the adoption of documents: **(1) strategic planning, (2) implementation, (3) recovery and development.**

The law defines the documents of **strategic planning** of the state regional policy such as the State Strategy for Regional Development of Ukraine; regional development strategies; development strategies of territorial communities.

The documents **for the implementation of the national regional policy** are: Action Plan for the implementation of the National Strategy for Regional Development of Ukraine; action plans for the implementation of regional development strategies; action plans for the implementation of strategies for the development of territorial communities; programs for the economic and social development of the Autonomous Republic of Crimea, regions, districts, cities of Kyiv and Sevastopol, and territorial communities.

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<sup>29</sup> On introducing changes to certain legislative acts of Ukraine concerning principles of the state regional policy and policy of recovery of regions and territories. Law of Ukraine dated July, 9, 2022 No. 2389-IX. <https://zakon.rada.gov.ua/laws/show/2389-20#n7>

<sup>30</sup> On amending the Law of Ukraine “On Regulation of City-Planning Activities” concerning regulation of procedure for the recovery of buildings and facilities damaged due to hostilities. Draft Law No. 8072, registered on September, 23, 2022. <https://itd.rada.gov.ua/billInfo/Bills/Card/40520>

<sup>31</sup> On amending some laws of Ukraine in relation to improvement of powers of the local self-governance bodies and their officials in the period of martial law. Draft law No.8056 registered 19.09.2022. <https://itd.rada.gov.ua/billInfo/Bills/Card/40503>

<sup>32</sup> On amending the Budget Code of Ukraine and other laws of Ukraine concerning the creation and principles of functioning for the fund of recovery and stimulation of development of regions and territories. Draft Law No. 8085, registered on 28.09.2022. <https://itd.rada.gov.ua/billInfo/Bills/Card/40546>

Unlike the previous version, the law also distinguishes documents that will determine the **recovery and development of regions and territories** affected by armed aggression against Ukraine. They are: a plan for the recovery and development of regions; plans for the recovery and development of territorial communities.

These documents have different purpose, tasks, content, subjects of approval, etc. (see Appendix 2-2).

Not all tools will be implemented at the same time: the Law sets the conditions for the postponement in the adoption and implementation of certain documents of regions and territorial communities.

An important innovation that should be taken into account by the documents of the state regional policy is the use of **a territory-oriented and security approach** in their development, which provides for the definition of functional types of territories:

1. **recovery areas:** micro-regions, territorial communities, on which territory hostilities took place and/or which were temporarily occupied, and/or whose territories suffered destruction of critical infrastructure, social infrastructure, housing facilities as a result of hostilities, as well as characterized by a sharp deterioration in the level of socio-economic development, and with significant displacement of the population to other regions and/or other countries;
2. **regional growth poles:** micro-regions, territorial communities characterized by significantly better geographical, demographic, and socio-economic indicators of development compared to other similar territories of the region, which growth has a positive effect on adjacent territories, the region and/or the country as a whole;
3. **territories with special conditions for development:** macro-regions, micro-regions, territorial communities, where the level of socio-economic development is low or where there are natural, demographic, international, security or other objective restrictions on the use of the potential of the territory for its growth;
4. **territories of sustainable development:** self-sufficient micro-regions and territorial communities with the existing socio-economic potential of the territories that are capable of balanced development in the economic, social, and environmental areas.

The list of functional types of territories, as well as the requirements and criteria for assigning territories to different functional types, will be determined by the Cabinet of Ministers. Assessment and assignment of territories to functional types will be carried out by a special commission.

In addition to these documents, the legislator operates with other types of documents, such as programs for regional development (investment programs for regional development), regional development programs, and local development programs. Their status and role in the public regional policy is not determined by the legislator, which does not contribute to the logical integrity and interconnection of the entire set of tools for the making and implementation of state policy.

