

STRATEGIC PLANNING OF THE INDUSTRIAL RECOVERY IN UKRAINE BASED ON SUSTAINABLE DEVELOPMENT

Oksana Kushnirenko*, Nataliia Gakhovych

State Organization "Institute for Economics and Forecasting of NAS of Ukraine", Kyiv, Ukraine,

* Corresponding author: kushnksena@gmail.com

Abstract. *The article substantiates the importance of incorporating the principles of sustainable development into the strategic planning of Ukraine's post-war recovery. The authors noted the importance of the full Sustainable Development Goals implementation into the national strategic documents of Ukraine for recovery economic growth and integration into the European community. It made possible to determine the levels of support for sustainable development in Ukraine and the tools for their implementation. These include the introduction of a flexible strategic planning system and associated institutional arrangements; developing funding strategies and creating databases to track progress towards achieving the SDGs. These tools include in-depth interaction with foreign partners in the EU. The primary task is to develop National Plans for Post-War recovery, aligning the goals of recovery with the SDG goals and indicators. The goals and objectives mandatory for the post-war recovery of industrial development in Ukraine are substantiated, namely energy efficiency, ensuring efficient, safe and environmentally friendly production according to the sustainable development principles, a future without a carbon footprint and a circular economy in accordance with the European strategic vector. The action of these instruments is aimed at creating favorable conditions for eco-innovative transformations and is implemented at the level of interstate cooperation, state institution, regional public institution and enterprises. Areas of consolidation with the European agenda have been identified, namely strengthening cooperation in the field of green economy: decarbonization, waste management; harmonization of industrial policy, creation of alliances and promotion of international cooperation.*

DOI: 10.24263/EDSD-2023-5-10

Introduction. European society is a model of sustainability and democracy. It confirmed by a system of values and a well-developed infrastructure aimed at achieving sustainable development in all EU countries - rational models of consumption and production, ecological use of natural resources to meet the needs of the current and future generations of people. Adherence to the European principles of socio-economic development is a strategic goal of Ukraine, which, despite being tested by the war for its independence, freedom and national identity, continues to carry out the necessary reforms for joining the EU. The consequences of Russia's war with Ukraine go far beyond Europe and affect almost all aspects of sustainable development for all countries. First of all, the war could cause a global food crisis that would last for years. The decline in the global food supply has led to a sharp rise in food prices. In addition, the introduction of a ban on the export of Ukrainian food by some countries increases the risk of a global food crisis. This distorts the direction vector of a civilized society towards the achievement of the Sustainable Development Goals. The second important aspect of threat to achievement of the Sustainable Development Goals is the ecological catastrophe caused by military actions and threats to nuclear security of world. The situation in Ukraine showed how unstable global energy security is, which is directly related to oil and gas. Therefore, war in the heart of Europe has reinforced the importance of coordinated actions of

democratic world in strategic planning of events and development of responsible policies to overcome threats not only to the economy and climate, but also to security of every citizen.

Materials and methods. To achieve this goal, the following methods of scientific research are applied: system analysis, content analysis, methods of scientific generalization, induction and deduction. Scientific publications and reports of international organizations in the relevant fields, normative legal acts, in particular regulations, work programs and documents of the European Commission, draft plans for the recovery of Ukraine, scientific works of foreign and domestic scientists were used. In particular, through the approaches of the Economic Analysis and Policy Division of the United Nations Department of Economic and Social Affairs (UN DESA), published in the Sustainable Development Outlook 2021, the relationships between selected DGs are identified, which helps to understand and explain the results of progress and tools towards achieving these goals.

Results and Discussion. At the current stage, achieving sustainable economic growth has become an important item on the global agenda. Harmonious coordination of the components of sustainable development, which ensures economic growth, social stability and ecological balance in long term, can be ensured with the help of concept of green economy, which has recently received increased attention around the world. The transition from the traditional model of economic development to green growth is becoming a worldwide global trend, in which the green economy acts as a tool for achieving sustainable development. In 2015, at the Summit on "Sustainable Development" in New York, 17 global goals were approved, the achievement of which is to reduce poverty, protect the planet and ensure that by 2030 all people live in peace and prosperity. 17 Goals are priorities for achieving a balance between the three elements: social, economic and environmental sustainability. They are complementary: actions in one area also affect results in others, combating climate change is one of the 17 goals that currently require active action [1].

