

M. Sirant¹,
orcid.org/0000-0002-9393-2397,
L. Yarmol¹,
orcid.org/0000-0001-8465-8579,
O. Baik¹,
orcid.org/0000-0003-4819-7722,
I. Andrusiak¹,
orcid.org/0000-0001-6887-0510,
N. Stetsyuk²,
orcid.org/0000-0002-9079-5868

1 – Lviv Polytechnic National University, Lviv, Ukraine,
e-mail: myroslava.m.sirant@lpnu.ua
2 – Lviv State University of Internal Affairs, Lviv, Ukraine

STATE POLICY OF UKRAINE IN THE SPHERE OF ENVIRONMENTAL PROTECTION IN THE CONTEXT OF EUROPEAN INTEGRATION

Purpose. To develop a systematic approach to implementation of effective state environmental and economic policy of Ukraine and develop regulatory measures to implement environmental protection policy.

Methodology. The methods used are: scientific observation – to form topic, purpose, objectives of the study; systematic approach – to analyze EU's environmental principles and structure of environmental management bodies; analysis/synthesis – to compare effectiveness of environmental policy structures; scientific abstraction – to develop the structural implementation of the state environmental policy; logical analysis – to predict consequences of management actions; induction/deduction – for the analysis of intensity energy supply/consumption, development of management actions increasing energy efficiency; quantitative/qualitative comparison – for the analysis of regulatory/legislative support for regulation of man-made environmental impact.

Findings. The analysis of the state and supranational ecological policy is carried out, the efficiency of the ways of implementation of environmental protection principles is determined. The structure of the state ecological policy, which will allow increasing efficiency of decision-making on environmental protection, is developed. It is established that the state environmental policy should be comprehensive because its emergence will affect its effectiveness. Regulatory measures of ecological and economic policy in the legislative, normative and legal spheres are offered.

Originality. A structural approach to environmental policy implementation is proposed, which is used for analysis in relation to the energy sector. An ecological and economic indicator of efficiency of ecological policy – expenses of primary energy on unit of GDP – is offered. The forecast of energy intensity of GDP for 2022 is developed. It is established that slowing down the rate of energy reduction requires strengthening regulatory measures.

Practical value. The structure of environmental policy implementation can be used for systemic public administration reform. Forecasting the energy intensity of GDP and slowing down the rate of energy reduction can be used to develop regulatory measures, as energy largely determines the environmental/economic indicators in related industries.

Keywords: *public administration, environmental protection, legislative uncertainty, management system, European criteria*

Introduction. The situation with environmental protection in Ukraine during the Soviet period was shaped by the crisis. Ukraine was declared a zone of environmental disaster in 1990, but no effective public policy aimed at long-term strategic improvement has been implemented since then. The consequences of this are still being felt.

With the proclamation of independence and the beginning of the rule of law, the task arose to correct the crisis in the field of environmental protection through the use of legal mechanisms. The adopted Constitution of Ukraine emphasizes the right of citizens to a safe environment (Article 50). It should be noted that the Constitution of most EU countries does not provide for such a right, despite the relevant UN decisions. Due to this, the very paradigm of public administration in this area has changed – environmental management has ceased to be based on funding on a final basis, environmental protection – is seen as the antithesis of economic policy. Environmental management has begun to be implemented as an integral part of the economy and one of the areas of sustainable development economy.

The signing of the Association Agreement with the EU gave a significant impetus in this direction. In addition, Ukraine undertook additional commitments under international agreements on environmental policy and the implementation of measures aimed at achieving the goals of sustainable development, in particular, the UN Millennium Declaration; Implementation Plan of the UN World Summit on Sustainable Development; the OSCE Strategy for the Economic and Environmental Dimension, adopted at the Eleventh Meeting of the OSCE Ministerial Council in 2003, and others.

All these changes require a restructuring of Ukraine's institutional structures and approaches to the formation of a system of effective public policy. The situation with the implementation of environmental policy in Ukraine is significantly complicated by the fact that, in contrast to EU countries, where there is a synergistic strengthening of two vectors of environmental management measures: on the one hand, national and regional government structures, on the other – EU supranational structures, Ukrainian public environmental management relies solely on national governments and national financial resources.