Article 7 of the Law defines the list of public regional policy documents developed for the recovery and development of war-affected regions and territories: (1) a plan for the recovery and development of regions; and (2) plans for the recovery and development of territorial communities. Article 11-3 additionally introduces “regional recovery and development plans”, which, among other things, shall be included in the Regional Recovery and Development Plan to be approved by the Government of Ukraine.

**Presently, questions remain about the content and procedure for developing the Recovery and Development Plan, as well as plans for the recovery and development of territorial communities. Such procedures should be determined by the Cabinet of Ministers, but the government has not adopted them yet.**

Difficulties in determining the system of documents on recovery and development, and their interrelation, are exacerbated by the fact that the Law of Ukraine “On Regulation of Urban Development Activities” (with account for the amendments of May, 12, 2022) introduced a separate type of planning tools. It is a **program for comprehensive recovery of the Oblast, a program for comprehensive recovery of the territory of the territorial community (its part)**. Articles 15-1 and 15-2 contain a detailed list of issues that should be covered by the programs: from the analysis of negative impacts (including hostilities, terror acts, subversive actions, emergencies) to the preliminary financial and economic estimates and proposals for sources of funding for comprehensive recovery measures. In October, 2022, the government approved resolutions detailing the development, conduct of public discussions, and approval of programs for the comprehensive recovery of the Oblast, the territory of the territorial community (its part). These programs are not part of the urban planning documentation; they are not subject to strategic environmental assessment and consideration by the architectural and city-planning council. The challenge on the ground will be to understand the difference between comprehensive recovery programs and recovery and development plans for regions and territorial communities. Another challenge will be about the capacity of regions and territorial communities to simultaneously develop, adopt, and, most importantly, implement such documents.

An important issue is the interaction and consistency of regional public policy documents with the Ukraine Recovery Plan, which content was presented by the Ukrainian side on July, 4, 2022 in Lugano (Switzerland), and the draft materials of the working groups were presented for public discussion in August, 2022.<sup>34</sup>

## 2.2 System of Documents of the State Regional Policy

The table has been compiled on the basis of the Law of Ukraine “On the Principles of State Regional Policy” National Strategy – National Strategy for Regional Development of Ukraine

Strategic planning documents			
	National Strategy for Regional Development of Ukraine	regional Development Strategies	Strategies for the Development of Territorial Communities
period/expiration date	7 years	for the period of validity of the National Strategy	for the period determined by the National Strategy and the regional strategy
approving entity	Cabinet of Ministers of Ukraine	Verkhovna Rada of the ARC, Oblast, Kyiv and Sevastopol city councils	village, township, city councils
entity that develops	The development is provided by the Council of Ministers of the ARC, Oblast State Administrations, Kyiv and Sevastopol city state administrations	Development is provided by RM arc, RSA, Kyiv and Sevastopol MSA	Drafts are developed by the executive bodies of village, township, and city councils

<sup>33</sup> The procedure for developing, conducting public discussion, and approval of programs for the comprehensive recovery of the Oblast, the territory of the territorial community (its part) and for making changes to them. Approved by the Resolution of the Cabinet of Ministers of Ukraine dated October, 14, 2022 No. 1159 // <https://zakon.rada.gov.ua/laws/show/1159-2022-%D0%BF#Text> Procedure for holding public hearings on draft city-planning documentation at the local level. Approved by the Resolution of the Cabinet of Ministers of Ukraine dated May, 25, 2011, No. 555 (as amended by the Resolution of the Cabinet of Ministers of Ukraine dated October, 21, 2022, No. 1196) // <https://zakon.rada.gov.ua/laws/show/1196-2022-%D0%BF#Text>

<sup>34</sup> Ukraine Recovery Plan. Materials of the working groups // <https://www.kmu.gov.ua/diyalnist/nacionalna-rada-z-vidnovlennya-ukrayini-vid-naslidkiv-vijni/robochi-grupi>

development procedure	The procedure for development are established by the Cabinet of Ministers of Ukraine (2015)	The procedure for development is established by the Cabinet of Ministers of Ukraine	Methodological recommendations on the procedure for their development – to be approved by the central executive authority
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#### Documents for the implementation of the National Strategy for Regional Development of Ukraine