Issues of sustainable development and its implementation into development of civil society are at the center of the foreign and domestic scientific discourse. So, A. Balaskas, E. Lima, T. Sid and others from the School of Engineering at Blacking Institute of Technology, Sweden, developed the Framework for Strategic Sustainable Development Assistance (FSSDA). The program is based on a five-level strategic planning framework, which includes the following stages: system-wide measurement; identification of strategic development goals; guidance to the strategic management process; development initiatives, projects and programs; tools for monitoring, measurement, evaluation, analysis, capacity building, etc. Dr. Mousumi Roy provided policy recommendations in developing and implementing sustainable development strategies. In his book "Strategy for Sustainable Development. Technology, culture and economics", he combined social, economic and environmental goals, taking into account their consequences for different socio-economic groups and future generations [3].

Drawing on the concept of externalities, I. Montiel, A. Cuervo-Casurra and others have argued how multinational companies can contribute to the implementation of the UN Sustainable Development Goals as part of their regular investments. The authors grouped 17 sustainable development goals into six categories based on whether they increase positive externalities or reduce negative externalities and placed these categories in an expanded value chain to facilitate their implementation. This allowed them to prove the dependence of profitable corporate growth on the integration of environmental or social sustainability issues [4].

Ukrainian researchers Yu. Petrushenko, V. Aleksandrov and others conducted a bibliometric analysis in the VOS viewer software and identified the main scientific clusters of the connection between the theory of sustainable development and the strategic planning of local communities [5].

The Sustainable Development Outlook 2021, prepared by the Economic Analysis and Policy Division of the United Nations Department of Economic and Social Affairs (UN DESA), selected individual DGs, analyzed progress in the years preceding COVID-19, examined the impact of the pandemic on them, and generated scenarios for achieving these SDGs and identifying policies that can help realize these scenarios. The Sustainable Development Outlook (SDO 2021) aims to facilitate the process of revitalizing efforts to achieve the 2030 Agenda [6].

In national sustainable development strategies of individual countries, ecological component is mentioned in connection with economic growth, and solution for tasks of greening complex and economic growth is envisaged within the framework of implementation of the green economy concept. The result of applying the concept of green growth should be a transition to a low-carbon economy. It should be based on socially responsible business conduct, which involves the implementation of complex programs and mechanisms for increasing resource efficiency, developed taking into account the technologies available at the enterprise (waste management programs, energy efficiency improvement programs, etc.). Its integral component is also socially responsible consumption, which involves changing people's views, thinking and values in relation to nature. The concepts of sustainable development, green and circular economy are similar in many respects: these concepts are global; they emphasize the importance of better integrating environmental and social aspects with economic progress; they emphasize intra- and intergenerational obligations due to environmental hazards; and also signal the importance of expanding the participation of authorities and the public. Therefore, when considering the concepts of sustainable development, green and circular economy, it is necessary to emphasize a similar approach to their formation, caused by the growth of environmental risks, the general focus on ensuring development based on economic growth, as well as the importance of partnership and cooperation between interested parties to achieve the set goals. The solution to Sustainable Development Goals 12 "Responsible consumption and production" in the field of sustainable development is the transition to a circular economy, which represents a system of production and consumption with maximum efficiency in the use of resources, waste management and minimization of external negative effects on the environment. Sustainable development goal 12 "Responsible consumption and production" provides for achievement of reducing the resource intensity of economy and ensuring environmental safety. That is, the prerequisites for its achievement are industrial development with a simultaneous reduction of burden on the environment, i.e. achieving a balance between economic development and preservation of natural resources. And this, in turn, will contribute not only to reducing resource consumption, but also to reducing the cost of manufactured products and increasing their competitiveness. As well as Goal 12 achievements will allow to fulfill the tasks set in the Goals 6, 7, 8, 11, 13, 14, 15 and positively influence the decisions of others. This is also confirmed by analytical assessments of the Institute of Social and Economic Research of Ukraine, confirming the synergistic impact of SDG 12 on other important goals. The 12th SDG objectives related to reducing the resource intensity of the economy, reducing the volume of waste generated and deepening their recycling (SDG 12.1 and 12.4) are quite fully reflected in the state strategic documentation concerning the development of economic sectors. However, A significant disadvantage is the lack of the specific resource intensity indicators that should be achieved in the process of completing the assigned tasks [7]. That is, to assess the

