

SCENARIOS OF ECONOMIC RECOVERY OF UKRAINE: BUILD BACK BETTER VS BUSINESS-AS-USUAL

СЦЕНАРІЙ ВІДНОВЛЕННЯ ЕКОНОМІКИ УКРАЇНИ: BUILD BACK BETTER VS BUSINESS-AS-USUAL

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***Abstract.** Ukraine had ambitious plans for developing renewable generation, decarbonising the economy and combating climate change even before the start of a full-scale war. To implement the technological transition, economic development and European accession, the post-war recovery of Ukraine should be based on the concept of "building back better" and the principles of green recovery. Although the full-scale reconstruction of Ukraine can only start in the post-war period, fast recovery as a response to the emergency has been going on since nearly the first days of the full-scale invasion.*

The government is already planning the post-war recovery of Ukraine and taking measures to restore infrastructure such as energy objects or buildings quickly. Therefore, it is essential to understand the potential impact of recovery processes on the environment and climate. It goes without saying that defence is a number one priority during war. The work concludes that, sustainability, impacts on climate and environment are important considerations for long-term post-war reconstruction. The author argues that it is due to the following factors: European integration aspirations of Ukraine.

It is noted that Ukraine must implement European environmental and climate legislation to join the EU. It is advisable to take it into account during recovery and to ensure reconstruction processes are in line with it; the green component should be duly incorporated in state programs, reforms and projects. This will facilitate access to international financing, which is also relevant for business; incentives should be in place to develop green technologies and innovations to reduce the carbon intensity of existing production and attract investments in new industries. Those could be the production of equipment for RES or components of the electric vehicles. The author stated, that the green stimulus will help make Ukraine's post-war economy more modern, competitive, and integrated into EU value chains.

***Keywords:** concept of "building back better", European environmental and climate legislation, recovering of Ukraine, green recovery.*

***Анотація.** Україна мала амбітні плани щодо розвитку відновлюваної генерації, декарбонізації економіки та боротьби зі зміною клімату ще до початку повномасштабної війни. Для здійснення технологічного переходу, економічного розвитку та приєднання до Європи післявоєнне відновлення України має ґрунтуватися на концепції «відбудувати краще» та принципах зеленого відновлення. Хоча повномасштабна відбудова України може розпочатися лише у післявоєнний період, швидке відновлення як відповідь на надзвичайну ситуацію триває майже з перших днів повномасштабного вторгнення.*

Уряд вже планує післявоєнне відновлення України та вживає заходів для швидкого відновлення інфраструктури, наприклад енергетичних об'єктів чи будівель. Тому важливо

розуміти потенційний вплив процесів відновлення на навколишнє середовище та клімат. В роботі зроблено висновок про те, що стійкість, вплив на клімат і навколишнє середовище є важливими міркуваннями для довгострокової післявоєнної реконструкції. Автором аргументовано, що це зумовлено такими чинниками: євроінтеграційними прагненнями України.

Зазначено, що Україна має імплементувати європейське екологічне та кліматичне законодавство, щоб вступити до ЄС. Його доцільно враховувати під час відновлення та забезпечити відповідність процесів реконструкції; зелена складова повинна бути належним чином включена в державні програми, реформи та проекти. Це полегшить доступ до міжнародного фінансування, що також актуально для бізнесу; мають існувати стимули для розвитку екологічно чистих технологій та інновацій, щоб зменшити викиди вуглецю в існуючому виробництві та залучити інвестиції в нові галузі. Це може бути виробництво обладнання для ВДЕ або компонентів електромобілів. Автором зазначено, що зелений стимул допоможе зробити післявоєнну економіку України більш сучасною, конкурентоспроможною та інтегрованою в ланцюжки створення вартості ЄС.

***Ключові слова:** концепція «відбудувати краще», європейське екологічне та кліматичне законодавство, відновлення України, зелене відновлення.*

Introduction. Several months after the full-scale war had started, the government, businesses, the public, experts and international partners of Ukraine started discussing the future post-war recovery of the country. Although the full-scale reconstruction of Ukraine can only start in the post-war period, fast recovery as a response to the emergency has been going on since nearly the first days of the full-scale invasion. As the Ukrainian authorities are working on the recovery of Ukraine, we believe these processes should be considered in terms of their ‘greenness’, sustainability and impact on the climate and the environment. Due to Ukraine's EU accession ambitions, such implications must be regarded during the reconstruction. The future implementation of European environmental and climate legislation in due time necessitates alignment of the reconstruction process with them. Also, developing state programmes, reforms, and projects with an account of the green component will simplify access to international funding, which is also relevant for businesses.

European integration goals and the requirements of creditors and donors to projects are not the only motivations to implement sustainability principles. Potential social, economic, and environmental benefits for Ukrainians from policies and projects leading to a reduction in the impact on climate and environment are indeed an additional motivation for their implementation.

The purpose of the article - to conduct a comparative analysis of two scenarios for the recovery of Ukraine's economy - based on the principle of Build Back Better and based on the principle of Business-as-usual.

Literature review. The following foreign researchers studied the problems and practices of sustainable development: A.A. Leiserowicz, R.W. Kates, T.M. Parris, A. Hughes. Program documents of the Government of Ukraine, the EU, the UN, intergovernmental and non-governmental (public) organizations are devoted to the problems of scenarios for the recovery of the economy of Ukraine.

Main results of the research. As Ukraine has ambitious plans (for instance, according to the updated Nationally Determined Contribution to the Paris Agreement) [United Nations, 2015] not only for the development of green generation but also for decarbonisation of the economy and combat against climate change before the full-scale war, in our opinion, for the sake of technological transition, economic development and European integration, post-war recovery of Ukraine must be based on the build back better concept and principles of green recovery.

Different external and internal stakeholders use green recovery or the Build Back Better concept more and more often to characterise the recovery process of the national economy. Yet, neither Ukraine nor the world has a generally accepted definition of the concept or a uniform idea of its components and principles. However, if the Government of Ukraine declares that recovery will be green, understanding of the recovery concept in the country should be approved for structured planning of the recovery process, setting of sectoral targets and tasks, development of recovery

programs and the clear project assessment and selection methodology consistent with the concept. Firstly, this need is caused by the fact that sustainable recovery and reconstruction will make it easier to receive green funding from international financial partners. Secondly, it will prevent greenwashing practices when unsustainable projects are claimed to be green.

