

# Green Economy as a Prerequisite for Sustainable Development: Analysis of International and Ukrainian Experience

By Valerii Bondarenko<sup>1</sup>, Vitalii Pokynchereda<sup>2</sup>, Oksana Pidvalna<sup>3</sup>,  
Tetiana Kolesnyk<sup>4</sup>, Serhii Sokoliuk<sup>5</sup>

## Abstract

The article reflects the approaches to the essential content of the concept of green economy in the context of the implementation of ecologically-oriented production, ensuring the welfare of society and achieving sustainable development goals, the expediency and socio-economic need to transition to a system of management based on the principles of green economy concept, identifies priority activities to ensure an effective and progressive transition to sustainable development and green economy. The key challenges facing the global economy at the present stage are presented, and the possible options for an effective response to such problems through the prism of sustainable development and implementation of the principles of green economy are considered. The experience of countries of the European and Asia-Pacific regions in developing national strategies for transition to a green economy, which are based on ensuring the life of society in harmony with nature, the promotion of natural biodiversity and the growth of human well-being through the promotion of conservation, is analyzed. The organizational and legal aspects of the formation of green economy in Ukraine are considered, the problematic issues of implementation of the ideas and principles of the concept of green economy on the way to ensure progressive development are given. According to the approved strategy of the state ecological policy of Ukraine the directions of development of green economy, providing introduction of the effective financial tools, in particular, green bonds, green crediting, creation of funds of financing of green projects, optimization of green tariffs are offered and proved.

*Key words: green economy, sustainable development, globalization, global challenges, rational economic management, social justice.*

## 1. Introduction

Ensuring sustainable development has established itself as a key objective of the international community since the UN Conference on Environment and Development (UNCED) in 1992. Among the main outcomes of that conference was, among other things, the call for the world's governments to develop national strategies for sustainable economic development based on the principles of the Rio Declaration. However, despite the numerous efforts of many governments to effectively implement sustainable development policies, as well as continued international cooperation to provide the

<sup>1</sup>Department of Marketing and International Trade, National University of Life and Environmental Sciences of Ukraine, Ukraine.

<sup>2</sup>Department of Accounting and Taxation, Vinnytsia Institute of Trade and Economics of State University of Trade and Economics, Ukraine.

<sup>3</sup>Department of Agricultural Management and Marketing, Vinnytsia National Agrarian University, Ukraine.

<sup>4</sup>Department of Administrative Management and Alternative Energy Sources, Vinnytsia National Agrarian University, Ukraine.

<sup>5</sup>Department of Entrepreneurship, Trade and Exchange Activity, Uman National University of Horticulture, Ukraine.

necessary support to national governments in this regard, serious global economic and environmental challenges remain. These challenges have been particularly acute as a result of the recent protracted crisis in important sectors such as energy, finance, banking, and food. In addition, today a significant challenge for global energy, food and climate security is the armed aggression of the Russian Federation against Ukraine, which has changed not only the global energy, but also, of course, the climate agenda in the world. Analysis of these problems reminds us of the constant warnings from many of the world's influential scientists warning that society is in grave danger of violating a range of planetary boundaries and ecological limits.

## **2. Literature Review**

Issues related to the rationale for the theoretical and practical aspects of green economy policy formation and implementation, its role and importance in ensuring sustainable development are the subject of numerous scientific studies. The UN Sustainable Development Goals play an increasingly important role in economic policy and regulation, and the operationalization of sustainability in the welfare economy, the incorporation of sustainability goals into economic law, the relationship between competition policy and sustainability, the impact of concerns about monetary policy stability, and finally, supply chain regulation and sustainable development goals are among the most discussed at international conferences, symposia, forums and other academic and practical events (Riphahn & Schmidt, 2022).

Economic scientists consider green economy as a source of economic growth and a way to improve people's lives and well-being, to guide the growth of their environmental and social well-being, and one of the important components of the concept of green economy is the promotion of sustainable technology (Söderholm, 2020). Green growth is a practical tool for achieving the goals of sustainable development as a timeless goal, which means promoting economic growth and development. Researchers focus particularly on making the connection between the green economy, green growth, and sustainable development, reasonable because of the complementary and simultaneous nature of these concepts (Dogaru, 2020). The analysis of a variety of green concepts is historically linked to a broader discussion of the relationship between sustainable development and the environment. Many scholars state that in this context a new paradigm must be used, clearly stating that the environment and economic growth cannot be seen as contradictory goals, it is quite possible to achieve a balance between economic growth and concern for the planet and people (Lavrinenko et al., 2019).