Literature review. Issues of Ukraine's state policy in the field of environmental protection in the context of European integration have been studied by many scholars. Thus, Tishkova [1] conducted a comprehensive analysis of the situation and identified factors that hinder effective public administration of environmental protection. Bomchak [2] analyzed EU regulations and EU-Ukraine agreements on environmental protection. Sirant [3] analyzed the doctrinal approach to the definition of environmental damage in the EU and Ukraine [4]. Artemenko [5] studied the legal interpretation of the concept of environmental information in the context of Ukraine's European integration. The article by Holovko [6] examines the socio-legal essence of legal forms of environmental protection in Ukraine. Yermolenko, et al. [7] conducted a legal analysis of the implementation of EU environmental accounting standards in Ukraine as a means of determining the effectiveness of achieving sustainable development. These issues in the context of the EU legal field are detailed by Jones [7]. Kalinichenko, et al. [8] studied the legislation of Ukraine on environmental protection and the problems of its harmonization

with EU legislation. Yara, et al. [9] analyzed the development trends and peculiarities of harmonization of Ukrainian legislation with the EU Water Framework Directive (WFD). Karpinska [10] analyzes the systems of institutions and legal aspects of their activities in Ukraine and the EU. Yatsenko, et al. [11] studied the problematic issues of adaptation of Ukrainian legislation on climate change prevention to the EU *acquis communautaire*. Koval, et al. [12] studied the process of adaptation of environmental legislation of Ukraine to EU legislation. Lukomska, et al. [13] analyzed the trends of relations in the field of “man – environment”. Shokha, et al. [14] proposed criteria for the effectiveness of environmental policy. Tkachenko, et al. [15] studied environmental insurance as a tool for sustainable development. Kyriakopoulos [16] studied the social aspects of EU environmental and economic policy. These issues are detailed in Hojnik [17] and Wurzel, et al. [18].

Unsolved aspects of the problem. The analysis of scientific works indicates the need to study the difference between the structure of state and supranational environmental and economic policy of the EU and Ukraine; development of a structural approach to the implementation of state environmental and economic policy. Existing obstacles to the implementation of integrated systemic public administration in the field of economic and environmental policy and the development of proposals to overcome them also need to be analyzed.

Purpose. Based on a comparative analysis of environmental management institutions in the EU and Ukraine, to develop a systematic structural approach to the implementation of effective state environmental and economic policy of Ukraine and, using it, to develop regulatory measures for the implementation of state environmental policy.

Methods. A set of general and special methods of cognition was used to perform the work. Methods of scientific observation and comparison are involved in formulating the relevance of the topic, purpose and objectives of the study. The method of systematic approach is applied to the analysis of the basic principles of the EU on environmental protection and the structure of the EU environmental management bodies. Methods of analysis and synthesis, induction and deduction allowed comparing the effectiveness of existing structures of state and supranational environmental and economic policy. The method of scientific abstraction was introduced to develop a structural approach to the implementation of state environmental and economic policy. The method of logical analysis is used in the systematic forecasting of the consequences of the implementation of management options. Methods of induction and deduction are involved in a comprehensive analysis of energy intensity for energy supply and consumption and the development of proposals for management actions to enhance energy efficiency in industry. The method of quantitative and qualitative comparison is involved in the analysis of the state of regulatory and legislative support for the regulation of man-made environmental impacts.

Results. According to the Environmental Performance Index 2020, Ukraine ranks 60th out of 180 countries in terms of environmental efficiency of public policy. The country ranks much lower in terms of air quality, water resources, biodiversity conservation and ecosystems. At the same time, Ukraine’s participation in combating climate change was positively assessed – in this area Ukraine ranks 26th in the ranking. According to the analysis, such a difference in the Environmental Performance Index is not so much evidence of public administration efficiency in this area, but due to reduced energy and material consumption due to reduced industrial production caused by structural changes and, in general, the crisis state of the economy.