	<b>Action plan for the implementation of the National Strategy for Regional Development of Ukraine</b>	<b>action plans for the implementation of regional development strategies</b>	<b>action plans for the implementation of strategies for the development of territorial communities</b>	<b>programs of economic and social development of the Autonomous Republic of Crimea, Oblasts, districts, cities of Kyiv and Sevastopol, and territorial communities</b>
period/expiration date	for 3 years and for the next 4 years of the duration of the National Strategy	for 3 years and for the next 4 years of the duration of the regional strategy	unspecified	unspecified
approving entity	Cabinet of Ministers of Ukraine	Verkhovna Rada of the ARC, Oblast level, Kyiv and Sevastopol city councils	village, township, city councils	unspecified
entity that develops	Central Executive Authority + together with other CEAs	The development is carried out by the ARC CM, RSAs, Kyiv and Sevastopol CSAs. The procedure shall be determined by the CMU.	unspecified	unspecified
development procedure	The procedure for development shall be established by the Cabinet of Ministers of Ukraine	unspecified	unspecified	unspecified

#### Documents for the recovery and development of affected regions and territories

	<b>the Plan for the Recovery and Development of the Regions</b>	<b>plans for the recovery and development of territorial communities</b>
period/expiration date	unspecified	unspecified
approving entity	Cabinet of Ministers of Ukraine	village, township, city councils
entity that develops	CAU together with other central and local executive authorities	village, township, city councils
development procedure	The procedure for development shall be established by the Cabinet of Ministers of Ukraine	The procedure for development shall be established by the Cabinet of Ministers of Ukraine

## Appendix 3.

# Tools Offered by the EU and International Organizations for the Development of Cities

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### 3.1 International Context in the Field of Urban Planning and City Development

There are many developments, international and European processes in the field of urban planning and city development. For instance, the New Leipzig Charter, the Urban Agenda for the EU, the EU Territorial Agenda 2030, the Principles on Urban Policy, the UN New Urban Agenda, etc.

**The New Leipzig Charter**<sup>35</sup>, adopted by EU ministers in November 2020, is the EU's main urban planning strategy aimed at sustainable urban development. The Charter defines the main approaches to strengthening the transformational role of cities in the EU, the basic principles of good urban governance, sustainable urban planning, strengthening their financing and human potential. The Charter builds on other existing political processes in the EU in the field of urban and regional development, such as the EU Urban Agenda. In addition, its implementation is closely linked to the EU Territorial Agenda 2030 and the EU Cohesion Policy<sup>36</sup>.

The **Urban Agenda for the EU**<sup>37</sup> was launched in 2016. Essentially, it is a process set up to organise cooperation between EU Member States, cities, the European Commission and others in order to support the development, viability and innovation of cities in the EU. For the implementation of this project (also called the "multi-level working method"), appropriate action plans are adopted. The thematic focus of the EU Urban Agenda is on 14 areas (platforms), from cultural heritage and safety to housing and air quality.

The peculiarity of the **EU Territorial Agenda 2030**<sup>38</sup> is in that it focuses on all levels of territorial development: cities, regions, countries, and the EU as a whole. It identifies two strategic objectives: a fair Europe and a green Europe, each with six priorities for the development of the EU territory as a whole. For example, three priorities have been identified for the "green Europe" goal:

- better environmental livelihoods, climate-neutral and resilient towns and regions;
- strong and sustainable local economies in a globalized world;
- sustainable digital and physical connectivity of places.