Scholarly works describe various theories, concepts, approaches, and tools related to the green economy, such as environmental and ecological economic theories, concepts and approaches of environmentally oriented production, bioeconomy, industrial ecology, circular economy, etc.; develop frameworks that demonstrate the ability of green economy concepts, approaches, and tools to support the transition to sustainable development, which can serve as heuristics for embedding a variety of concepts. Researchers are united in the fact that the green economy has become a critical foundation for growth and development in developed and developing countries, exploring balanced and environmentally conscious environmental management to mitigate and level out

environmental problems, improve production efficiency, develop a green economy and environmentally friendly technologies. Researchers have concluded that the introduction of green economy ideas helps reduce poverty and facilitates poor people's access to a healthy and safe environment, while increasing human security by preventing or resolving conflicts over land, food, water, and other natural resources (Zhang et al., 2022; Tucci & Battisti, 2020).

The issue of formation and development of a green economy as a prerequisite for sustainable economic growth is relevant for Ukraine because of the frequent use of traditional technologies based on the excessive consumption of natural resources and their unsustainable use. The issue is of particular relevance in the current conditions, when the armed aggression of the Russian Federation against Ukraine causes irreparable damage to society, economy and environment. The world as never before needs peace and creation of such conflict preventers to prevent nuclear, climate and environmental catastrophe to ensure sustainable development. Today many Ukrainian scientists-economists explore the problematic aspects of the transition of society to such a priority innovation direction as green economy, consider the concept of green economy as an important component of socio-economic development of the state, outline the role and prospects of Ukraine's participation in the "EaP GREEN" program (Kvach et al., 2015; Borovik et al., 2020). In scientific works and expert environment the necessity of modernization of production according to the principles of green economy, formation of green outlook of the population and education of ecological thinking, expediency of solution of problems of formation of green economy in Ukraine solution of issues of ensuring effective legal regulation in society of relations of economic entities and protection of natural environment are considered (Miroshnychenko & Tyorlo, 2018). Theoretical and organizational and economic bases of green economy as the basis of social development of the state are covered in the study of T. Galushkina, L. Musina and N. Khumarova. Based on the systematization and generalization of existing theoretical provisions and international trends, the authors revealed the essence, institutional preconditions and criteria for the formation of the paradigm of green growth in Ukraine (Halushkina et al., 2012).

Scientists note that the prerequisite for sustainable development and implementation of strategic priorities of Ukrainian society is to ensure environmental security, possible through the development of the regulatory framework in the field of environmental and natural and anthropogenic safety, its adaptation to the international and European law, institutionalization of environmental security and natural and man-made safety based on sustainable development, development of information and analytical, scientifically grounded (Kaletnik & Lutkovska, 2020). Financial support of ecological and natural-technogenic safety should have proper accounting support, the quality of which should be of high demand. Considering the above, scientists have proposed a model for assessing the quality of financial reporting in order to bring the level of its information content to the needs of users, which provides a description of the assessment process, the formation of a system of indicators for assessing the quality of financial reporting and the determination of the scale of their assessment, quantitative assessment of qualitative properties (Pravdiuk et al., 2021).

Problems of formation and development of green economy have been and continue to be

discussed at international forums and conferences, in particular, the subject of constant discourse is the question of the relationship between trade and the environment, the formation of a green economy that supports the goals of sustainable development, attracting new investments and job creation in countries of different levels of economic development, etc. (United Nations Conference on Trade and Development, 2011; United Nations Conference on Sustainable Development, 2012). There are ideas, among others, to create a global civil society and stakeholder movement to promote alternative economic models that can ensure sustainable development for people, countries and generations, based on social, environmental and economic pillars (Jenkins & Simms, 2012).

Various governments are working to operationalize the green economy and the Sustainable Development Goals, including a publication from the United Kingdom of Great Britain and Northern Ireland that outlines the importance of a green economy transition for business, responds to private sector requests for greater clarity on what the government means by a green economy, the policies used to achieve it, and how they are combined to achieve the goal. The National Strategy for Sustainable Development puts forward the French approach to developing a green economy and identifies nine strategic challenges to be addressed on the way to a green and fair economy, namely: sustainable consumption and production; knowledge economy; governance; climate change and energy; sustainable transportation and mobility; conservation and sustainable management of biodiversity and natural resources; public health, prevention and risk management; demography, immigration. The German Sustainable Development Strategy assumes that the country supports partner countries in issues such as the transition to a green economy, the promotion of an inclusive business model and investments with a focus on environment and climate issues (green finance), for example by implementing measures to increase resource efficiency or improve recycling (German Sustainable Development Strategy, 2021). In addition, Germany and Austria have developed bioeconomy strategies at the national level, including specific goal setting, evaluation, operational and procedural elements, and their central ideas are the promotion of research and innovation (Tschannen et al., 2021). Elements of the green economy concept are defined in the legislation of Ukraine, in particular, the application of a special green tariff to stimulate the development of renewable energy sources, which contributes to the rational use of natural resources, environmental conservation and the creation of a safe natural environment for people to live in (On Alternative Energy Sources, 2003). In addition, the Strategy of Sustainable Development of Ukraine - 2030-2021 states, among other things, that the important cross-cutting areas of the country's development are digitalization, green course, business development and balanced regional development (Strategy of Sustainable Development of Ukraine – 2030, 2021), and the strategy of state environmental policy of Ukraine determines that one of the main objectives is to form in society environmental values and foundations of sustainable consumption and production. The armed aggression of the Russian Federation against Ukraine puts on the agenda new challenges related to significant human losses, environmental pollution, disruption of the natural balance of ecosystems, significant migration flows, threat to energy and food security.