The authors of the study "Green recovery of Ukraine: guiding principles and tools for decision-makers", which included the author of this paper, key bottlenecks were defined, i.e. problems that stand in the way of green recovery of Ukraine, to propose relevant guidance and instruments for the stakeholders later. Among the bottlenecks of green recovery are the following:



Figure 1. Bottlenecks of the green recovery in Ukraine

Source: made by author

1. Low level of green mainstreaming in the recovery policy framework

There is a difference in understanding what a Build Back Better approach to planning and implementing the recovery looks like, both in general and regarding Ukraine's recovery during and after the war. This relates to international partners of Ukraine, its government, the non-profit and expert sectors, etc. Such divergence of views may result in difficulties for the Ukrainian government and businesses in properly designing and implementing the recovery and obtaining international finance.

Ukrainian stakeholders lack internal financial resources and instruments for recovery and high loan interest rates. This is exacerbated by the lack of a complete understanding of the requirements of international financial institutions and development financial institutions to clients regarding their impact on climate and the environment. At the same time, IFIs and DFIs have resources to finance recovery in Ukraine, usually provided at low-interest rates. The level of awareness of and preparedness for these requirements is insufficient both in the government and in the private sector. This bottleneck can be broken down into the following ones:

- the difference in approaches among governments, organisations, experts and NGOs;
- the difference in regulation and green KPIs among international stakeholders;
- lack of a complete understanding of the green requirements of IFIs/DFIs both in the government and the private sector.

2. Fast recovery actions vs post-war reconstruction priorities

While rebuilding fully in line with the Paris Agreement and best European/international standards may not be feasible before the end of the war, it is essential to consider these aspects now. Infrastructure being rebuilt will often be used for decades and may create carbon and environmentally damaging lock-ins. Regulatory and institutional architecture in Ukraine that could ensure green and sustainable recovery is weak. Existing legislation, regulation, and financial incentives are insufficient to mandate a recovery process that will align with the trajectory needed to achieve net zero or prevent

pollution levels from increasing compared to the pre-war levels. This bottleneck can be broken down into the following ones:

- The governmental communication doesn't provide a vision nor encourages stakeholders' actions;
- Green recovery governance and coordination challenges;
- Capacity to combine the short-term tactical needs and strategic EU integration priorities.

3. *Ukrainian business is in survival mode, not developing*

Ukrainian companies, primarily operating in survival mode, pay little attention to mitigating their environmental and climatic impact. This lack of motivation to adopt sustainable practices or innovate in technologies and processes is partly due to the absence of clear governmental directives and signals from the international community.

The implications of such corporate short-sightedness extend beyond immediate survival concerns: a projected decline in future competitiveness, a lack of preparedness for the more stringent regulatory environment anticipated with Ukraine's European integration, and significant detriments to environmental integrity and public health. These outcomes emphasise the need for a strategic developmental approach, incorporating regulatory frameworks and incentives to align business operations with environmental and climate imperatives. This bottleneck can be broken down into the following ones:

- Lack of resources for effective climate actions;
- Low awareness of the recovery plans and EU accession steps.

The government is already planning the post-war recovery of Ukraine and taking measures to restore infrastructure such as energy objects or buildings quickly. Therefore, it is essential to understand the potential impact of recovery processes on the environment and climate. It goes without saying that defence is a number one priority during war. However, sustainability, impacts on climate and environment are important considerations for long-term post-war reconstruction. This is due to the following factors:

- European integration aspirations of Ukraine. Ukraine must implement European environmental and climate legislation to join the EU. It is advisable to take it into account during recovery and to ensure reconstruction processes are in line with it;
- The green component should be duly incorporated in state programs, reforms and projects. This will facilitate access to international financing, which is also relevant for business;
- Incentives should be in place to develop green technologies and innovations to reduce the carbon intensity of existing production and attract investments in new industries. Those could be the production of equipment for RES or components of the electric vehicles. The green stimulus will help make Ukraine's post-war economy more modern, competitive, and integrated into EU value chains.

Terms Build Back Greener and Build Back Sustainably are components of the broader concept of Build Back Better and, therefore, can be considered its principles. Moreover, Build Back Greener is most often used to emphasise the importance of combating climate change by reducing or phasing out fossil fuels – coal, gas or oil. In its turn, Build Back Sustainably is used to consider biodiversity and reduce the use of natural resources and the amount of pollution.

At first, the Build Back Better concept was applied to reconstruction after natural disasters, e.g. in 2006, in relation to the recovery of states from the consequences of the tsunami in the Indian Ocean. Over time, the concept evolved to include a wide range of measures at the entire country's economy level, including support for sustainable infrastructure, energy, medicine, health care, housing, education, and immigration policies. Subsequently, the term began to be applied to the economic recovery after the consequences of the COVID-19 pandemic in the EU and the US. Nowadays, the "Build Back Better" concept is mainly used in the broad context of Ukraine's post-war development, where its green component is important.

Let's consider two scenarios for the recovery of Ukraine's economy.

The first concept is a baseline scenario of fast recovery. Under this scenario, destroyed facilities are reconstructed not with the best available low-carbon technologies but with technologies in a manner in which climate and environmental impact will not materially differ from the pre-destruction period. For instance, it can be a reconstruction of buildings or infrastructure without additional energy efficiency measures, efficient and low-carbon heating systems, and construction materials with a reduced carbon footprint. Modern construction materials or technical construction standards are obviously better than those used thirty or forty years ago. However, it does not guarantee consideration of all the existing trends for nearly zero-emission buildings.

Another example could be a reconstruction of industrial facilities without using the best modern techniques, resulting in low energy and resource efficiency and higher pollution levels than Best Available Techniques (BAT).

There might also be some type of temporary ‘freezing’ of climate change and environmental policy at the pre-war level, which excludes additional activities for the decarbonisation of the economy and adaptation to climate change. For instance, if the carbon price remains at the level of UAH 30 per tonne, the goal to reduce GHG emissions during the review of the Nationally Determined Contribution (NDC) in 2025 will not be set higher, and there will be no progress in bringing the legislation in line with the EU GD etc.