Many international organizations have experience in the field of urban development. Thus, the Organization for Economic Cooperation and Development (OECD) developed the **Principles on Urban Policy**<sup>39</sup> based on the analysis of long-term experience of different countries. The purpose of these principles is to help governments and policymakers and other actors in building smart, sustainable and inclusive cities. In general, the OECD proposes eleven principles of urban policy, including maximizing the

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<sup>35</sup> [https://ec.europa.eu/regional\\_policy/en/information/publications/brochures/2020/new-leipzig-charter-the-transformative-power-of-cities-for-the-common-good](https://ec.europa.eu/regional_policy/en/information/publications/brochures/2020/new-leipzig-charter-the-transformative-power-of-cities-for-the-common-good)

<sup>36</sup> [https://www.bmi.bund.de/SharedDocs/downloads/EN/themen/building-housing/city-housing/implementation-new-leipzig-charta.pdf;jsessionid=06266B0AEC41F44085C32B7B87CE40A0.1\\_cid340?\\_blob=publicationFile&v=3](https://www.bmi.bund.de/SharedDocs/downloads/EN/themen/building-housing/city-housing/implementation-new-leipzig-charta.pdf;jsessionid=06266B0AEC41F44085C32B7B87CE40A0.1_cid340?_blob=publicationFile&v=3)

<sup>37</sup> <https://futurium.ec.europa.eu/en/urban-agenda>

<sup>38</sup> [https://territorialagenda.eu/wp-content/uploads/TA2030\\_summary\\_jun2021\\_en.pdf](https://territorialagenda.eu/wp-content/uploads/TA2030_summary_jun2021_en.pdf)

<sup>39</sup> <https://www.oecd.org/cfe/Brochure-OECD-Principles-Urban-Policy.pdf>

potential of cities of all sizes to enhance national and global well-being, supporting interdependencies and cooperation between urban and rural areas, etc.

The **UN New Urban Agenda is also one of the international processes aimed at defining the premises, principles, and priorities of sustainable urban development and urbanization in general.**<sup>40</sup> The program was adopted at the United Nations Conference on Housing and Sustainable Urban Development (Habitat III), held from 17 to 20 October, 2016, in Quito, attended by heads of state, ministers, subnational and local governments, parliamentarians, representatives of civil society, indigenous peoples and local communities, the private sector, professionals and practitioners, and scientists. Subsequently, in December, 2016, it was approved by the UN General Assembly.

In particular, the UN New Urban Agenda identifies the following priorities for urban transformation:

- Sustainable urban development for social inclusion and ending poverty;
- Sustainable and societal prosperity in cities and opportunities for all;
- Sustainable and resilient urban development.

### 3.2 EU Green Tools for Cities

In December, 2019, the European Commission adopted the European Green Deal (EGD). Its main goal is sustainable green transition of Europe to a climate-neutral continent by 2050. In addition to the development and implementation of strategic documents and legislation in such areas as climate, energy, industrial strategy for circular economy, sustainable and smart mobility, green agricultural policy, biodiversity conservation, zero pollution, and finance, the EU offers a number of tools for cities. They can be divided into the following four categories: strategizing tools; networking tools; tools for citizen engagement; financial instruments.

#### (a) Strategizing Tools

##### Urban Strategies for the Transition to Renewables

The main task of the EGD in the field of energy is the further decarbonization of the energy system. Renewables will play and already play an important role in the transition to clean energy. This process is actively developing in the world. More than 100 cities around the world receive more than 70 percent of their electricity from wind, solar, and other renewable sources<sup>41</sup>. The future reconstruction of Ukrainian cities should be climate neutral<sup>42</sup>.

“Model scenario estimates of the transition of Zhytomyr to 100% renewable energy sources by 2050”<sup>43</sup> can be considered as an example of an applied strategy for the transition to 100% RES. The authors hoped that other cities of Ukraine would be able to develop such a scenario, borrowing the methodology, using it as a basis and adding their own data for calculations.