implementation of the 12th SDG in Ukraine, we will consider how we managed to achieve the appropriate level of indicators for 2015-2021 and the estimated results in 2025 and 2030. (Table 1).

Table 1

Indicators of achievement of the SDGs in Ukraine, % to the level of 2015

Indicator	2015	2016	2017	2018	2019	2020	2021	2025 (mark)	2030 (mark)
Energy intensity of GDP	100	102,3	94,7	95,2	88,5	88,9	- ¹	80	60
Material capacity of GDP	100	100,0	98,2	97,2	100,4	99,9	108,2	80	60
Carbon capacity of GDP	100	105,8	85,1	83,8	77,9	72,8	72,2	80	60
Water capacity of GDP	100	98,2	91,7	95,1	91,6	94,2	77,3	80	60
Waste capacity of GDP	100	92,5	111,6	103,9	126,1	137,3	141,6	80	60

¹ The calculation of the indicator for 2021 will be renewed after the deadline for submitting statistical and financial reports established by the Law of Ukraine "On the protection of the interests of subjects submitting reports and other documents during the period of martial law or a state of war".

Source: data of the State Statistics Service of Ukraine [8].

The given data confirm that Ukraine has long been actively supporting the implementation of the 2030 Agenda for Sustainable Development, an international document adopted in 2015 to overcome poverty, protect the planet, and ensure peace and prosperity for all people by the end of this decade. In 2019, the President of Ukraine, V. Zelenskyy, adopted the Decree on the integration of 17 Sustainable Development Goals (SDGs) into state policy [9], as a basis for achieving sustainable economic and social development for all Ukrainians based on the principle of "no one will be left behind without attention".

Until the start of a full-scale war in February 2022, Ukraine made steady progress in achieving 15 of the 17 Sustainable Development Goals, and moreover, it achieved the greatest success precisely in reducing poverty. The Voluntary National Survey of Ukraine for 2021 showed a decrease in poverty from 58.3% in 2015 to 43.2% in 2018 [10]. Reduction of resource intensity of GDP in 2021 compared to the level of 2015 by components: energy intensity of GDP to 88.2%; carbon capacity of GDP up to 72.2%; water capacity of GDP up to 77.3%. The dynamics of most of its components (except for the material intensity of GDP 100.4% and the waste intensity of GDP 141.6%) are positive and there is a high probability of achieving the defined target guidelines for 2025. Therefore, when discussions begin regarding the recovery of the country and the economy, the SDG are used as a reference point to ensure the most effective recovery in Ukraine.

The transition to sustainable development is a complex and long-term process that requires painstaking work at all levels, taking into account the experience of developed countries that have

passed similar tests and achieved a high level of development. The creation of prerequisites for the introduction of the green economy model, first of all, by focusing on resource-efficient and clean production and consumption (including energy saving) requires the improvement of legislation. In particular, we are talking about the introduction of a new hierarchy of waste management in Ukraine and the expansion of producer responsibility, a system of long-term waste management planning at the national, regional and local levels; implementation of measures to prevent or reduce the generation of waste, promote preparation for reuse as secondary raw materials and energy resources; creation of cost-effective technologies for the processing of solid household waste with the receipt of a final product useful for society; improvement of existing logistical approaches to household waste management at the national and regional levels.