Given the above, the purpose of the study is to identify the features of green economy, which will allow to overcome the environmental crisis, increase the competitiveness of the Ukrainian economy and significantly affect the existing labor market, as well as a

comparative analysis of international and Ukrainian experience in the implementation of ideas and principles of green economy in the context of sustainable development.

According to the set goal, the tasks are defined, in particular:

- to consider the state, dynamics and determine the problems of development of green economy in Ukraine;
- to highlight the achievements of international economic cooperation projects in the field of sustainable and green development in the regions of Ukraine;
- to determine the priorities of international economic cooperation in the sphere of sustainable development and green economy.

The object of the study is the green economy as a factor in ensuring the competitiveness of the state.

The subject of the research is theoretical, methodological and practical aspects of the development of "green economy" as a component of sustainable development.

### 3. Discussion

While the governments of the world are trying to find effective ways to bring their states out of crisis phenomena, with the obligatory consideration of environmental factors in this process, the green economy, in its different forms, has been proposed as a means of stimulating the process of developing new national policies and principles of international cooperation to ensure successful sustainable development on the planet. The concept of green economy has gained considerable international attention in recent years, primarily as a mechanism of response to the financial crisis of 2008 and as one of the two main themes of the UN Conference on Sustainable Development (Rio+20). However, despite the considerable interest of the international community in the problems of formation and development of the green economy, the discussion of this concept remains general. This is partly due to the lack of an agreed clear definition or universal principles of the green economy, as well as the emergence of close, but somewhat different, terminology and concepts, in particular: green growth, reduction of carbon emissions, economy, sustainable development economy, etc. The problematic point is also the lack of clarity about what specific measures the concept of green economy should include, how these measures should be aligned with national priorities and key objectives for economic growth and poverty alleviation among the population. In addition, the lack of practical experience in the development, implementation and analysis of the necessary costs and resulting benefits or advantages associated with the implementation of the concept of green economy is also an important problem. At the same time, the desire to solve economic and environmental problems in their countries entails the emergence of new approaches to the development and implementation of strategies of national green economies, which has become characteristic of both developed and developing countries. This is particularly true in regions such as Africa, Latin America, Asia-Pacific and Europe. New international experience will undoubtedly contribute to solving the problems associated with the effective integration of the green economy concept into national economic and social priorities and goals.

Given the global need to change the principles of social production and consumption in today's realities, among the priorities of the green economy are: the internalization of

environmental expenditures, the use of effective economic instruments and the elimination of inefficient consumption and production for the sake of sustainable development. In turn, sustainable development requires the development of national strategies, which should include measures to integrate environmental protection with economic development, ensuring appropriate and effective legal and management mechanisms, the effective use of economic instruments and market mechanisms, the creation of systems of integrated environmental and economic responsibility.

It is worth noting that the term green economy itself appeared as early as 1989 in a report prepared for the British government by a group of leading environmental economists (*Blueprint for a Green Economy*, Pearce, Markandya and Barbier, 1989) to justify the need for active economic participation in the implementation of government environmental policy. This concept is determined by the need to address a number of key global problems, such as climate change, depletion of the ozone layer, depletion of tropical forests, resource depletion in developing countries, etc. Further, in the context of the search for an effective response to the 2008 global crisis, the term green economy acquired its "second life" when the so-called "green stimulus packages" were developed within the relevant UN structures and specific areas of development were identified, the direction of public funds into which should help revive economic growth. Although there is still no generally agreed definition of green economy, the most common interpretation proposed by the UN Environment Program (UNEP), where green economy is an economy that results in improved human well-being and social justice through significant reduction of environmental risks and addressing environmental problems. Another popular definition of green economy was proposed by the Green Economy Coalition, which unites non-governmental organizations, trade union representatives and other stakeholders conducting research in this field: green economy is a flexible economic system that provides the highest quality of life for everyone within the environmental limits of our planet.