<sup>40</sup> <https://habitat3.org/wp-content/uploads/NUA-Ukrainian.pdf>

<sup>41</sup> [More Than 100 Cities Worldwide Now Powered Primarily by Renewable Energy](https://insideclimatenews.org/news/27022018/renewable-energy-cities-clean-power-technology-cdp-report-global-warming-solutions/)

<sup>42</sup> [The Green Dream to Rebuild a Sustainable Ukraine from the Rubble of War](https://www.politico.com/news/magazine/2022/09/11/ukraine-russia-sustainability-00054910). <https://www.politico.com/news/magazine/2022/09/11/ukraine-russia-sustainability-00054910>

<sup>43</sup> “Model scenario estimates of the transition of Zhytomyr to 100% renewable energy sources by 2050” <https://zt-rada.gov.ua/files/upload/sitefiles/doc1619525338.pdf>

The infrastructure solutions for the transition of cities to renewables include the following, among others:

- Pilot/demo projects on the transition to RES in individual municipal institutions, such as in schools, hospitals, or kindergartens.
- Development of “smart” power grids and implementation of electricity storage systems.
- Solar and wind power plants and thermal stations for biofuels.
- Replacement of lighting with LED.
- “Zero Emissions Houses.”
- Electrification of transport, primarily public transport.

### **Circular Economy Action Plans**

In March, 2020, the European Commission adopted a new Circular Economy Action Plan (CEAP)<sup>44</sup>. The new action plan announces initiatives throughout the product lifecycle. It focuses on how products are designed, promotes circular economy processes, encourages sustainable consumption and tries to prevent waste generation and conserve used resources in the EU economy for as long as possible.

By 2050, two-thirds of the world’s population will live in cities. Under the current economy, cities consume more than 75% of natural resources. They produce more than 50% of the world’s waste and emit 60 to 80% of greenhouse gas emissions. The circular economy in Europe has the potential to increase EU GDP by an additional 0.5% by 2030<sup>45</sup> and create about 700,000 jobs, while reducing the environmental footprint and greenhouse gas emissions.

A fully-fledged circular economy requires rethinking the ways in which goods and services are produced and used, while exploring new ways to ensure long-term prosperity for all. As major drivers of economic development, cities can move forward with a circular economy program to unlock economic, environmental, and social benefits.

The European Union developed initiatives and resources on how best to start a circular transition and ensure a transition to a circular economy in cities: the Circle Cities Programme, the *Circular Cities and Regions Initiative*, the *Circular Cities Declaration*, the *Circular Europe Network*, etc.<sup>46</sup>

### **The New European Bauhaus**

The new European Bauhaus<sup>47</sup> is the “heart and soul of the EGD” and an innovative tool for involving EU citizens in the implementation of the EGD. It was launched at the end of 2020. It is a platform for the implementation of EGD ideas on buildings and structures for residential and public purposes through a combination of:

- Inclusive and accessible space for people of different cultures, educational backgrounds, and opportunities, as well as changing the rules and conditions for the development of urban spaces, their constant effective monitoring and real responsibility for violation of the requirements for the renovation of existing buildings and structures;
- sustainable solutions in renovation and construction: the use of materials that are produced through recycling or without CO2 emissions, which do not deplete but replenish natural resources and protect biodiversity;

<sup>44</sup> [https://environment.ec.europa.eu/strategy/circular-economy-action-plan\\_en](https://environment.ec.europa.eu/strategy/circular-economy-action-plan_en)

<sup>45</sup> <https://eurocities.eu/latest/circular-economy-action-plan/>

<sup>46</sup> <https://www.circularcityfundingguide.eu/circular-city-initiatives-and-resources/>

<sup>47</sup> <https://www.rac.org.ua/uploads/content/616/files/guidecitieseuropeanbauhaus2021ua.pdf>

- changing the approach to renovation and construction through enrichment with new sustainable experience inspired by creativity, art, and culture;
- solving social, economic, and environmental problems related to the construction or renovation of buildings and structures, the use of materials and energy;
- building a participatory and inclusive process of creation and public acceptance of a new aesthetically attractive and energy-efficient architectural and construction style of the New European Bauhaus based on circular economy and sustainable construction.<sup>48</sup>

In October, 2022, the European Urban Initiative (EUI) announced a competition to allocate €50 million to support urban innovation and the capacity of cities to build sustainable urban development based on the values of the new European Bauhaus. 60 European cities have joined CrAFt, a Horizon Europe project inspired by the New European Bauhaus, which brings cities, citizens, politicians, artists, and academia together to shape the transition to climate neutrality by 2030. CrAFt cities that will test transformation models will receive implementation support, and will set an example for other cities in Europe.

