

# Pragmatically Integrating Sustainability Into the Reconstruction of Ukraine

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## Introduction

According to the latest estimates, direct damage to Ukraine in the 2 years since Russia's full-scale invasion has reached USD 155 billion, (Kyiv School of Economics, 2024) with economic losses amounting to USD 499 billion (World Bank, 2024). Considering an ambitious 10-year plan by the Ukrainian government and the international community, it will cost over USD 486 billion to fund reconstruction efforts (World Bank, 2024). Although devastating, this juncture can be a watershed moment for Ukrainian society to “build back better.”

Ukraine aims to capitalize upon its reconstruction to transform its economy and society to become climate resilient and inclusive. However, sustainable efforts may not seem a priority to many in the context of the ongoing war. With so much unpredictability, added costs, and long payback periods, sustainable measures may not seem feasible.

Nevertheless, this does not have to be the case. Learning from prior post-disaster recoveries, planning at the European Union (EU) and national levels can synchronize to effectively allocate resources that maximize the economic and sustainable impacts of reconstruction. This brief particularly investigates the pragmatic implementation of energy-efficiency measures in residential buildings—a tangible topic ready to be implemented during and after the war.

## Examples of European Reconstruction After Conflicts and Disasters

Although there is no example of a sustainable post-war reconstruction, two European attempts provide respectively applicable lessons.

First, it is important to look at the post-war reconstruction of **Bosnia and Herzegovina** to understand how a lack of local ownership due to international technocracy and corruption resulted in inefficient planning. After the war, the international community and Bosnian



elites developed the Dayton Agreement<sup>1</sup> and the Stability Pact for South-Eastern Europe<sup>2</sup> as national reconstruction agendas, along with the Office of the High Representative to implement them. However, input from local experts, institutions, and citizens was excluded from both levels of coordination (Bankwatch Network, 2023). In turn, funds were handled by cantons and municipalities without effective coordination and oversight by donors and local programs. This structure resulted in an inefficient flow of aid that failed to link economic reconstruction with social necessities. The lack of local expertise, as well as institutional and citizen involvement, led to redundancies and created room for rampant corruption. As a result, in the residential sector, uninhabited, homogeneous buildings were built that failed to conserve cultural heritage or stimulate economic growth (Al-Bayati, 2022). Most notably, in the capital city of Sarajevo, ad hoc offices and houses were built without accompanying infrastructure, such as schools and hospitals.

**Croatia's** experience with two earthquakes in 2020 (EUR 17 billion in damages) provides an example of a joint EU and national-level sustainable reconstruction coordination. However, bottlenecks in planning and implementation have led to delayed progress. To gain funding through the EU's holistic post-COVID reconstruction program, NextGenerationEU,<sup>3</sup> Croatia submitted a National Resilience and Recovery Plan, requesting EUR 10 billion (the initial request was for EUR 6.4 billion) from the program's financial component, the Resilience and Recovery Facility (RRF).<sup>4</sup> Of this total allocation, 11% of these funds is devoted to energy renovations in buildings damaged in the earthquakes (European Parliamentary Research Service, 2024).

Having reached the 2024 halfway point for the NextGenerationEU program, Croatia has yet to make significant progress in its renovations. Internal issues have caused implementation delays, as evidenced by the removal of relevant ministers due to slow progress (bne IntelliNews, 2023; China-CEE Ine IntelliNews, 2023; China-CEE Institute, 2022). As a result, Croatia has only achieved three steps associated with renovation within its national plan, none of which directly addresses energy efficiency in residential buildings (European Commission, 2024b). Considering how more than half of the allocated grants have been disbursed, such a lack of progress is concerning, especially considering that four times more grants have been used than loans despite their roughly equal split within the plan (European Commission, 2024a). This is problematic, as grants provide non-repayable support and should be used sparingly when low concessional loans provide a viable alternative. Such liberal usage indicates that grants are being used inefficiently.

Notably, this use of grants is not exclusive to Croatia, with similar issues present throughout all member states. According to the RRF's midterm evaluation, grants have been disbursed in a 2:1 ratio compared to loans (Corti et al., 2023). Similar to Croatia, such a lopsided use has yielded little progress, resulting in the completion of only 10% of the planned and implemented objectives devoted to the green transition despite their approaching 2026

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<sup>1</sup> See: <https://www.osce.org/files/f/documents/e/0/126173.pdf>

<sup>2</sup> See: [https://neighbourhood-enlargement.ec.europa.eu/enlargement-policy/glossary/stability-pact-south-eastern-europe\\_en](https://neighbourhood-enlargement.ec.europa.eu/enlargement-policy/glossary/stability-pact-south-eastern-europe_en)

<sup>3</sup> See: [https://next-generation-eu.europa.eu/index\\_en](https://next-generation-eu.europa.eu/index_en)

<sup>4</sup> See: [https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility\\_en](https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility_en)



deadline. This trend has been especially prevalent in Eastern and Central European countries (Corti et al., 2023). Due to administrative issues coupled with external factors such as supply chain shortages, inflation, and a short investment horizon, green transition projects have been the first to be delayed, cancelled, or rushed. Most strikingly, in Bulgaria, 80% of the total RRF objective reductions relate to energy, climate, and biodiversity projects. This has translated into the implementation of only 2% of planned green measures in the country.