In some places, the green economy is identified with the concept of sustainable development, while the unequivocal idea remains that the green economy is intended to contribute to the sustainable development of states in every possible way. Considering the green economy not as a state, but rather as a process of transformation and constant dynamic progress, its main task is to eliminate system imbalances and dysfunctions in the process of economic development, which should result in improving the well-being of the population and ensure equal access for all to the existing opportunities for self-realization. At the same time, it is essential to preserve the effective environmental and economic integrity of the population's livelihood in order to remain within the limits of limited planetary resources. Hence the basic conclusion - an economy cannot be green if it is not fair.

In order to appropriately flesh out political activism and market solutions for the transition to a green economy and ensure effective synergy between an equitable green economy and sustainable development, a number of principles have been developed that best facilitate this process. Among these principles are the following:

- the green economy must be clearly aligned with specific goals and objectives to address systemic imbalances and inefficiencies to provide the necessary foundation for equitable transformation and sustainable development;
- a green economy must create the necessary hierarchical system of institutions at all levels

with clearly defined roles and functions, which will allow them to actively promote and successfully implement the concept of a green economy;

- the definition of specific goals and objectives in the implementation of the concept of green economy provides an opportunity to mobilize the necessary resources (technological, financial, production) to ensure the success of this process;

- measures to implement the concept of green economy must be transparent and with the effective involvement of all stakeholders. The key players in this process should have clearly defined responsibilities and obligations, while all other participants should be provided with appropriate conditions both to ensure their contribution to the process and to enjoy the benefits derived from the implementation of the concept of green economy.

The vast majority of the literature on the green economy concentrates on microeconomic issues - externalities, taxes, emissions trading, subsidies, etc. At the same time, leading experts on green economy, such as Antonio Ocampo, Aaron Cosby and others note the need to consider macroeconomic factors, among which the following key factors stand out: ensuring the welfare of the population from generation to generation; assessing the effect of the introduction of environmental measures on aggregate demand and supply; structural changes in the process of economic growth; global measures to finance green economy initiatives. In the context of developing countries there are also the following problematic points and risks: the green economy should complement and promote sustainable development, and not replace it; a unique approach to the implementation of this concept should be applied to each individual country, the principle of one size fits all cannot be used; the existence of a potential risk of green protectionism; attempts to gain noncompetitive access to market under the guise of environmental protection; inefficient use and misuse of the environment.

In the context of ensuring the transition to a green economy in the region, another key aspect cannot be avoided - the use of renewable energy sources, which can be stimulated by the high price of hydrocarbons with two possible effects: a tax on hydrocarbons or a system of caps and exchanges. The high price of hydrocarbons, subsidies from conventional energy to renewable energy sources, and recognition of the co-benefits of renewable energy will encourage the rapid development of this type as a major source of electricity for urban and rural areas, and will provide a transition to cleaner and more efficient types of transportation.

A systematic approach to addressing the challenges associated with the need to transition to a green economy in the region was outlined in the Satoyama Initiative (Satoyama Initiative), introduced by the Ministry of the Environment of Japan and UN agencies in 2010. The key position of this initiative is the desire to realize the activity of societies in harmony with nature on the basis of ensuring a positive relationship between man and the environment. It includes comprehensive measures to promote biodiversity and human well-being by encouraging the conservation and sustainable use of natural resources in the context of human impact on the environment.

To achieve this goal, three key principles of the Satoyama Initiative were developed:

- Consolidating existing knowledge on maintaining biodiversity ecosystems and providing relevant values;

- integrating traditional conservation expertise with modern scientific developments to encourage innovation;

- exploring new forms of co-management systems.

In general, Japan's experience with its advanced technologies and innovative green initiatives can serve as a guide for regional efforts to ensure the transition to a green economy. Japan's declared position on achieving sustainable development is based on the following key positions: human safety should be the guiding principle; effective use of Japanese technology and know-how to transition to a green economy and develop disaster-resilient societies; based on the experience of the Great East Japan Earthquake, Japan will lead the overall effort to reduce disaster risks through international cooperation to achieve sustainable

In order to ensure systematic measures for the development of a green economy in Japan, ten points of recommendations have been developed:

- In agriculture and food processing:

1. the need to significantly increase self-sufficiency in food in order to ensure an adequate living foundation in the country;

2. the promotion of the consumption of locally produced food and the adoption of the kind of food selection behavior that will be most appropriate to the local climate and environment;

3. the need to re-evaluate the importance of agriculture and to develop a system where the younger generation can easily find stable jobs in the agro-industrial sector;

- In terms of labor relations:

4. the need to organize labor in a way that not only focuses on personal income, but also on the well-being of family, neighbors, community, and future generations;

5. the need to recognize the existence of different types of work and to provide a fair system of performance evaluation, including decent social recognition;

6. the provision of work opportunities in such a way that both women and men have all the necessary opportunities to raise children without unnecessary inconvenience;

- In terms of purchasing power:

7. it is important to behave as a wise consumer, knowing that any purchase invariably affects both the global environment and life within one's local community;

8. the need to respect traditional culture and characteristics along with encouraging the development of the local economy;

- In terms of good governance and implementation of appropriate economic instruments:

9. the introduction of appropriate regulatory measures based on the "precautionary principle", as well as appropriate acts to combat CO<sub>2</sub> emissions from both stationary and mobile pollution sources;

10. the need to use effective economic instruments, such as taxes, emissions trading, etc. as important elements of development in the context of global environmental protection.