## (b) Networking Tools

### Covenant of Mayors

The EU Covenant of Mayors on Climate and Energy brings together thousands of local authorities who have voluntarily committed themselves to implementing the EU's climate and energy targets. The initiative was launched in 2008 in Europe to bring together local authorities who have voluntarily committed themselves to achieving and exceeding the EU's climate and energy targets, and now unites more than 9,000 local and regional authorities in 57 countries.

Ukrainian cities began to join the European Covenant of Mayors movement in 2008. Cities committed to "20-20-20", that is, by 2020 to achieve a 20% reduction in energy consumption and emissions, and increase energy generation from renewables by 20%. The teams developed Sustainable Energy Action Plans (SEAPs). At this stage, 277 cities in Ukraine joined the Covenant of Mayors.

Since 2015, the Covenant signatory cities have been submitting their Sustainable Energy and Climate Action Plans ("SEAPs") that outline the actions and commitments of a place to reduce CO<sub>2</sub> emissions by at least 30% by 2030, compared to emissions levels from the benchmark year. From July, 1, 2022, the target shall be 35% increase by 2030, and to have the community's vision for achieving climate neutrality by 2050. Every 2 years, a report on the implementation of the Plan shall be submitted for evaluation. Cities are also exploring their own vulnerability to climate change and create their own adaptation projects.

### Green Cities Platform

The *Green City Accord*<sup>49</sup> is a movement of European mayors committed to making cities cleaner and healthier. It aims to improve the quality of life for all European citizens and accelerate the implementation of relevant EU environmental legislation. By signing the Accord, cities commit to paying attention to five areas of environmental management: air, water, nature and biodiversity, circular economy, and waste and noise pollution<sup>50</sup>.

<sup>48</sup> From words to action: The New European Bauhaus is an energy-efficient aesthetics to achieve the goals of the European Green Deal. A guide for cities. Edited by Svitlana Romanko. — Resource and Analytical Center "Society and Environment" (2021).

<sup>49</sup> [https://environment.ec.europa.eu/topics/urban-environment/green-city-accord\\_en](https://environment.ec.europa.eu/topics/urban-environment/green-city-accord_en)

<sup>50</sup> From words to action: How the Greening Platform helps achieve the objectives of the European Green Deal. A guide for cities. Edited by Svitlana Romanko. — Resource and Analytical Center "Society and Environment" (2021).

The Green Cities Accord is open to any city in the European Union with a population of over 20,000. In total, 73 cities have already joined the Accord, and pledged to take immediate action on the following areas:

- to significantly improve urban air quality, to move further in complying with the WHO Air Quality Recommendations, and stop breaking the EU air quality standards as soon as possible.
- to make progress in improving the quality of water bodies and water use efficiency.
- to conserve and enhance urban biodiversity, including by increasing the volume and quality of green spaces in cities, and by stopping the loss of urban ecosystems and restoring them.
- Ensure the transition to a circular economy through optimized management of municipal waste, a significant reduction in waste generation and disposal, as well as reuse, repair and recycling.
- Significant reduction in noise pollution, approaching the levels recommended by WHO.

### **(c) Citizen Engagement Tools**

#### **The European Climate Pact**

The European Climate Pact<sup>51</sup> is a communication framework document of the European Commission and a long-term initiative of the same name, launched in December, 2020.

The European Climate Pact brings people together to build a more sustainable Europe for all. Citizens, organizations, businesses, and cities can join the Pact by committing to taking real action. For example, the commitment to fly less or transfer your money to a bank that does not invest in fossil fuels.

Businesses, organisations, and cities can make one of two types of commitments: Pathway, which represents a series of different climate-friendly action, or the more ambitious North Star, launched by the European Commission, which involves significant and measurable actions to reduce greenhouse gas emissions in such sectors as decarbonisation of buildings and workspaces; business travel; IT infrastructure and needs.