## Brief Overview of the Governance and Sustainability of the Ukraine Plan and the Ukraine Facility

Recently, the EU approved the regulation of the EUR 50 billion Ukraine Facility to finance the reconstruction of Ukraine.<sup>5</sup> It operates similarly to the EU's RRF, offering a mix of grants and loans disbursed based on completing a national plan called the Ukraine Plan (Government of Ukraine, 2024). It seemingly safeguards against many of the Bosnian pitfalls, providing a comprehensive medium-term strategy that outlines the structure of multi-level and interministerial governance, implementation responsibilities, monitoring and evaluation, and the associated audits. Further, collaboration between the Ukrainian government, civil society stakeholders, and the EU in its design serves to legitimize its transparent nature. In part, this is ensured through a 20% designation of funds toward municipalities.

Regarding the environment and climate, another 20% of non-exclusive funds have been earmarked to support the green transition based on the creation of tailored intervention fields from the EU taxonomy (European Commission, n.d.-a). Additionally, it mandates compliance with the “do no significant harm” principle to the greatest extent possible given the context of the war (European Commission, 2021), aiming not to finance projects that harm one of the six environmental objectives listed within the EU taxonomy (European Commission, n.d.-b).

However, since the subsections of the sectoral plans upon which disbursement is dependent are not yet fleshed out, there is a real possibility that the Ukraine Facility will come to face the financing-type issues pervasive within the RRF. Below, we discuss how the strategic use of funds can maximize environmental and economic welfare, particularly in the residential sector, which has been most damaged by the war.

## Applied Strategy: Sustainable reconstruction of the residential sector through energy efficiency measures

One of the most prevalent issues within Ukraine's reconstruction is the destruction of the residential sector. Over 250,000 buildings have been damaged since the start of the invasion (Kyiv School of Economics, 2024). Further, Ukraine's housing infrastructure is very dated, with poor thermal insulation and high energy consumption that exceeds the European average by 30% to 50% (Buildings Performance Institute Europe, 2024).

The Ukraine Plan emphasizes the need to enhance the energy efficiency of buildings and set minimum standards, aiming to introduce a nearly-zero energy buildings (nZEB) standard by

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<sup>5</sup> See: [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L\\_202400792](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202400792)



Quarter 2 of 2024 (European Commission, n.d.-c). While building back more efficiently does cost more upfront, returning to baseline efficiency directly opposes Ukrainian and EU climate goals, leading to higher costs for future renovations and energy prices.

That being said, a recent study conducted by Berlin Economics assesses the cost-benefit analysis of the reconstruction of the City of Bucha, given current conditions (Bilek et al., 2024). It is projected to cost EUR 106 million to repair all damaged buildings to their prior efficiency, EUR 214 million to achieve the minimum Ukrainian standards (class C energy efficiency for new buildings and class D to reconstruct damaged buildings), and EUR 318 million to achieve nZEB for all buildings.

Regarding investment costs per building type, it was discovered that the largest multi-story buildings are the most cost-efficient per square metre (Bilek et al., 2024). The price per square metre for an nZEB 9-storey building costs only a fourth of the price for minimum standards in single-family homes. However, the issue lies within payback periods, which cannot be rationalized on a per-unit basis. In scenarios where future energy prices are high, savings will be cost-covering, allowing for the costs of nZEB buildings to be paid back in under 20 years. But, in scenarios where energy prices are low, the payback period could reach up to 34 years. For the minimum requirements, the period is 15 years in case of cost-covering prices and 27 years in case of low prices, respectively. Notably, for the minimum standards scenario, certain energy-efficiency improvements for multi-storey buildings with district heating can pay in under 14 years and provide huge savings at a comparatively low price. This allows for some immediate certainty for investors in the medium to long terms.

Relating to public financing, increasing the grant shares on projects will prove crucial in building investor confidence and attracting energy service companies by reducing payback periods. To reach payback periods of 12 to 13 years, grant shares would have to make up about two thirds of the loan, but if energy savings are cost-covering, this could drop down to as low as a third to a fifth.

## **Conclusion: Policy recommendations and future considerations**

Most of the Bosnian pitfalls have been addressed within the Ukraine Plan—but within its implementation, interministerial and intergovernmental communication must be maintained to enhance synergies and maintain accountability.

It is important to develop a funding strategy framework to tie together all of these points in the context of the Ukraine Plan and Facility.

Regarding the residential sector, grant-backed loans should be used on the most cost-effective multi-family homes to maximize the non-repayable impact. For single-family homes connected to district heating, a mix of minimum and nZEB standards should be applied, depending on the pricing appetites of households. Given the consistent payback horizons, these could reasonably be funded through low concessional loans with public guarantees. Relative to the RRF, such a targeted strategy should safeguard against the inefficient use of grants on minimal progress relating to sustainability.





Outside of the residential sector, a similar framework can be applied. For example, in the manufacturing and renewable energy space, grants should not be used on financially sound corporations that could otherwise afford low-concessional loans. Instead, grants and public guarantees should be used to support local efforts to transform electricity grids and infrastructure that generate lower costs for consumers and producers alike.

Lastly, this recommendation should not be seen as holistic. It should provide a frame of reference for developing much more nuanced strategies. As the war ensues, circumstances and priorities are bound to change—particularly, the use of loans becoming riskier. As such, strategies must account for the relevant cities' geopolitical risks and potential loan defaults. Nevertheless, conscious differentiation between the funding sources should allow for the practical implementation of sustainable efforts vis-à-vis minimum standards and industrial projects.



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