Moreover, compared to the pre-war scenario, the Business-as-Usual scenario can also include easing or not implementing climate policies during war and reconstruction. We can expect emissions to grow at the post-war large-scale reconstruction stage compared to the wartime level and reach the levels in 2021. However, if green recovery technologies are used, Ukraine can reach the set NDC goals by 2030. In this case, post-war emissions will grow but remain within -65% compared to 1990. In the Business-as-Usual scenario, there could be an increase in emissions in Ukraine, over the emission levels existing before the full-scale invasion.

Contrary to the Business-as-Usual scenario, we support the scenario of green recovery of Ukraine as the most reasonable one in terms of the use of resources and synchronisation with the EU accession policies. Instead, to describe the recovery to contribute to the containment of climate change, to influence the environment positively, and Contrary to the Business-as-Usual scenario, we support the scenario of green recovery of Ukraine as the most reasonable one in terms of use of resources and synchronisation with the EU accession policies. Instead, the concept of Building Back Better describes the recovery to contribute to the containment of climate change, to influence the environment positively, and to promote the adoption of more efficient tools to encourage a greener economy and its decarbonisation. Its principles include Build Back Greener and Build Back Sustainably.

Regarding the government strategy and programs of Ukrainian recovery, the general term Build Back Better and its principles of green, sustainable, climate-neutral, and environmentally friendly recovery are used. At this point, among think tanks, NGOs, intergovernmental organisations, foundations, international financial institutions, scientists and experts, there is neither a generally accepted vision of post-war reconstruction, including its green component, nor its metrics and indicators that should help to monitor the progress and provide accountability for the donors' money.

Green recovery refers to the process of overcoming the consequences of various emergencies and/or wars by improving the living conditions of both current and future generations in the affected area. It includes measures on climate change mitigation, combating the depletion of water resources, preserving biodiversity, ensuring clean air, water and soil, and general sustainable and inclusive development of the country. Green recovery will facilitate economic development and create new jobs and favourable living conditions.

Sectors to which green recovery principles can be applied include:

- electricity generation, heating, energy efficiency;
- electrification of industry, transport, and heating sector;
- carbon-intensive industry (metallurgy, fertilisers, cement), development of green technologies (production of RES equipment, CO2 storage);
- electricity transmission networks, incl. smart grids, energy storage;

- agriculture and food systems;
- transport infrastructure;
- banking system;
- design of new buildings;
- use of natural solutions;
- development of competencies and human capital;
- waste management;
- research and innovation;
- digitisation etc.

In general, there is a common communication framework for recovery, a one-voice policy, in the Ukrainian government. Long-term recovery based on the Build Back Better principles is declared, while state officials report on short-term rapid recovery measures. The Prime Minister is the most active in the communication of recovery, constantly referring to it at meetings with Western government officials or representatives of financial organisations on attracting finance. Other government representatives deliver messages that match a specific profile of activity.

We can state that the ministries have slowed down but have not stopped work on "green" sectoral legislation. The development, adoption, and implementation of many strategies, bills, and resolutions had been planned before the start of full-scale hostilities, without reference to the reconstruction process. At the same time, despite the need for a comprehensive vision of the green component of recovery in government documents, green principles and goals are partially present in the National Recovery Plan presented in Lugano in 2022 and the presentation at the recovery conference in London in 2023.

The government is also taking steps to include environmental and climate impact criteria in recovery not only in plans and strategies but also in practice. In particular, the Methodological recommendations on prioritising projects to eliminate the consequences caused by the armed aggression of the Russian Federation against Ukraine provide for environmental and climate change considerations. However, the recommendations need to be refined in terms of a more apparent distinction between environment and climate, as well as the development of further methodologies for calculating consistency with the criteria, e.g. Paris Agreement alignment.

Including environmental and climate impacts in recovery planning should be cross-sectoral, mainstreamed in draft plans, considering the European Green Deal and gradual synchronisation with the EU *acquis*. At present, there is a lack of framework policies and guidelines for climate and environmental impacts consideration in Ukraine.

In post-war recovery, it is necessary to consider Ukraine's obligations under international agreements and treaties, as well as those that are not obligations yet but will inevitably become in time.

A basis of modern climate policy is the Paris Agreement, which aims to keep the global temperature increase within safe limits, namely 1.5-2°C by 2100. Ukraine is among those countries that have pledged to achieve climate neutrality by 2060. Integration with the European Union will necessitate the alignment of the NDC as well as the emissions standards with the EU. Integration with the European Union will require the alignment of the NDC in the future. The goals of the Paris Agreement, under which Ukraine submits the Nationally Determined Contribution, should be the basis of recovery planning for the government and businesses. Reconstruction and new projects need to inbuild new practices considering the adaptation to climate change requirements. This means considering how the project will help the society/economy adapt to the negative consequences and whether there are risks of negative physical impacts from climate change on the project itself. The other category is climate change mitigation, i.e. whether the project contributes to reducing GHG emissions. Hence, the recovery framework should incorporate the risks and best practices to accommodate the adaptation and mitigation goals for each sector's existing and new projects.

In recovery programs and projects, it is recommended to also take into account the UN Sustainable Development Goals, in particular, SDG7 "Affordable and Clean Energy", SDG11 "Sustainable Cities and Communities", SDG13 "Climate Action", SDG14 "Life Below Water",

SDG15 "Life on Land", since Ukraine had targets and indicators for them even before the full-scale war.

Due to Ukraine's integration into the EU, the climate framework of European regulation, particularly the EU Green Deal, should be considered in the process of Ukrainian recovery at the same level as the Paris Agreement and the UN SDGs. The EU Green Deal is cross-sectoral since the EU views the development of all its economic sectors through its lens. This is also reflected in the financial sector in the directions of EU budget spending, policies of European financial institutions and their requirements for clients and projects seeking finance. Harmonisation of the recovery process with EU climate and environmental regulation, development of climate governance architecture and implementation of relevant green indicators should not be perceived as coercion from the EU but as necessary reforms and restructuring of the Ukrainian economy resulting from them.

The Paris Agreement and the Sustainable Development Goals impose certain obligations on the government, subsequently translated into climate policies. This leads to developing policies for transitioning gradually towards net-zero GHG emissions and strengthening climate resilience while using circular economy principles, leaving no one behind. Although there is still no generally accepted system of green indicators for the recovery process at the government level, the systems of such international organisations as the OECD and the IMF can serve as an example.