The state policy of Ukraine in the field of environmental protection has a multilateral nature of regulatory influence: regulatory, legislative, legal, environmental and economic, and others. This impact has a complex systemic nature, which should be taken into account when formulating public policy

on environmental protection. Problems and shortcomings in one area will affect the environment as a whole.

In particular, the study found that today the state of implementation of European norms in the regulatory field of Ukraine, which relates to the protection of the environment and human health from man-made impact, is complicated by the fact that legal and state institutions rely on inconsistent legislation norms which are scattered across various branches of law. These legal norms are available in constitutional, civil, criminal, administrative legislation, legislation on health care, nature protection, rational use of natural resources, and so on. Complicating the situation is the fact that the norms of Ukrainian environmental legislation must be harmonized with the provisions of international conventions and agreements ratified by Ukrainian state bodies. Their implementation in practice is complicated by differences in interpretation, competition from the norms of legislative acts, which, on this basis, require further comprehensive legal harmonization. The situation is complicated by the fact that the number of legal acts in the field of environmental protection is constantly growing. And, in this case, quantity does not grow into quality, but leads to new legal conflicts.

The consequence of this is that the effectiveness of the regulation of environmental relations; industrial and household waste management; ensuring the health of the population from environmental hazards; rational and efficient use of natural resources remains low.

The analysis of EU environmental legislation indicates that the result of institutionalizing the right of citizens to a favorable environment has a long lag in time and, for its sustainable operation, it should be based on a regulatory framework focused mainly on environmental legislation. Institutional bases of administrative and legal regulation of environmental protection should be based on: legally established basic principles in this area; unambiguous definition of the subjects of legal relations, in particular the subjects of judicial and legal influence, which have the authority to introduce regulatory and legal measures to ensure the right of citizens to a safe environment.

The introduction of a systematic approach to the analysis of basic EU principles in the field of environmental protection (Table 1) and the structure of EU environmental management bodies (Fig. 1) allowed comparing the effectiveness of state and, in the case of EU, supranational environmental and economic policy in the EU.

Table 1

Basic principles of the EU in the field of environmental Protection

No.	Name	Essence
1	The concept of sustainable development	The use of available resources must not harm natural systems and the environment
2	The principle of reasonable regulatory action	Achieving the goal under balanced public administration
3	The principle of stability	Maximum productivity of production resources should give way to regulatory action to increase environmental sustainability
4	The principle of subsidiarity	Limiting the level of intervention, with the result that senior management should make decisions only when lower institutional levels have ineffective policies or conflicts of interest
5	The principle of implementation of the green economy	Increasing the well-being of citizens while reducing the burden on the environment

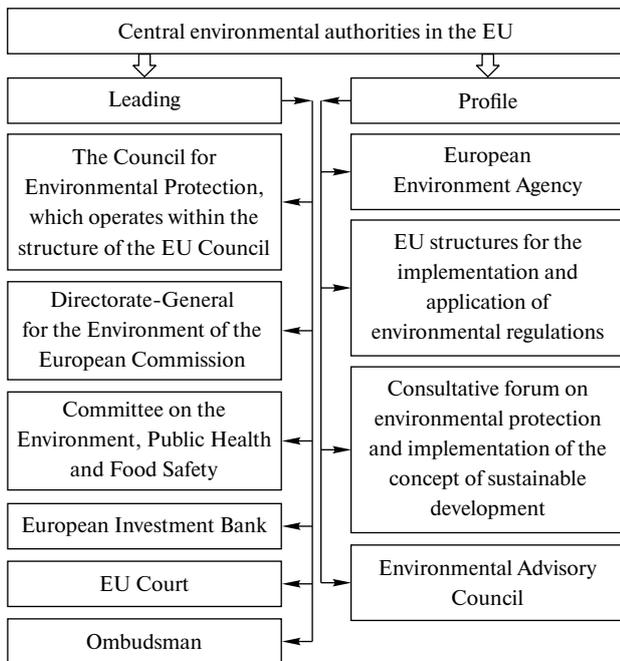


Fig. 1. The structure of the environmental management bodies of the European Union

Even a cursory comparative analysis of the time-tested structure of the European Union's and Ukraine's environmental management bodies points to their incompatibility. Ukrainian realities are characterized by some eclecticism of this structure and the lack of appropriate mechanisms for coordination of actions and cooperation between the individual elements of the structure of environmental management bodies. This creates negative consequences of management actions, causes a lack of systematic and consistent nature.