For greater clarity of the resulting effect of the transition to a green economy in Japan a comparative table is proposed (Table 1).



**Table 1.** The resulting effect of the transition to a green economy

Modern economy	Green (sustainable) economy
<ul style="list-style-type: none"> <li>- Little emphasis on different kinds of life;</li> <li>- destruction of the environment;</li> <li>- destruction of ecosystems;</li> <li>- destruction of culture;</li> <li>- Money is the key value;</li> <li>- money as the purpose of life;</li> <li>- ever-increasing desires;</li> <li>- greed and desire for comfort;</li> <li>- inequality;</li> <li>- treating people as "elements of the big machine";</li> <li>- competition, efficiency and dependence;</li> <li>- acceptance of the possibility of solving a problem through violent measures;</li> <li>- armaments industry;</li> <li>- increasing scale and globalization;</li> <li>- centralization and monopolization;</li> <li>- weak social support;</li> <li>- work as a necessary responsibility;</li> <li>- lack of a clear purpose in life</li> </ul>	<ul style="list-style-type: none"> <li>- Respect for life in all its forms;</li> <li>- protection of the environment;</li> <li>- preservation of ecosystems;</li> <li>- preservation and creation of cultural traditions;</li> <li>- emphasis on humanity;</li> <li>- money only as a means of social being;</li> <li>- restraint of desire;</li> <li>- benefiting ourselves as well as others;</li> <li>- equality of all people and both genders;</li> <li>- respect for individual uniqueness and difference;</li> <li>- respect for voluntary choice and independence;</li> <li>- peaceful coexistence, non-violent methods, avoidance of war;</li> <li>- industry of peace;</li> <li>- remaining within the limits of one's capabilities;</li> <li>- decentralization of functions and power;</li> <li>- improved social support;</li> <li>- working with pleasure;</li> <li>- living with a clear purpose</li> </ul>

*Source: systematized by the authors*

In general, it should be noted that the complexity of the process of global environmental protection and climate change issues against the background of resource flows across borders makes negotiating global environmental agreements quite difficult. Although the Japanese-initiated Kyoto Protocol to limit carbon emissions has attracted more than 180 countries around the world, the negotiation process remains quite stressful. Developing countries feel the need for rapid development, believing that it is time for them to enjoy high growth rates, as developed countries have done for the past two centuries. Indeed, if the population for a long time lived in poverty and in the absence of basic civilized conditions, then given the opportunity to reach a global level of "generally recognized well-being", it is very difficult to limit itself because of the need to severely reduce the amount of environmental pollution.

The main strategic document of the state policy of Ukraine in the environmental sphere is the Main principles (strategy) of the state environmental policy of Ukraine for the period up to 2030, approved by the Law of Ukraine from 28.02.2019. The current Strategy to 2030 sets the goal of the national environmental policy, which is, in particular, to achieve a good state of the environment by implementing an ecosystem approach to all areas of socio-economic development of Ukraine in order to ensure the constitutional right of every citizen of Ukraine to a clean and safe environment, implementation of balanced environmental management and conservation and restoration of natural ecosystems. Increasing the use of energy from renewable sources and alternative fuels is considered an

important part of Ukraine's strategy to preserve traditional fuel and energy resources and reduce the negative impact on the environment associated with them (State of Policy of Ukraine the Period until 2030, 2019).

Russia's armed aggression against Ukraine causes significant damage to the ecology of the country and the world. At the same time, any military conflict has no local character when it comes to the environment. If the natural balance is destroyed in one geolocation, it will definitely be felt in another. From shelled chemical plants to burned out forests - the consequences will be felt not only by the ecosystems of Ukraine, but also by millions of Europeans. No one can predict the scale of environmental consequences after such a war as in Ukraine. Now it is possible only to assess, to record the facts, only inside the country, the consequences for everyone do not come immediately, but they are definitely for everyone - for the world. The explosions of shells, bombs, missiles cause a significant release of not only hazardous substances, but also heat, which in turn transfers this heat to the atmosphere.