For the private sector, except for complying with national and international regulations, the development of ESG policies and participation in green and climate initiatives will be relevant. Although such policies are voluntary, meaning that the company is not obliged to do more than what is required by law, they are important to decrease potential reputational risks and to obtain financing from international financial organisations and banks. Quality ESG policies should prepare the company both for physical risks and for regulatory risks of climate change, which are almost inevitable due to the gradual strengthening of legislative requirements in the context of European integration. It is important for a company not just to adopt such policies and tools as a box-ticking exercise but also to implement and use them.

Most of the financial institutions that are the subject of this study finance not only green projects – among them, the European Investment Bank, the European Bank for Reconstruction and Development, the World Bank, Nefco, KfW Group, the British International Investment (BII), the Netherlands development bank FMO, the French development bank AFD. In general, IFIs and DFIs can finance not only green projects and activities. Nevertheless, all clients and projects must meet a certain set of environmental and climate criteria/indicators, which may become more stringent over time.

Already today, all of the analysed IFIs in their climate plans and policies determine that they will not allocate financing for coal, natural gas and oil, including for their extraction, processing, transportation, and combustion (CHPs). Funding of such projects is only possible if they lead to a reduction in GHG emissions, for example, a carbon capture and storage project or phasing out of the coal-fired plants. At the same time, the approaches of IFIs are nuanced: the EIB, for example, tries not to allocate money even for energy and resource efficiency measures that reduce emissions during the extraction or transportation of fossil fuels since this is still an area of extraction. Yet, EIB can make certain exceptions for using gas in a centralised heat supply or converting gas pipelines for the transportation of green gases (such as hydrogen).

Additionally, all IFIs have their own "black" (exclusion) lists, which list those activities that will not receive funding under any circumstances. It usually includes areas that may exacerbate climate change, cause particular harm to the environment, human health. Those could also be unacceptable due to ethical considerations – for example, the production or trade of hazardous chemicals (polychlorinated biphenyls, asbestos, mercury), production or trade in substances that deplete the ozone layer, production of fur or foie gras, unsustainable fishing, etc.

In their policies, IFIs determine which share of financing will go to green, sustainable projects and how it will gradually increase. Thus, by 2025, IFIs plan to spend from 50% (EIB, EBRD) and up to 100% (Nefco) of their budget on sustainable projects. The World Bank somewhat differs in terms of its ambition from European institutions – 35% in the period 2021-2025, while 50% of the funding

of the International Bank for Reconstruction and Development and International Development Association (World Bank Group) will be directed to adaptation measures. However, it is important to note not only the share but also the volumes. In the case of EIB, 50% of financing will be about 32 billion euros per year (based on 2022 data, 62 billion euros), for the EBRD – 50%, about 6.5 billion euros (based on 2022 data, 13 billion euros), for Nefco – 100%, 128 million euros for Eastern Europe (based on 2022 data), for the World Bank – 35%, this is about 3.0 billion US dollars (based on 2022 data – 8.5 billion US dollars).

Having analysed the green financing criteria being used by IFIs and DFIs, key considerations are given to:

1. Compliance of the project with the Paris Agreement;
2. Compliance of the project with the UN SDGs;
3. Compliance of the project with European and national legislation;
4. Compliance with the EU Taxonomy and its principle "Do No Significant Harm";
5. Availability of ESG reporting;
6. Provision of related project documentation (e.g. ESMS).

Based on the analysed regulations and international agreements, as well as the requirements of international financial institutions and development agencies, we offer recommendations for the government. They contain a minimum set of green indicators feasible to implement at different recovery stages. At the stage of fast recovery, they should be used to lay the foundations of the Build Back Better concept, as well as to launch the initial processes of taking into account the cross-cutting nature of the fight against climate change and environmental protection. They should also be applied at the long-term recovery stage after the end of the war.

At the fast recovery stage, the government should lay the basis of the Build Back Better concept to launch the initial processes of considering the cross-sectoral character of climate change and environmental protection. Implementation of recommendations for the long-term will help draw grant funding, concessional loans, and investment during the broad-scale post-war recovery. It will also contribute to aligning Ukrainian legislation with European one, developing green technologies and integration into the European supply chains and improving reconstruction and EU accession planning and management.

Recommendations for overcoming identified "bottlenecks" of green restoration in Ukraine include the following:

Bottleneck 1. Low level of green mainstreaming in the recovery policy framework

1. Determine the regulatory minimum 'greenness' indicators of recovery projects, which will contain the set of specific indicators/metrics for each sector or project type to make them green.
2. Prepare criteria for green recovery and develop a system of green recovery indicators that will consider the requirements of the DFIs and IFIs, targets under the EU GD policies, and the OECD and IMF system of indicators.
3. Validate and integrate the Build Back Better concept and its principles of green recovery at the national, regional and municipal levels across sectors for all public plans/programs and for businesses.
4. Integrate green criteria into recovery planning: the green indicators and climate/environmental risk assessment tools as mandatory requirements in governmental recovery planning.
5. Develop a list of technologies and types of projects where no investment will be attracted, describing conditions for possible exceptions. The approval must consider the risks of stranded assets (the facilities to be reconstructed might lose their value faster than expected due to stricter climate policies in the future).
6. Mainstream climate issues, establish which minimum share of recovery spending will be green, i.e. will meet the green criteria, and set minimum sustainability criteria for the rest.
7. Adopt and enforce state regulations on standards for mandatory disclosure of non-finance information by companies in accordance with European and global best practices.
8. Develop projects on carbon offsets trading.

Bottleneck 2. Fast recovery actions vs post-war reconstruction priorities

1. Develop and adopt climate governance architecture by introducing climate policies that would gradually align with the European Green Deal while ensuring favourable conditions for green recovery and low-carbon development.

2. Adopt the framework climate law, which will establish long and short-term climate goals, the system for monitoring and controlling progress on them to set Ukraine's long-term intention to decarbonise and refocus its economy, to synchronise with the EU in terms of the climate policies, and to create the favourable environment for green sector development.

3. Integrate the sustainability component as an integral component into public procurement, i.e., consider the indicators of the impact of environmental and climate change as well as innovation.

4. Encourage local self-government representatives to lead the reconstruction process.

5. Avoid concessions in enforcing environmental regulations at any recovery stage since it can result in constructing facilities with negative environmental, climate and public health impacts for many decades after the end of the hostilities or the facilities that may become stranded assets.