An effective institutional framework for sustainable development at all levels is the basis for the full implementation of the Principles of Sustainable Development and the principles of the Rio Declaration on the Environment, including the provisions of the Millennium Declaration, taking into account the Monterrey Consensus and relevant outcomes of other major United Nations conferences and international agreements since 1992 [11]. This should lead to the strengthening of international institutions and organizations involved in sustainable development, following their existing mandates, as well as the strengthening of relevant regional, national and local institutions. The action of these instruments is aimed at creating favorable conditions for eco-innovative transformations and is implemented at the level of interstate cooperation, government agencies, regional institutions and enterprises, as shown in Table 2.

Table 2

Characteristics of levels of support for sustainable development in Ukraine

Level of influence	Characteristic
International cooperation	Fulfillment of the country's international obligations within the framework of international agreements, in particular the European Green Course
State management agencies	The formation of an effective industrial policy, the modernization of the institutional infrastructure, which involves the systematic implementation of reforms in all spheres of the economy, the creation of an innovative ecologically oriented infrastructure
Regional level	Implementation of effective support measures at the level of regions and local communities to transform ecologically "dirty" regions into "green" growth points. Inventory of land damaged by military shelling, demining, restoration and creation of new environmental sites
Enterprises	Innovative renewal of the material and technical base of production based on energy-efficient technologies; introduction of new methods of processing, technologies and new materials; improvement of existing methods of production and management, development and introduction new types of products, introduction new production facilities, reorganization of the organizational system.

Source: compiled by the authors on the basis of the Plan of Implementation of the World Summit on Sustainable Development [11].

Measures contributing to sustainable development include such elements as the formation of an institutional structure and management system (a system of agencies and organizations); legislation (holding public hearings before proposing new legislation); innovation policy (support for eco-innovations); support of small and medium enterprises; awareness campaigns.

The government's role is to use a variety of financial instruments: taxation of fossil fuel use and emissions in various sectors; the transformation of energy subsidies, which lead to wasteful and environmentally harmful economic activity; supporting clean technologies and sustainable production through tax incentives; consideration of potential social consequences (for families with low incomes, pensioners); mapping environmental impacts by estimating the full cost of energy and transportation services.

Implementation the principles of "green transition" to the strategic planning of sustainable development of Ukraine should be based on a model of public governance that involves constructive interaction between government institutions, communities, academics, and private entities. Implementation of such a model is associated with a number of complex management tasks, such as forming a common vision of the country's development, industries and regions; defining strategic goals and development priorities; strengthening institutions aimed at stakeholder participation in decision-making, inter-sectoral and inter-regional cooperation and long-term planning that takes into account the interests of future generations; making coordinated decisions with the participation of stakeholders, etc. To realize these tasks, the following are used a strategic approach is used to realize these tasks, which makes it possible to coordinate actions and development planning to coordinate actions and harmonize interests of different ministries and agencies and other stakeholders.

The strategic approach to sustainable development has been successfully applied in European countries that have not only adopted national sustainable development strategies have not only adopted national sustainable development strategies, but also regularly review them. The EU has solid experience in the field of industrial development strategizing, aimed at creating the conditions for the economic development of industry in the EU, as well as fulfilling the tasks set in the Sustainable Development Goals and responding to the threatening challenges of today. In May 2021, the European Commission updated the Industrial Strategy adopted in March 2020 - a comprehensive document that approved the dual transition of European industry to green and digital transformations. It is a growth strategy focused on the idea of "competitiveness". This was followed by the announcement of the updated European Green Deal [12], which aims to reduce greenhouse gas emissions by 2050 according to the principles of decoupling for the transition to a climate-neutral circular economy. A year later, in April 2021, the European Commission published the Updated Industrial Strategy, which is a response to overcoming the losses from the COVID-19 pandemic and ensuring the recovery of industry and the EU economy [13].

Over the past 30 years, the lack of modernization of industry and the construction of business processes on russian gas, coal and old technologies have played against Ukraine in all aspects: political, economic and environmental. Formation of pro-russian forces, monopolization of key industries, loss of working places, devastating impact of pollution on the environment and health of population - this is a strategic loss for the state that has not formed its own plan for high-tech industrial development.