It is hardly possible today to estimate this amount of heat that escaped into the Earth's atmosphere, but it is definitely not only about us, it is also about Africa, Antarctica, the EU - the whole planet. In addition, during the detonation of shells, a number of chemical compounds are formed: carbon monoxide, carbon dioxide, brown gas, nitrous oxide, nitrogen dioxide, formaldehyde, cyanide vapors, nitrogen, as well as a large amount of toxic organic matter, oxidizing the surrounding soils. Europe is losing its most valuable resource - fertile soils and water, which, in the context of global overpopulation, poses an even greater potential threat in the future.

Organizational and legal mechanism of state support and stimulation of environmental entrepreneurship, sectors of "green economy" consists of a number of regulatory and legal acts. The Law of Ukraine "On Alternative Energy Sources" plays an important role in the regulatory framework, which defines legal, economic, environmental and organizational basis for the use of alternative energy sources and promotes their use in the fuel and energy complex (On Alternative Energy Sources, 2003). According to this law, the main principles of state policy in the sphere of alternative energy sources are increasing the production and consumption of energy produced from alternative sources, environmental safety by reducing negative effects on the environment, the safety for human health, scientific and technical support for the development of alternative energy, and attracting domestic and foreign investment, supporting businesses in the sphere of alternative energy.

Law of Ukraine "On Alternative Fuels" defines legal, social, economic, environmental and organizational basis for production and use of alternative fuels, and stimulating increase of their use up to 20% of total fuel consumption in Ukraine. This legal act clearly defines such key terms as alternative sources, biofuels, unconventional sources and types of energy raw materials and others.

International and European experience in implementing stimulating mechanisms for the development of a "green economy" shows the use by governments of a number of fiscal, financial instruments, such as: green tariffs, CO<sub>2</sub> tax, environmental taxes, green bonds, etc.

The development of renewable energy is directly related to the use of a green tariff. The first definition of this term in the legislation appeared in Art. 1 of the Law of Ukraine "On Alternative Energy Sources" of February 20, 2003. Green tariff is a special price at which

energy produced from renewable energy sources - hydropower plants, solar, wind or biostations - is purchased. This means that companies and households that produce electricity at a green tariff sell it on the market significantly more expensive than traditional producers of thermal or nuclear energy. Production incentives with the "green" tariff apply to almost all renewable energy sources (with the exception of electricity produced by large hydroelectric power plants).

On July 21, 2020 Ukrainian parliament adopted draft law No. 3658 "On Amendments to Certain Laws of Ukraine on Improving Support Conditions for Electricity Production from Alternative Energy Sources". The law provides for a reduction in the amount of green tariffs for facilities commissioned for solar and wind energy through the establishment of reduction factors. In addition, the state has pledged to cover 20 % of "green" tariff costs from the state budget. Also, during consideration of the bill, an amendment was adopted to reduce the "green" tariff by 60% for solar power plants with capacity from 1 to 75 MW, commissioned from April 1, 2021.

Environmental taxes in the modern world are becoming an important economic instrument of environmental regulation, which developed countries use to encourage people, businesses and organizations to reduce the amount of pollution they generate, rationally use natural resources and accumulate funds in the form of tax revenues to finance programs to improve the environment.

Pollution taxes are taxes on emissions of pollutants into the atmosphere, discharges of pollutants into water bodies, noise impact, payments for activities related to solid waste management. This group of taxes is among the traditional taxes (tax on economic activities that generate negative side effects). The purpose of environmental taxation is to reduce the volume of emissions into the environment and to ensure the mobilization of funds into budgets of different levels and their channeling to environmental protection and rational use of natural resources.

The main budgetary source of funding for environmental protection at present in Ukraine is the environmental tax, a mandatory payment paid from the actual volume of various emissions, discharges, waste disposal in the environment.

For the development of green economy in Ukraine it is necessary to create a reliable source of financing the environmental activities and to stimulate the introduction of resource-saving and environmentally friendly technologies in production, it is necessary to improve the current system of environmental taxation through the introduction:

- preferential taxation for enterprises that reduce emissions, discharges and waste disposal;
- Taxation of environmentally harmful products (e.g., fertilizers, electric and electronic equipment);
- taxation of harmful effects of physical and biological factors on the environment and humans (noise, electromagnetic radiation);
- penalties for environmental offenses; gradual approximation of environmental tax rates in Ukraine to those in Europe, which will meet the requirements of the Association Agreement between Ukraine and the EU;
- Fixing in the Budget Code of Ukraine the requirement of targeted use of revenues from environmental taxes exclusively for environmental purposes.

However, all efforts until 2022 to develop alternative energy can be completely leveled due to the war and the destruction of these renewable energy sources. Ukraine today is an

"ideal" platform to start forming an international coalition to preserve peace, climate and environment for the sake of life. The basis of the future post-war reconstruction strategy is green or sustainable recovery, that is, one that does not harm people, nature and climate. This is extremely important, as compliance with environmental standards is part of the European Union's requirements for Ukraine as part of our country's integration course into the EU. Full-fledged development on the basis of sustainable development and taking into account the European green course.