6. Encourage social inclusiveness by ensuring the engagement of the public in recovery planning at the level of the Government and local authorities.

7. Advance professional qualifications in the field of climate and environment to raise public awareness to ensure the availability of necessary competencies and capacities to implement the European reforms and increase the public's environmental awareness.

8. Support the development of green innovation and research among Ukrainian businesses, academics, universities or other scientific institutions, including by encouraging cooperation with European companies and scientific institutions.

Business representatives should improve their corporate green culture and basic policies, that is, at the internal level, understand the need for and importance of both the green recovery of the state and the development of corporate climate and environmental governance. Prioritise recommendations arising out of green indicators, the implementation of which will contribute to the formation of corporate green culture and consciousness, as they are the first step on the way to changes in the company's activities. This will subsequently lead to advantages in the company's market positioning, as the company will better understand and be prepared for the requirements of its international investor partner.

Bottleneck 3. Ukrainian business is in survival mode, not developing

1. Integrate minimum green components into projects, including the ones that can be treated as recovery projects, and to bring their own business approach to the recovery process in line with the governmental Build Back Better concept.

2. Start preparation for long-term recovery, introducing the broader and more significant package of governmental laws and regulations, criteria of green recovery and transition to a more sustainable business model.

3. Monitor key trends in climate change and the applicable regulatory policy based on the Paris Agreement and the Sustainable Development Goals.

4. Monitor key European climate and environmental trends, corresponding ambitions and plans of the EU, including requirements for non-finance reporting by companies.

5. Assess own contribution to achieving the goals set by the principal national strategies in energy, climate and environment.

6. Prepare projects that can be funded by the state and international organisations in accordance with the requirements of the recovery plans approved by the government or published on the official state online recovery platforms.

7. Analyse green requirements of their international partners and investors, and to start implementation thereof now.

8. Induce the development of climate and environmental awareness in the company, in the first place, at the top management level, with an account of the risk-focused approach to such development and reconstruction.

9. Assess the sustainable business principles and practices of contractors and partners to analyse their ESG reporting and dynamics of carbon footprint reduction.

10. Publish information on the company's environmental sustainability and climate responsibility, together with the dynamics of achievement of its climate goals, at the company's website.

Currently, the priority task for the government should be the unification of the categories and principles of green recovery, the expansion of the vision of the components of such recovery due to the understanding of the foundations of international climate policy, the European Green Deal, as well as their impact on financial institutions.

The green component should be a basis at all stages of Ukraine's recovery, including the stage of fast recovery. A basic, minimal system of requirements and indicators is proposed in this study. An effective platform for applying these green indicators will be the national digital platform of the Ukrainian recovery projects DREAM.

Finally, the proposed system of green indicators and practical recommendations for the government and businesses will contribute to expanding the possibilities of attracting financial support as well as technical assistance for the country's recovery. This will help avoid the risk of rebuilding Ukraine according to the Business-as-usual scenario – that is, using outdated, resource-intensive, inefficient and carbon-intensive technologies.

The international partners, including governments, organisations and IFIs, mostly believe that the leader and coordinator of Ukraine's recovery process should be the Ukrainian government. While they should grant support at different recovery stages, such as technical, analytical, expert and financial.

In its analytical document “Designing Ukraine's Recovery in the Spirit of the Marshall Plan” [Ganster and others, 2022], the organisation presents its views on the architecture, principles, and coordination of international partners of Ukraine. In particular, the centre distinguishes the following investing phases subject to the recovery stages:

- Relief in time of war – means the investment phase, which includes the provision of humanitarian and macro financial aid and recovering the critical infrastructure.

- Reconstruction – rapid post-war response to encourage market recovery and finance reconstruction of the social infrastructure.

- Modernisation based on the Build Back Better principle is the investment phase, which includes structural changes in the economy focusing on digitalisation, environmental friendliness, and leapfrog. It should include structural economic changes focusing on digitalisation, environmental friendliness, and leapfrog.

- EU accession – EU accession means the investment phase that includes the final alignment of the national regulation with the European one as well as raising investment into climate neutrality of the country. This stage should include the final alignment of the regulation with the European one as well as investment into climate neutrality of the country.