EU partners are already offering successful experience and tools for post-war recovery, taking into account the principles of sustainable development. In the Communiqué adopted by the European Commission on May 18, 2022 it is noted that the reconstruction must comply with the

European green and digital agenda, and the support mechanism will have a specific management structure that will at the same time ensure full ownership of Ukraine and ensure that investments will be brought into line with climate and environmental policies, as well as EU standards [14]. That is, the economy should be low-carbon and energy-saving, nature-oriented, have efficient and clean production, balanced consumption and be based on the principles of joint responsibility, innovation, cooperation, solidarity, flexibility and interdependence. The implementation of the European Green Course for Ukraine, a candidate for EU membership, is becoming mandatory.

This confirms Ukraine's steadfastness to follow the course of the "green transition", laying a solid foundation for strategic planning of country's recovery on basis of sustainable development. Ukraine is supported in this by the partner countries, in particular the EU. In the joint statement of the Group of Seven (G7) on support for Ukraine (June 27, 2022), the heads of state clearly stated their readiness to support a strategic recovery plan that would promote sustainable, sustainable, inclusive and green economic recovery [15]. The Organization for Economic Cooperation and Development believes that in the long term, the post-war green recovery should be considered as an economic necessity for the deep transformation of Ukraine on the way to a green and climate-neutral economy [16].

Approach to sustainable development for Ukraine depends on the implementation of European legislation and its transfer to the status of national. For this, we need to make appropriate changes to a number of regulations, introducing European principles from the standards of the products to be produced to cultural values and rules. It is primarily about the development of key strategic documents of post-war recovery, namely the introduction of changes to the National Recovery Plan regarding tools for supporting domestic business (especially SMEs) in the process of their adaptation to European requirements in accordance with the principles of "green" and "digital" transition. Martial law forces Ukrainian society to act in extremely difficult conditions, therefore the implementation of European standards and principles requires appropriate state attention. It is expedient to prepare the National Strategy for the Integration of Ukraine into the EU (like the Polish National Strategy for Integration into the EU) as a comprehensive vision of a consistent government policy that integrates European principles; approves goals, mechanisms and means of implementing the strategy, mechanisms of adaptation of key stakeholders to requirements and standards; providing information to society about the opportunities and threats that arise as a result of these changes.

Conclusions. Strategic planning for post-war recovery should implement the principles of sustainable development. This is an urgent task for Ukraine as a candidate for EU membership. In a difficult economic situation and limited resources, achieving 12th SDG "Responsible consumption and production" by using additional sources of reducing the resource intensity of GDP is extremely important.

Ukraine has long been an active supporter of the implementation of the 2030 Agenda for Sustainable Development. An assessment of indicators for achieving the SDGs by Ukraine was carried out using such indicators as: GDP energy intensity, GDP material intensity, GDP carbon intensity, GDP waste intensity showed a partial level of progress. Thus, the achievement of 12th SDG "Responsible consumption and production" has a positive trend in reducing the resource intensity of GDP in 2021 compared to the level of 2015 in terms of components: energy intensity of GDP to 88.2%; carbon intensity of GDP up to 72.2%; water intensity of GDP up to 77.3%. At the same time, there is also a negative trend – an increase in GDP waste intensity by 41.6% over the same period. All this reinforces the importance of introducing a flexible system of strategic planning in the field

of implementing sustainable development in Ukraine at all levels: interstate cooperation, government agencies, regional institutions, business and SMEs. It is important to create favorable conditions for eco-innovative transformations, namely the formation of an institutional structure and management system (system of organizations); legislation (holding public events before new legislation is proposed); innovation policy (support for eco-innovations, transfer of domestic scientific R&D); support for small and medium-sized enterprises; awareness campaigns.