Buildings and workplaces produced 43% of the European Commission's emissions in 2019. As a result, the Commission developed a new real estate policy for its buildings in Brussels and other cities, which will reduce emissions by 30% between 2019 and 2030. Business trips produced 28% of the Commission's emissions in 2019, half of which can be reduced by 2024 through rational business travel planning and the use of more environmentally friendly modes of transport, such as a 100% rolling stock with zero emissions by 2027. New IT instrument will be tracking emissions related to travel to support choice of more environmental travel and stay.

Citizens can wipe and reduce their carbon footprint using the Count Us In platform. Currently, there are 3,093,937 people who joined. More than 235 organisations have already committed to everything, from transport and energy to water and waste.

The Pact aims to become a vibrant space for information exchange, debate and action on the climate crisis, and to offer support for the growth and consolidation of the European climate movement<sup>52</sup>.

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<sup>51</sup> [https://climate.ec.europa.eu/eu-action/european-green-deal/european-climate-pact\\_en](https://climate.ec.europa.eu/eu-action/european-green-deal/european-climate-pact_en)

<sup>52</sup> From words to action: How the European Climate Pact unites society to achieve Europe's climate neutrality by 2050. A guide for cities. Edited by Svitlana Romanko. — Resource and Analytical Center "Society and Environment" (2021).

## (d) Financial Instruments

### Horizon Europe

Horizon Europe<sup>53</sup> is the EU key programme for financing research and innovation, with a budget of €95.5 billion. It combats climate change helping to achieve the UN Sustainable Development Goals and boosting the EU competitiveness and growth.

The programme promotes cooperation and strengthens the impact of research and innovation in the design, support and delivery of EU policies, while addressing global challenges, creating jobs, fully drawing on the EU talent pool, stimulating economic growth, promoting industrial competitiveness and optimizing investment impact in the European Research Area.

Legal entities from the EU and associated countries can participate in this program.

New elements in the programme:

- **European Innovation Council:** supporting innovation with a potential breakthrough that could be too risky for private investors.
- **Missions:** A set of activities to achieve bold, inspiring, and measurable goals over a set period of time. Horizon Europe has five main activity areas: the Mission on Adaptation to Climate Change; the Climate-Neutral and Smart Cities Mission; the Cancer Mission; the Soil Deal for Europe Mission; and the “Restore our Oceans and Waters” Mission.
- **Open Science Policy:** Mandatory open access to publications and open science principles are applied throughout the program.
- **A new approach to partnership:** focused and more ambitious partnerships with industries to support of EU policy objectives.

As part of the Horizon programme, the EU has launched a mission “100 Climate-Neutral and Smart Cities by 2030”<sup>54</sup>. The mission aims to create 100 climate-neutral and smart European cities by 2030 and to ensure that these cities act as centres of experimentation and innovation for all European cities to follow suit by 2050.

### LIFE Programme

The LIFE Programme<sup>55</sup> is the EU instrument for financing action on environment and climate change. It contributes to the achievement of these priorities through four sub-programmes:

- accelerating and integrating the implementation of EU policy objectives for ending the loss of habitats and wildlife species, and returning biodiversity in all sectors;
- supporting the transition to a circular economy, protecting and improving the quality of the EU natural resources, including air, soil, and water;
- supporting the implementation of the 2030 Climate and Energy Framework, the EU climate neutrality target 2050, and the new EU Climate Change Adaptation Strategy;

<sup>53</sup> [https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe\\_en](https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en)

<sup>54</sup> <https://netzerocities.eu/>

<sup>55</sup> [https://single-market-economy.ec.europa.eu/sectors/tourism/funding-guide/life-programme\\_en](https://single-market-economy.ec.europa.eu/sectors/tourism/funding-guide/life-programme_en)

- capacity building, investment promotion, and support for policies implementing energy efficiency and small-scale renewables.