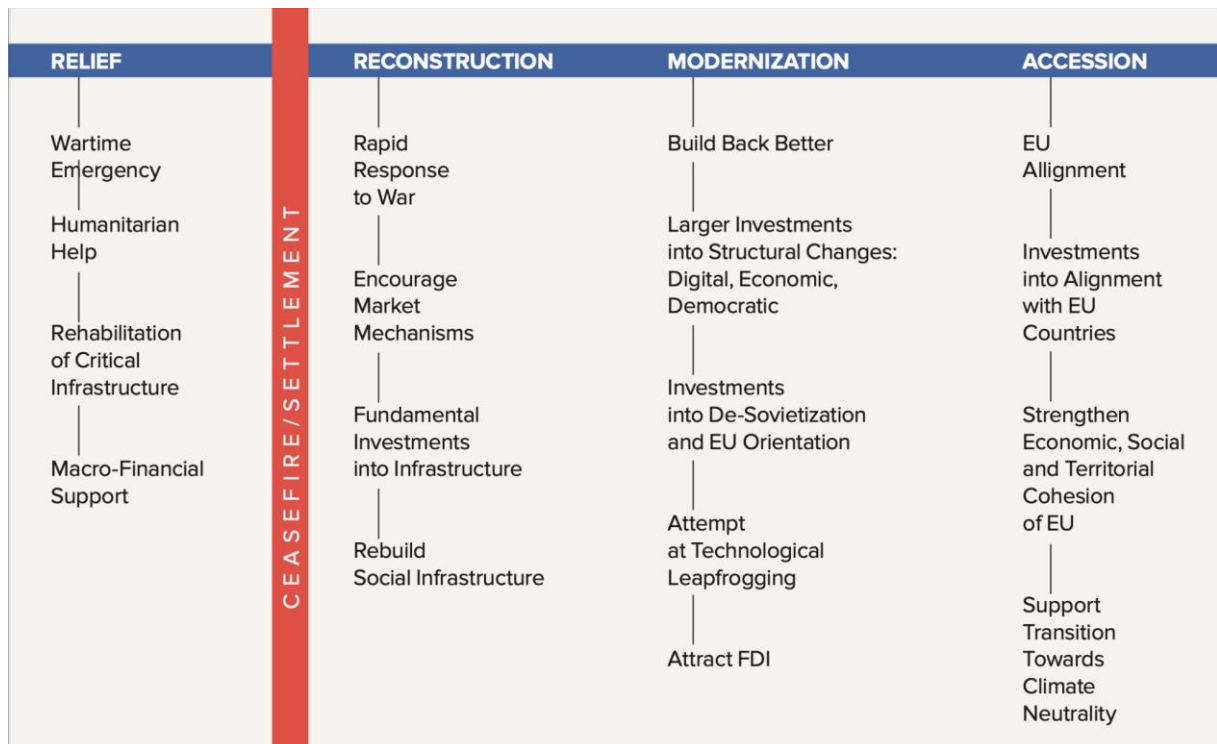


Figure 2. Investing phases of Ukraine’s recovery from war effects
Source: ibid

Therefore, the Marshall Fund deems it expedient to start considering green components at later phases of the state's recovery, i.e. modernisation and EU accession although the ultimate goal is integration into the EU, whose climate policies Ukraine will have to implement.

Vision by the EU. With Ukraine's integration into the EU, the way the European Union sees Ukraine’s recovery must be of priority for the government. In 2022, the European Commission approved the communication “Ukraine Relief and Reconstruction” [European Commission, 2022]. In its document, the EC lists four major pillars of reconstruction, one of which is “Support the recovery of Ukraine’s economy and society by promoting sustainable and inclusive economic competitiveness, sustainable trade, and private sector development, while contributing to the green and digital transition of the country”. However, the EC does not specify sectoral actions and reforms to be performed within such recovery.

Also, in June 2023, the EC proposed the [European Commission, 2023a] large-scale facility to aid Ukraine for EUR 50 million from 2024 to 2027. The Facility is organised around three pillars:

- 1) financial support to the state, which will be granted provided that there is a reconstruction plan with the list of EU accession reforms;
- 2) a specific Ukraine Investment Framework to mobilise additional resources;
- 3) technical assistance and other supporting measures.

The proposal for [European Commission, 2023b] a regulation “On establishing the Ukraine Facility” refers to the need to invest in the transition towards a green, digital and inclusive economy. The goals of the new financial instrument include a green transition of all the economic sectors. It is also mentioned among the main principles that funding within this EU instrument is supposed to contribute to fight climate change and be guided by the sustainable approach on which the EU GD is based. The EU believes that the green component is key and reiterates that the recovery should not only include reconstruction of what has been destroyed but also be sustainable and resilient, based on the ‘do no harm’ principle and ‘leave no one behind’ principle established at the UN level, consider the approaches of the EU Initiative New European Bauhaus [European Union, 2020], according to which living spaces must be sustainable in terms of climate, pollution, circularity, biodiversity as well as aesthetic, inclusive and accessible.

It is also stated in the proposal that the European investors shall not support projects which are incompatible with the National Energy and Climate Plan (if available), the Nationally Determined Contribution to the Paris Agreement [Rozporiadzhennia Kabinetu Ministriv Ukrainy № 868-r, 2021], or that promote investments in fossil fuels. The EU will also avoid investing in stranded assets. Although the European Commission gives no detailed instructions on Ukraine's recovery, it establishes the principles to be considered. Moreover, financial support is expected to be granted following the internal assessment of the recovery plan by the European Commission. As of September 2023, the draft regulation is under consideration by the EU Parliament and Council. If the proposal is approved, support will be given in the form of grants and loans for four years upon the adoption date, provided that the recovery plan acceptable for the EU is developed and adopted by Ukraine.

Vision by the UN. The UN is Ukraine's international partner that grants targeted support to certain green recovery programmes and has a number of basic general requirements and criteria for support and funding of sectoral green recovery projects. It must be understood that even certain targeted programmes of the UN agencies have specific requirements and expectations for such projects. Thus, the representative of the UNIDO, the United Nations Industrial Development Organization, stated that the organisation would cooperate [UNIDO, 2023] with the Ukrainian government to develop strategic approaches towards green industrial reconstruction and development.

Specially for The Ukraine Recovery Conference 2023, which was held in London in June 2023, the United Nations Economic Commission for Europe (UNECE) drew up the report "Rebuilding Ukraine with a Resilient, Carbon-Neutral Energy System" (the key authors were from the Institute for Economics and Forecasting, National Academy of Sciences of Ukraine) [UNECE, 2023]. The report considers the scenario of post-war reconstruction of the carbon-neutral energy system. It gives recommendations and a road map for further recovery planning for the government.

During the COVID-19 pandemic, the UNDP Ukraine included the early recovery components into the existing programme "Inclusive Development, Recovery and Peacebuilding". The Building Forward Better approach was used for recovery in the eastern regions, where the war had started in 2014, and for recovery from the Covid crisis. The Building Forward Better approach by the UNDP for Ukraine includes the following [UNDP, 2020]:

- Making the recovery people-centred, namely reducing the wage gap between men and women, disparities in digital literacy and access to technologies between age groups, and equal access to quality health care.
- Digital transformation – expanding educational programmes to cover people living in rural areas, the elderly, and ethnic minorities.
- Investing in energy efficiency in public and private buildings, resilient and sustainable urban infrastructure, and more green spaces, including less pollution.
- Development of low-carbon energy solutions – ensuring decentralisation with energy independence while increasing energy security.
- Preparing for future crises – necessary changes in institutions and infrastructure.

At the same time, in the context of the COVID-19 crisis, the UNDP also uses Build Back Better, which means low carbon, resource efficient and socially inclusive recovery. Under this scenario, investment is made into the economic activity, infrastructure, and assets, which contribute to the reduction of GHG emissions and pollution, increase energy efficiency, and have a positive impact on biodiversity and ecosystem services. The purpose of this UNDP project ("Supporting green recovery in Ukraine") was to improve the legislation for green transition, conditions for the functioning of green financial markets, and better assessment and management of climate risks. Several publications were made within the project, including the Report on standards for ESG disclosure for financial institutions, except for banks, the Report on prospects of the green taxonomy in Ukraine, the Report on international voluntary and mandatory carbon markets, with description of Ukraine's opportunities.