Based on the analysis, the structure of the implementation of state environmental policy in Ukraine was developed (Fig. 2). This structure of the implementation of state environmental policy in Ukraine will increase the efficiency of decision-making on a range of environmental and economic issues with proper protection against legal and regulatory conflicts. Since the developed structure has a system-wide nature for its testing, it is proposed to apply this structure to one industry, taking into account such properties of the system as emergence and integrity.

It was decided to test the possibility of implementing the proposed structure of state environmental policy (Fig. 2) in the energy sector. This is, in particular, due to the fact that the energy industry in both the EU and Ukraine is characterized by significant indicators of environmental impact on the environment. However, not only inefficient production, but also wasteful use of energy in related industries also increases the irrational burden on the environment. As a result, inefficient energy management leads to a lack of investment in modernization and renewal of the industry, which in turn results in accelerated demolition of energy facilities and energy distribution infrastructure. Depreciation of energy infrastructure affects the overall economic and environmental performance of the country. Systemic accidents in energy production, energy supply, in particular coal, and catastrophes in energy-consuming industries due to uneven energy supply are inevitable.

The situation is aggravated by the lack of effective systemic influence of regulatory structures, proper involvement of legal institutions. All this leads to the multiplicative nature of the strengthening of man-made impact on the environment. Outdated technologies that encourage the irrational use of energy in all industries, especially the extractive industry, have the effect of increasing the level of non-competitiveness of products,

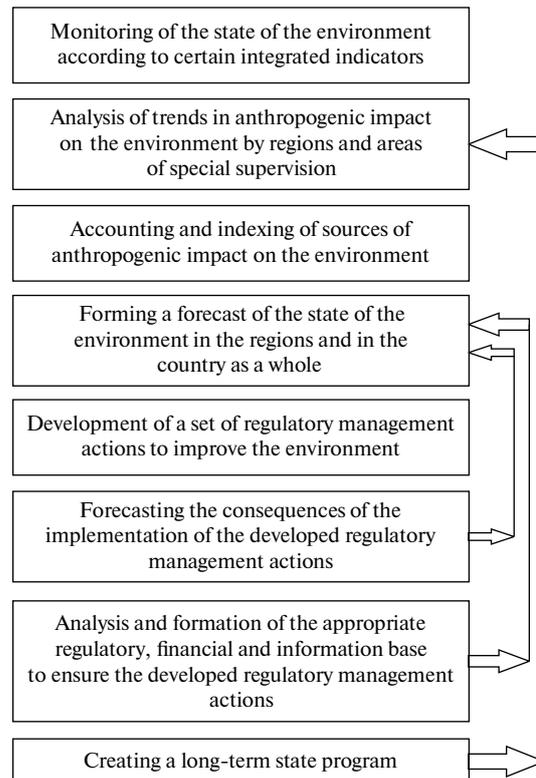


Fig. 2. The structure of the implementation of state environmental policy

Table 2

Energy intensity, in terms of total primary energy supply and final consumption, tons of oil equivalent/thousand international dollars

No.	Year	Energy consumption	
		According to the total supply of primary energy	By final energy consumption
1	2007	0.144	0.234
2	2008	0.136	0.220
3	2009	0.13	0.220
4	2010	0.137	0.245
5	2011	0.133	0.222
6	2012	0.128	0.214
7	2013	0.122	0.203
8	2014	0.115	0.198
9	2015	0.106	0.187
10	2016	0.105	0.192
11	2017	0.099	0.177
12	2018	0.099	0.179
13	2019	0.092	0.166
14	2020	0.093	0.157

reducing production, and, as a result, further deterioration of the country's economy and population.