The post-war recovery and further development of Ukraine should be considered as a “green transition” based on sustainable development. This will ensure more economic efficiency and competitiveness of Ukraine in the European and world markets. This will enable Ukraine to transition to affordable green technologies, reduce dependence on fossil fuels and strive towards a zero-emission economy. The primary objectives of the industrial development post-war recovery should be energy efficiency, ensuring efficient, safe and environmentally friendly production based on the principle of green development, a “future without a carbon footprint” and a “circular economy” in accordance with the European vector. All this should be carried out on the basis of strategic documents for industrial development operating in EU countries.

References:

1. United Nations Ukraine (2015), “Hot the UN is supporting The Sustainable Development Goals in Ukraine”. URL: <https://ukraine.un.org/uk/sdgs>
2. Balaskas A., Lima E., Sid T. A (2009), “Strategic Approach to Sustainable Development through Official Development Assistance”. *Overview School of Engineering at Blacking Institute of Technology*. Karlskrona, Sweden. URL: <https://www.diva-portal.org/smash/get/diva2:830423/FULLTEXT02.pdf>
3. Mousumi Roy (2020), *Sustainable Development Strategies. Engineering. Culture and Economics*. 1st Edition. August 19. Butterworth-Heinemann. URL: <https://shop.elsevier.com/books/sustainable-development-strategies/roy/978-0-12-818920-7>
4. Montiel, I. Cuervo-Cazurra, A. Park, J. et al. (2021), “Implementing the United Nations’ Sustainable Development Goals in international business”. *Journal of International Business Studies* 52, 999–1030. DOI: <https://doi.org/10.1057/s41267-021-00445-y>
5. Petrushenko, Y. Vadym, A. Vorontsova, A. Ponomarenko, O. (2020), “Sustainable development goals as a tool for strategic planning in communities: a bibliometric analysis of research”, *E3S Web of Conferences* 202(9):03005. DOI: 10.1051/e3sconf/202020203005
6. Sustainable Development Outlook 2021. From anguish to determination. *Department of Economic and Social Affairs (UN DESA)*. URL: https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/SDO_2021_Full_Report.pdf
7. Analysis of the state strategic documents of Ukraine regarding the consideration of the Sustainable Development Goals adapted for Ukraine until 2030 (2017). *Institute of Socio-Economic Research*. URL: http://iser.org.ua/uploads/files/ISED_Report-UKR_Web_Final.pdf
8. State Statistics Service of Ukraine (2015-2021). URL: <http://www.ukrstat.gov.ua/>
9. Decree of the President of Ukraine No. 722/2019 "On the Sustainable Development Goals of Ukraine for the period up to 2030" (2019). URL: <https://www.president.gov.ua/documents/7222019-29825>
10. UNDP (2022), “Sustainable Development Goals an integral part of Ukraine’s Recovery Plan”. URL: <https://www.undp.org/uk/ukraine/press-releases/tsili-staloho-rozvytku-nevidyemna-chastyna-planu-vidnovlennya-ukrayiny>

11. UNDP, Plan of Implementation of the World Summit on Sustainable Development. *The United Nations Conference on Environment and Development*. URL: https://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/WSSD_PlanImpl.pdf
12. European Commission (2019). The European Green Deal. URL: <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52019DC0640>
13. Kushnirenko, O.M., Gakhovych, N. G. (2021). “The European Green Deal in Ukraine: opportunities and consequences for industry”, *Ukrainskyi sotsium*, vol. 4. pp.12.
14. Malkova, T. (2023). The post-war reconstruction of Ukraine must be green. *Ukrinform*. URL: <https://www.ukrinform.ua/rubric-society/3666839-povoenne-vidnovlenna-ukraini-mae-buti-zelenim.html>
15. G7 Statement on support for Ukraine (2022). Delegation of the European Union to Ukraine. URL: https://www.eeas.europa.eu/delegations/ukraine/g7-statement-support-ukraine_en
16. OECD, Environmental impacts of the war in Ukraine and prospects for a green reconstruction (2022). URL: Environmental impacts of the war in Ukraine and prospects for a green reconstruction (oecd.org).