Ukraine faces large-scale and important tasks: restoration of critical infrastructure, ensuring energy security of the country, accelerated implementation of EU legislation on climate change and adaptation, etc. In addition, the development of a green economy in Ukraine is the basis of the Association Agreement with the EU.

Modernizing the Ukrainian economy and infrastructure in a way that supports and develops natural ecosystems rather than depleting them will create many benefits for the Ukrainian economy and society. In particular, it will strengthen the country's security while reducing dependence on fossil fuel imports, accelerate economic development and help create jobs, and reduce pollution, which will be beneficial for public health.

#### **4. Conclusions**

The green economy is based on alternative sources of energy and fuel, cleaner production technologies, clean technologies in agriculture, "green" construction, as well as programs for cleaning the air, water and soil from pollution, recycling and waste disposal, etc. "Green" economy, which strengthens the interconnection of environmental and economic interests, is the direction of achieving sustainable ecological and economic development. The main features of the "green economy" are: recognition of the value of natural capital as a source of well-being of society; the need to invest in natural capital; reducing inequality and overcoming poverty; creating jobs and ensuring social justice; the use of renewable energy sources and technologies with reduced carbon emissions; efficient consumption of resources and energy; creation of sustainable cities using "green" technologies.

Of primary importance for the establishment of a "green" economy in Ukraine is the justification of measures to address economic, ideological, educational and legal problems and the introduction of organizational factors of state support for the transformation of the economy at the national, sectoral and regional levels. Ukraine's post-war recovery plan should be future-oriented. This means that all investments should promote transformation and carry clear requirements for sustainable development, conservation and careful management of natural resources. In Ukraine, to ensure sustainable development and implementation of the concept of green economy it is necessary to further improve the legal, organizational and financial mechanisms to stimulate green investments in promising, environmentally friendly sectors of the economy, as well as to adapt the progressive world experience in this area. The development of a green economy in Ukraine will be facilitated by the introduction of effective financial instruments, such as: green bonds, green lending, the creation of funds to finance green projects, the optimization of green tariffs. Ukraine's ambitious green recovery model requires not only the support of international partners, but also, in fact, a change in their vision of Ukraine's role and place

in the future European and global economy and trade. Ukraine should be seen as part of the future green (climate neutral) economy, the economy of the future of developed countries.

## References

- Borovik, Y.T., Elagin, Y.V., & Polyakova, E.N. (2020). Green Economy: Essence, Principles, Prospects for Ukraine. *Herald of the Economy of Transport and Industry*, 69, 75-83. <https://doi.org/10.18664/338.47:338.45.v0i69.200551>. Accessed 11/07/2022.
- Dogaru, L. (2020). Green Economy and Green Growth – Opportunities for Sustainable Development. *Proceedings*, 63(1), 70. <https://doi.org/10.3390/proceedings2020063070>. Accessed 12/07/2022.
- Enabling the Transition to a Green Economy: Government and business working together (2011). HM Government, London, UK. Retrieved from: <https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=187&menu=1515>. Accessed 23/07/2022.
- From Green Economies to Green Societies. UNESCO (2012). Retrieved from: <https://unesdoc.unesco.org/ark:/48223/pf0000213311>. Accessed 16/07/2022.
- German Sustainable Development Strategy (2021). Germany. Retrieved from: <https://www.bundesregierung.de/resource/blob/974430/1940716/1c63c8739d10011eb116fda1aecb61ca/german-sustainable-development-strategy-en-data.pdf?download=1>. Accessed 24/07/2022.
- Halushkina, T.P., Musina, L.O., & Khumarova, N.I. (2012). National policy of «green» growth in Ukraine. Odesa.
- Jenkins, T., & Simms, A. (2012). The Green Economy. The global transition 2012. Stakeholder Forum. Retrieved from: [https://stakeholderforum.org/wp-content/uploads/2020/06/PAPER-1\\_Green-Economy\\_Final\\_vi.pdf](https://stakeholderforum.org/wp-content/uploads/2020/06/PAPER-1_Green-Economy_Final_vi.pdf). Accessed 15/07/2022.
- Kaletnik, G., & Lutkovska, S. (2020). Strategic Priorities of the System Modernization Environmental Safety under Sustainable Development. *Journal of Environmental Management and Tourism*, XI, 5(45), 1124-1131. [https://doi.org/10.14505//jemt.v11.5\(45\).10](https://doi.org/10.14505//jemt.v11.5(45).10). Accessed 25/07/2022.
- Kaletnik, G., & Lutkovska, S. (2020). Innovative Environmental Strategy Sustainable Development. *European Journal of Sustainable Development*, 9 (2), 89-98. <https://doi.org/10.14207/ejsd.2020.v9n2p89>. Accessed 18/07/2022.
- Kvach, Ya.P., Firsova, K.V., & Borisov, O.H. (2015). Green economy: opportunities for Ukraine. *Global and National Problems of Economy*, 6, 52-56.
- Lavrinenko, O., Ignatjeva, S., Ohotina, A., Rybalkin, O., & Lazdans, D. (2019). The Role of Green Economy in Sustainable Development (Case Study: The EU States). *Journal of Entrepreneurship and Sustainability*, 6(3), 1113-1126. [https://doi.org/10.9770/jesi.2019.6.3\(4\)](https://doi.org/10.9770/jesi.2019.6.3(4)). Accessed 24/07/2022.
- Loiseau, E., Saikku, L., Antikainen, R., Droste, N., Hansjürgens, B., Pitkänen, K., Leskinen, P., Kuikman, P., & Thomsen, M. (2016). Green economy and related concepts: An overview. *Journal of Cleaner Production*, 139, 361-371. <https://doi.org/10.1016/j.jclepro.2016.08.024>. Accessed 07/07/2022.
- Miroshnychenko, V., & Tyorlo, V. (2018). Problems of making the “green” economy in Ukraine. *Scientific Notes of NaUKMA*, 1(3), 83-88. <https://doi.org/10.18523/2519-4739312018150622>. Accessed 08/07/2022.
- National Sustainable Development Strategy: Towards a Green & Fair Economy (2010). Republic Francaise. Retrieved from: <https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=680&menu=1515>. Accessed 29/07/2022.
- On Alternative Energy Sources (2003). Law of Ukraine. The Official Bulletin of the Verkhovna Rada of Ukraine, 2003, No. 24, Article 155. Retrieved from: <https://zakon.rada.gov.ua/laws/show/555-15?lang=en#Text>. Accessed 18/07/2022.
- On the Key Principles (Strategy) of the State Environmental Policy of Ukraine for the Period till 2030 (2019). Law of Ukraine. The Official Bulletin of the Verkhovna Rada of Ukraine (BVR), 2019, No. 16, Article 70. Retrieved from: <https://zakon.rada.gov.ua/laws/show/en/2697-19#Text>. Accessed 19/07/2022.