We have chosen an indicator of energy intensity as an integrated indicator of the state of the environment, the monitoring of which is indicated by the first block in Fig. 2. Its dynamics, in terms of total primary energy supply and final consumption (Table 2) and the impact on the energy intensity of GDP (Fig. 3) are not only indicators of the state of implementation

of the Sustainable Development Goal No. 7 “Affordable and Clean Energy”, but also to some extent, is an indicator of the effectiveness of state environmental and economic policy of Ukraine. In addition, these indicators provide a clear comparison of the effectiveness of state environmental and economic policies of the EU and Ukraine. Ukraine is one of the leading countries in the world in terms of energy intensity of the economy. The energy intensity of the country’s GDP is about 3 times higher than the energy intensity of Poland’s GDP. At the same time, Ukraine, unlike many EU countries, still does not have state support for energy efficiency in industry. The formation of such systemic support is provided by effective structures of public administration and implementation of environmental policy.

The analysis indicates the structural imbalance of Ukraine’s economy because a significant part of the structure consists of resource-intensive and energy-intensive industries, such as concentrators of the mining industry. Therefore, the experience of EU countries, in particular, Germany, which gradually, starting with the energy efficiency program, moved in 2020 to the implementation of a comprehensive system program “Guidelines for Federal financing of energy efficiency in business – grants and loan”. This gradual transition has simplified and combined some tactics to stimulate the introduction of modern energy efficient technologies [19].

Effective state management of environmental protection is one of the conditions for attracting investment from the global capital market, which, in turn, will help increase the ability to ensure the constitutional right of citizens to a safe environment [20]. It includes, in particular, “Ensuring access to low-cost, reliable, sustainable and modern energy sources for all” (Sustainable Development Goal 7) and “Ensuring the transition to rational consumption and production models” (Goal 12).

According to the analysis of Table 2, we can see some positive trends in improving energy intensity in terms of total primary energy supply and final consumption and, at the same time, point to the volatile nature of these trends. This is clearly seen in the fragmentary, broken nature of the graphical representation of changes in energy intensity of GDP (Fig. 3). The reason for this is the unsystematic nature of management actions, complicated by the lack of comprehensive government support for energy efficiency in industry.

The analysis also revealed a negative impact on the effectiveness of environmental and economic policy: lack of systematic forecasting of the consequences of the implementation of management actions (which can be avoided by the proposed structure of state environmental policy); lack of proper level of harmonization of legislation in the field of environmental protection; standardized application of the harmonized legal system and application in practice of the principle of irreversibility of liability of citizens and enterprises for environmental degradation.

But, even under the influence of these negative factors, management actions and the introduction of environmental

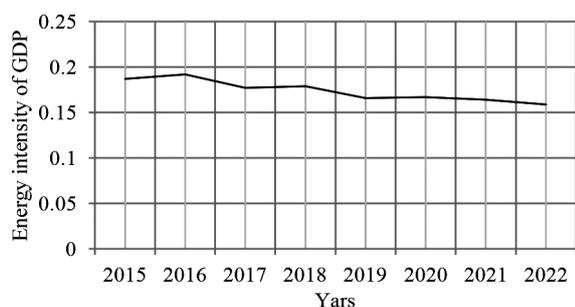


Fig. 3. Energy intensity of GDP (primary energy consumption per unit of GDP), kg of oil equivalent on the international dollar for Purchasing Power Parity 2011

and economic approaches to public administration leads to certain positive consequences that will be offset over time. This is evidenced by the results of the strategic forecast made by us using the method of time series (Fig. 3). According to this forecast, the rate of reduction of energy intensity of GDP will slow down, which requires the systematic implementation of comprehensive management measures in this direction.

At the same time, with the tendency to reduce the total cost of primary energy per unit of GDP (Fig. 3) in Ukraine under the influence of European integration processes, there occur structural changes. Until 2007–2010, the sectoral structure of GDP was dominated by processing and mining. However, after this period, the share of the services sector (as in the EU) began to grow at a faster pace. That is, the ecological and economic state policy in this direction began to give certain results. Acceleration of changes and their effectiveness will be significantly strengthened by a systemic structured public policy based on analysis and forecasting and will allow for comprehensive reforms in all areas – legal, legislative, administrative, and others.