After the full-scale war had started, the UNDP approved the UNDP Recovery Framework for Ukraine, and the overall purpose of the organisation is to bring the country back to a trajectory

consistent with the Sustainable Development Goals. In general, the UNDP has set the following priorities for itself [UNDP, 2023]:

- Supporting the government in the development of capacities for crisis response; assessment of damages from destroyed infrastructure; support in development of the National Recovery Plan.
- Sustaining the provision of public services: mobile administrative service centres, digitalisation of public services, analysis of gaps in social service provision by local authorities.
- Facilitating the return of the Ukrainians and reconstruction: the UNDP helps supply power equipment, ensure access to water and heating as well as clearing of debris of the destroyed buildings and infrastructure.
- Assisting micro, small and medium-sized businesses, including in relocation.
- Supporting non-governmental organisations in promotion of democratic policies (human rights, gender equality, anti-corruption etc.).

UNDP also supports the implementation of energy efficiency measures through the energy service mechanism (ESCO contracts), which will allow attracting off-budget investments in energy efficiency not only in public buildings, but also in critical infrastructure facilities that provide heat, water, street lighting, etc. The expert report of the UNDP project "Removing ESCO Barriers" [UNDP, 2022] outlines the necessary indicators for a quantitative and qualitative leap in energy services to improve energy efficiency and energy security, in particular:

- annual coverage by ESCO projects of municipal and state-owned buildings and infrastructure of at least 1% of the total for 10 years (about 1-1.5 thousand buildings per year)
- an average "depth of energy efficiency of projects" of at least 40% (the level of reduction in energy consumption relative to the baseline);
- the share of ESCO contracts with introducing renewable energy sources and/or alternative fuels is at least 50% of the annual total number of energy service contracts concluded.

At the same time, UNDP has a separate program for the energy sector, which aims to support the resilience of the energy system. The strategic goals of the program are as follows:

- to take emergency actions to ensure resilience of the power system;
- to enhance the power system of Ukraine and its resilience;
- to ensure long-term reduction of GHG emissions and negative impact on the environment.

Vision by the World Bank. The World Bank's vision [World Bank, 2022] for Ukraine's green recovery and build back better process outlines three key phases: Relief, Recovery, and Resilient Reconstruction. During the Relief phase, the focus is on sustaining the economy and protecting the population, with priorities like maintaining macro-financial stability and restoring essential services. The Recovery phase aims for a quick rebound post-conflict, addressing macro-financial stability and restoring private sector functioning. Finally, the Resilient Reconstruction phase involves long-term rebuilding of infrastructure and institutions, fostering a sustainable, inclusive society, and integrating Ukraine more closely with the European Union. In this document, the World Bank does not focus on green recovery, only including some of the green measures, such as energy efficiency and climate considerations, but rather at the latest stage of recovery. Climate-smart agriculture practices are also included in the second and third phases. Moreover, at the Relief stage, it is recommended to accumulate coal reserves for TPPs. It should be noted that the vision was presented in April 2022.

In the second report "Ukraine Rapid Damage and Needs Assessment" of February 2023 [World Bank, 2023], the World Bank, together with KSE and UNDP, not only estimates the reconstruction and recovery needs as a result of the war as USD 411 billion but also makes a number of assumptions about Ukraine's recovery.

For instance, one of three main recovery principles is called building back better for a more sustainable future, including harmonisation of Ukraine's legislation and policies with European Union law. The Build Back Better approach is a basis for reconstruction and recovery, including the productive sector, irrigation and water resource management systems, the financial sector, and infrastructure.

Expenditures for adaptation to climate change are considered in agriculture. Energy efficiency must be a cross-cutting element of reconstruction. It is also noted that the post-war period will enable

revising energy priorities, and the decisions taken will influence energy security and climate goals in the long run. For the goals to be achieved and for economic recovery to be ensured, the World Bank recommends reducing reliance on fossil fuels and minimising energy consumption, rebuilding based on the Build Back Better concept, and transitioning to a decarbonised economy.

Therefore, the World Bank’s assessment lays the green recovery principles when calculating the costs of reconstruction. The Build Back Better concept is broader as it also includes other areas in which it is used without connection with decarbonisation or reduced impact upon the environment. In other words, it can be stated that the World Bank uses green recovery principles as a part of the general Build Back Better approach.

Vision by civil society. The Ukrainian and foreign analytical centres and non-governmental organisations have also conducted their studies and drawn up notes and other position documents on Ukraine’s recovery.

A consortium of Ukrainian non-governmental organisations coordinated by the think tank Dixi Group published an analytical note “Post-War Green Recovery of Ukraine: Vision and Models” in 2022 [NGO "Resource-Analytical Center "Society and Environment", 2022a]. The document describes an ambitious and pragmatic model of green recovery, which includes the fundamentals/principles, goals and green instruments and mechanisms, and also defines three stages of recovery:

- 1) wartime;
- 2) two to three years after the hostilities; and
- 3) medium-term, ten to fifteen years.

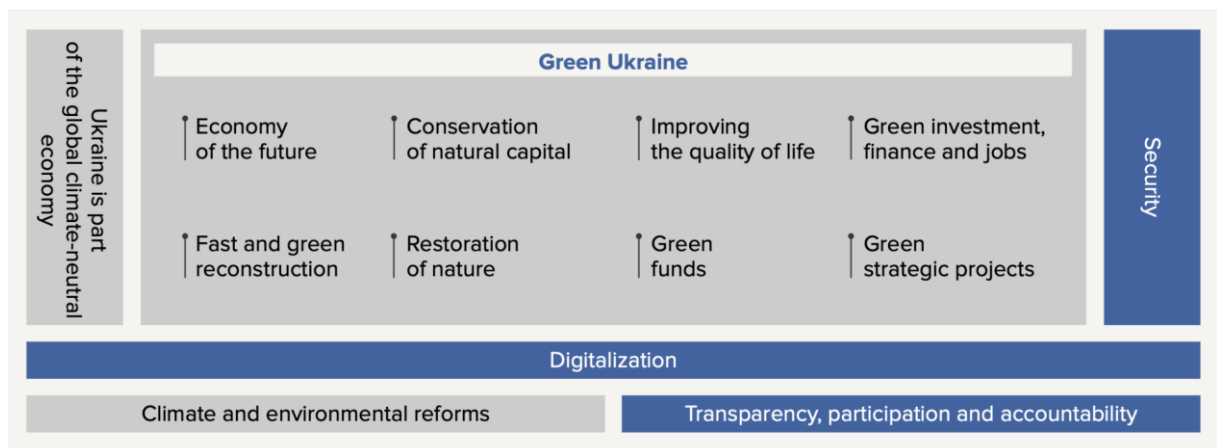


Figure 3. Architecture of the ambitious model of green recovery of Ukraine

Source: ibid

The Resource and Analysis Centre “Society and Environment” wrote the document “Post-War Green Recovery of Ukraine: Vision and Models” [ibid], and also published the document “Post-War Recovery of Ukrainian Cities: Green Reconstruction and Green Transformation” [NGO "Resource-Analytical Center "Society and Environment", 2022b].