- Pravdiuk, N., Bondarenko, V., Pokynchereda, V., & Timchenko, O. (2021). Quality of Financial Reporting of the Enterprise: Evaluation Methodology. *European Journal of Sustainable Development*, 10(2), 113. <https://doi.org/10.14207/ejsd.2021.v10n2p113>. Accessed 12/07/2022.
- Riphahn, G.T., & Schmidt, K.M. (2022). Nachhaltigkeit in Wirtschaft und Gesellschaft. *Wirtschaftsdienst*, 102, 328-330. <https://doi.org/10.1007/s10273-022-3181-9>. Accessed 11/07/2022.
- Söderholm, P. (2020). The green economy transition: the challenges of technological change for sustainability. *Sustainable Earth*, 3(6), 1-11. <https://doi.org/10.1186/s42055-020-00029-y>. Accessed 10/07/2022.
- The Green Economy: Trade and Sustainable Development Implications (2011). United Nations Conference on Trade and Development. United Nations. New York and Geneva. Retrieved from: [https://unctad.org/system/files/official-document/ditcted2011d5\\_en.pdf](https://unctad.org/system/files/official-document/ditcted2011d5_en.pdf). Accessed 20/07/2022.
- Tschannen, A., Walker, D., Kammerhofer, A.W., Richter, K., & Sinabell, F. (2021). Strategien zur Bioökonomie in Deutschland, Österreich und der Schweiz. *Schweizerische Zeitschrift für Forstwesen*, 172(1), 25-31. <https://doi.org/10.3188/szf.2021.0025>. Accessed 05/07/2022.
- Tucci, F., & Battisti, A. (2020). Green Economy for Sustainable and Adaptive Architectures and Cities: Objectives, Guidelines, Measures, Actions. *IOP Conference Series: Earth and Environmental Science*, 503, 1-9. <https://doi.org/10.1088/1755-1315/503/1/012022>. Accessed 12/07/2022.
- Ukrainian Sustainable Development Strategy - 2030 (2021). Ukraine. Retrieved from: [http://nbuviap.gov.ua/images/praktuka\\_susp\\_peretvoren/2021/20.pdf](http://nbuviap.gov.ua/images/praktuka_susp_peretvoren/2021/20.pdf). Accessed 25/07/2022.
- Zhang, L., Xu, M., Chen, H., Li, Y., & Chen, S. (2022). Globalization, Green Economy and Environmental Challenges: State of the Art Review for Practical Implications. *Frontiers in Environmental Science*, 10, 1-9. <https://doi.org/10.3389/fenvs.2022.870271>. Accessed 16/07/2022.