Conclusions. It is proposed to continue reforming Ukraine’s environmental management bodies in accordance with the approved structure of EU governing bodies. For the formation of strategic state environmental and economic policy, the structure of its implementation is proposed, whose components, in particular, are a systematic forecasting of the consequences of the implementation of management options. As a concrete step in this direction, we consider the introduction of comprehensive state support for energy efficiency in industry.

It is proposed to strengthen the responsibility of administrative and legal nature in proportion to the environmental and economic damage involved. Due to the fact that the level of man-made pollution, the sources of which are in Ukraine, today poses a danger even to neighboring countries, and the situation with some sources of pollution, regions and industries is deteriorating, it is necessary:

1. To ensure the appropriate level of harmonization of legislation in the field of environmental protection, standardized application of the harmonized legal system and the practical application of the principle of irreversibility of liability of citizens and enterprises for environmental degradation.
2. To strengthen administrative and legal liability for non-compliance with the requirements of a single state body of environmental control.
3. To introduce modern methods for forecasting environmental damage by potential sources of pollution and increase the negative impact in the case of a group of such sources; use of modern technologies and methods for collecting evidence of environmental damage and determining its size.
4. Since the financing of the consequences of man-made pollution primarily falls on state and local budgets, to accelerate the adoption of legislation on environmental insurance of enterprises in combination with their certification, which will reduce both the level of risk and the cost of insurance.
5. To introduce consultative cooperation with the bodies of implementation of the EU environmental responsibility on a permanent basis.
6. As environmental disputes are still subject to different jurisdictions, to harmonize the legal framework and unify the judicial process in cases of environmental damage.

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Державна політика України у сфері охорони навколишнього природного середовища в контексті євроінтеграції

М. М. Сірант¹, Л. В. Ярмол¹, О. І. Байк¹,
І. П. Андрусак¹, Н. В. Стецюк²

1 – Національний університет «Львівська політехніка», м. Львів, Україна, e-mail: myroslava.m.sirant@lpnu.ua

2 – Львівський державний університет внутрішніх справ, м. Львів, Україна

Мета. Розробити системний підхід до реалізації ефективної державної еколого-економічної політики України й розробити регуляторні заходи впровадження політики захисту довкілля.

Методика. Використані методи: наукового спостереження – для формування теми, мети, завдань дослідження; системного підходу – для аналізу екологічних принципів ЄС і структури органів управління охороною довкілля; аналізу й синтезу – для порівняння ефективності структур екологічної політики; наукової абстракції – для розроблення структурної реалізації державної екологічної політики; логічного аналізу – для прогнозування наслідків управлінських дій; індукції й дедукції – для аналізу енергоємності постачання/споживання енергії, розробки управлінських дій посилення енергоефективності; кількісного та якісного порівняння – для аналізу нормативно-законодавчого забезпечення регулювання техногенного впливу на довкілля.

Результати. Проведено аналіз державної й наддержавної екологічної політики, визначена ефективність шляхів впровадження принципів захисту довкілля. Розроблена структура державної екологічної політики, що дозволить підвищити ефективність прийняття рішень з охорони довкілля. Установлено, що державна екологічна політика повинна мати комплексний характер бо її емерджентність впливатиме на її ефективність. Запропоновані регуляторні заходи еколого-економічної політики в законотворчій та нормативно-правовій сферах.

Наукова новизна. Запропоновано структурний підхід впровадження екологічної політики, що застосований для аналізу енергетичної галузі. Запропоновано еколого-економічний показник ефективності екологічної політики – витрати первинної енергії на одиницю ВВП. Розроблено прогноз енергоємності ВВП на 2022 рік. Установлено, що сповільнення темпів зниження енергоємності потребуватиме посилення регуляторних заходів.

Практична значимість. Структурний підхід до реалізації екологічної політики може використовуватися для системного реформування державного управління. Прогнозування енергоємності ВВП і сповільнення темпів зниження енергоємності може використовуватися для розробки регуляторних заходів, оскільки енергетика значною мірою визначає еколого-економічні показники в суміжних галузях.

Ключові слова: державне управління, охорона навколишнього середовища, законодавча невизначеність, система управління, європейські критерії

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