The economists of the Center for Economic Policy Research developed the Ukraine Recovery Plan in 2022. The study proposes the following reconstruction stages: 1) instant response; 2) fast recovery of critical infrastructure; 3) laying the basis for future growth and modernization [Ukraine Recovery Conference, 2023]. The principles and approaches recommended for the first and second stages do not mention decarbonisation or sustainable development principles. Decarbonisation of the energy sector and reduced reliance upon fossil fuels are recommended for the third stage. At the same time, the proposed actions include construction of liquefied natural gas terminals and modernisation of oil terminals near the Black Sea, which is inconsistent with the previous recommendation on decarbonisation of the energy sector although gas investment can promote decarbonisation under certain conditions.

The third stage also proposes a reconstruction of the country based on the Build Back Better concept, namely the modernisation of the production capacities to use the latest technologies for low-carbon development. Therefore, the authors connect these two concepts. The study also gives examples of the approaches to modernisation and decarbonisation of buildings, transport, technological and innovation development.

Finally, the German Marshall Fund (USA) developed the document “A Modern Marshall Plan for Ukraine” [Heather, 2022], which considers seven lessons to be considered in the recovery plan based on the history of the reconstruction of Europe after World War II. The Plan hardly mentions the environmental and climate recovery aspect. Although climate as an element of reconstruction cannot be a lesson from the post-World War II period, recommendations should consider the modern climate and environmental needs context and challenges.

Vision by academia. Some of the works written by Ukrainian and foreign scholars consider green recovery aspects in the energy, transport, and agricultural sectors by assessing necessary investments and recommending policies and reforms. They include:

- The Green Phoenix Framework: a climate-positive plan for economic recovery in Ukraine [Zagoruichyk and others, 2023]. In particular, the study proposes improving the policies announced in the Recovery Plan (Lugano, 2022). Thus, green alternatives to increasing gas production and modernisation of gas transmission and distribution networks are offered: RES, green industry development, energy efficiency, modernisation of the gas transmission and distribution networks for CO₂, green gases and biofuel production. The authors have also identified gaps in the Recovery Plan offered in Lugano as to green activities and approaches. Such recommended approaches can be treated as green recovery principles within the Build Back Better concept.

- Can Ukraine go ‘green’ on the post-war recovery path? [Chepeliev and others, 2023]. In this work, the authors consider possible ways to recover the energy system of Ukraine and demonstrate that the green energy transition will not be much more expensive than the reference scenario even if related benefits of such transition are disregarded.

NRC 2022 Proposal		Green Phoenix Proposal
Increasing gas production from existing fields and development of offshore gas fields in the Black Sea shelf	V/S	Scaling green energy production & green industry (renewables, hydrogen, green steel, nitrate-based mineral fertilizers)
Modernization domestic gas transmission and distribution networks	V/S	Repurposing gas infrastructure for transportation and storage of renewable gases, CO2 and upgrading power grids
Building a new refinery, rebuilding the old one and constructing a new oil pipeline	V/S	Reducing oil dependency through bans on public procurement of diesel and petrol vehicles and switching to biorefineries
Conventional agriculture practices	V/S	Sustainable agriculture practices (advanced irrigation practices, conservation tillage, alternative proteins, digitalization)
Construction, reconstruction and modernization of roads and bridges	V/S	Greener road infrastructure through dedicated space for bus lanes, bicycles, EV charging infrastructure and using low-carbon road materials
Post-war recapitalization and balance sheet strengthening to sustain lending growth	V/S	Greener banking through limiting finance for the fossil fuel sector and issuing green bonds and green loans

Figure 4. Proposals for amendments to the policies of the National Recovery Plan
Source: Ukraine Recovery Conference, 2023

<p>Infrastructure adaptation and resilience</p> <ul style="list-style-type: none"> • All new infrastructure designed for changing climate • Nature-based Solutions (NbS) • Comprehensive climate aware legal framework 	<p>Sector coupling</p> <ul style="list-style-type: none"> • Energy efficient buildings • Distributed energy resources (solar PV, heat pumps, battery storage) • Transport electrification • Modernization and digitalization of power grid
<p>R&D for clean technologies</p> <ul style="list-style-type: none"> • Prioritise domestic high-tech green skills with scientific and engineers • Create green hubs for foreign R&D • Use public procurement standards to build early markets for green products 	<p>Green human capital development</p> <ul style="list-style-type: none"> • Capacity building: training and reskilling for emerging green jobs • Cross-sector knowledge transfer involving businesses, universities, governments, and NGOs

Figure 5. Structural gaps in the National Recovery Plan and potential solutions
Source: Zagoruichyk and others, 2023

Conclusions. At the same time, the analysis of the vision and approaches of the key international stakeholders demonstrates that green recovery principles should be a basis for recovery plans, programmes, projects and approaches, and should also be represented in indicators and metrics of the green goals. The non-governmental organisations and think tanks both in Ukraine and abroad advocate green recovery and continued EU accession, in particular within the European Green Deal actively. In particular, the following principles and approaches to green recovery are recommended:

- reconstruction and recovery in a manner consistent with the goal under the Paris Agreement to limit the temperature increase to 1.5°C;
- economic growth without increased GHG emissions (decoupling);
- reconstruction of critical infrastructure and enterprises with account of green technologies and potential phase-out of fossil fuels;
- reform of the environmental policy: establishment of long and medium-term goals to improve the environment;
- preservation and restoration of the natural capital affected by the war;
- resilience to climate change (natural disasters, changes in weather conditions);

- human rights-based, people-centred environmental and climate policies, and environmental justice.

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