LIFE includes two activity areas (environment and climate action) and four sub-programmes: (1) Environment: nature and biodiversity; circular economy and quality of life; (2) Climate action: climate change mitigation and adaptation; transition to clean energy.

### **The Instrument for Pre-Accession Assistance (IPA)**

The overall objective of the IPA III Instrument (2021-2027)<sup>56</sup> is to support beneficiaries in adopting and implementing the political, institutional, legal, administrative, social, and economic reforms necessary for these beneficiaries to conform to the EU values, and to progressively align with Union rules, standards, policies, and practices in view of EU membership, thereby contributing to their stability, security, and prosperity.

The current beneficiaries of this instrument are Albania, Bosnia and Herzegovina, the Republic of Northern Macedonia, Kosovo, Montenegro, Serbia, and Turkey.

IPA III provides pre-accession assistance and investments in the following areas:

- Rule of law, fundamental rights and democracy;
- Good governance, alignment with EU acquis, good neighbourly relations and strategic communication;
- Green agenda and sustainable connectivity;
- Competitiveness and inclusive growth;
- Territorial and cross-border cooperation.

### **Examples of the introduction of EGD tools for European cities that are already working<sup>57</sup>**

The Italian city of **Bologna**, inspired by the Partnership for Sustainable Land Use, began revising their city Master Plan back in 2018. The new plan embraces the principles of a circular economy while promoting soil restoration and reducing urban sprawl. Occupying the land, the amount of land used for urban development is now the main benchmark for measuring new urban development in the city. The new planning structure also facilitated the restoration and regeneration of unused areas and old buildings.

The Dutch city of **Harlem** is the coordinator of the Partnership for Innovative and Responsible Public Procurement. The city established local cooperation centers that focus on creating sustainable procurement strategies.

Slovenia's second largest city, **Maribor**, developed a way to select effective urban interventions that take into account economic, environmental, and social needs. The city began by developing a circular economy strategy, an initiative that received funding from the Greencycle project.

Among other activities, Maribor is implementing a project called Urban Soil 4 Food. Its objective is to reduce the amount of biological and building waste that enters the landfill, sending it to the production of soil for gardens, green spaces, and construction sites.

<sup>56</sup> [https://neighbourhood-enlargement.ec.europa.eu/enlargement-policy/overview-instrument-pre-accession-assistance\\_en](https://neighbourhood-enlargement.ec.europa.eu/enlargement-policy/overview-instrument-pre-accession-assistance_en)

<sup>57</sup> [https://ec.europa.eu/regional\\_policy/en/newsroom/panorama/2021/09/22-09-2021-europe-s-cities-achieve-success-using-green-approaches](https://ec.europa.eu/regional_policy/en/newsroom/panorama/2021/09/22-09-2021-europe-s-cities-achieve-success-using-green-approaches)

Taming the urban jungle. The city of **Prato** in Italy is implementing a number of initiatives to increase sustainability. For example, the Piu' Prato project helps to reconstruct the urban area of Macrolotto Zero to make it more liveable and economically active. Project activities include the return of abandoned buildings into service, the construction of green spaces, and the promotion of sustainable mobility. Meanwhile, the Prato Urban Jungle project aims to restore nature in certain areas by developing green spaces.

The capital of Norway, **Oslo**, is the coordinator of the Partnership for a Circular Economy. One of the partnership's key achievements is the development of 29 target indicators to measure the city's progress in a circular economy model. The city developed a number of initiatives to reduce waste. The city established nine mini-recycling stations to make it easier for residents to dispose of a small amount of bulky and hazardous waste, without the need to use your car.

**Torres Vedras** (Portugal) has a long history of environmental achievements, including winning the European Green Leaf Award in 2015. Now part of the Green City Accord community, the city aims to cement its status as an environmental pioneer by developing further innovative actions. The municipality is developing the Torres Vedras Going Carbon Neutral project after the approved application for participation in the EU CF, the EU City Facility initiative.