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CHAPTER 7. USE OF ALTERNATIVE ENERGY SOURCES IN INTERNATIONAL LEGAL PROCESSES

7.1. Global prerequisites of the energy transition

The modern world is engulfed by a number of complex crises, of which the climate crisis is of existential importance, and therefore the most threatening. The active search for ways to counter the rapidly approaching ecological catastrophe has led developed countries to realize that it is time to change the usual trajectory of human civilization development. Today, society is on the verge of fundamental changes in its usual way of life, and this did not happen unexpectedly. Over the course of several decades, two fundamental currents were formed in the doctrine, which completely oppositely portrays the exit of civilization from the climate crisis: the concept of green growth (green growth) and the concept of anti-growth (degrowth).

The discourse on *green growth* was initiated by international organizations, mainly the UN, the OECD and the World Bank. The concept of green growth was officially proposed during the Fifth Ministerial Conference on Environment and Development, held in March 2005 in Seoul, when 52 governments of Asia and the Pacific agreed to follow the "Green Growth" path [1]. Since then, green growth has been considered the most acceptable solution to stop the degradation of the natural environment [2]. In 2008, the UN Environment Green Economy Initiative was launched[3]. The EU followed this path at one time, because ten years ago in a number of program documents (Strategy "Europe 2020", Biodiversity Strategy to 2020, Roadmap to an energy-efficient Europe) the European Commission

[1] D'Souza R. Green growth: Ideology, political economy and the alternatives. *Strategic Analysis.* 2017. Vol. 41. P. 204–206.

[2] Sandberg M., Klockars K., Wilén K. Green growth or degrowth? Assing the normative justifications for environmental sustainability and economic growth through critical social theory. *Journal of Cleaner Production.* 2018. Vol. 206. P. 133–141; Loiseau, E., Saikku L., Antikainen R., Droste N., Hansjürgens B., Pitkanen K., Leskinen P., Kuikman P., Thomsen M. Green economy and related concepts: An overview. *Journal of Cleaner Production.* 2016. Vol. 139. R. 361–371.

[3] Ossewaarde M., Ossewaarde-Lowtoo R. The EU's Green Deal: A Third Alternative to Green Growth and Degrowth? *Sustainability.* 2020 Vol. 12. R. 9825.

presented its green growth strategy as a way to overcome the financial crisis with the help of green incentives , environmental policy and green innovations. The appeal of the idea of green growth is that environmental protection is seen as a high-return investment opportunity rather than a costly constraint[4]. Green growth strategies consist of the coordination of economic activity and environmental problems[5]. That is why the concept of green growth was very liked and actively accepted by the existing political institutions, since it did not require a change in the state system and political and economic structures, which are mostly strongly connected with "brown" production. The discourse of green growth is based on the belief that economic growth can be "decoupled" from violence against the natural environment, and that it is possible without excessive exploitation of natural resources[6]. These have not been confirmed in practice, as empirical scientific studies prove that economic development in the direction of increasing GDP and real income per capita inevitably leads to an increase in the consumption of energy and natural resources[7]. That is, the concept of green growth has demonstrated its inability to solve the deep crisis facing

[4] Loiseau, E., Saikku L., Antikainen R., Droste N., Hansjürgens B., Pitkanen K., Leskinen P., Kuikman P., Thomsen M. Green economy and related concepts: An overview. *Journal of Cleaner Production.* 2016. Vol. 139. R. 361–371; Bowen A., Frankhauser S. The green growth narrative: Paradigm shift or just spin? *Global Environmental Change.* 2011 . Vol. 21. R. 1157–1159; MacArthur JL , Hoicka CE , Castleden H. , Das R., Lieu J. Canada's Green New Deal: Forging the socio-political foundations of climate resilient infrastructure? *Energy Research & Social Science* . 2020. Vol. 65 . URL: https://www.sciencedirect.com/science/article/pii/ S2214629620300190 ?via%3Dihub (access date: 02/10/2021); Rosenbaum E. Green growth – Magic bullet or damp squib? *Sustainability.* 2017. Vol. 9. R. 1092; Vazquez-Brust D., Smith AM, Sarkis J. Managing the transition to critical green growth: The green growth state. *Futures.* 2014. Vol. 64. R. 38–50.

[5] Bowen A., Hepburn C. Green growth: An assment. *OxfordReview of Economic Policy*. 2014. Vol. 30. Issue 3. R. 407–422; Wanner T. The new "passive revolution" of the green economy and growth discourse: Maintaining the "sustainable development" of neoliberal capitalism. *New Political Economy.* 2015. Vol. 20. R. 21–41.

[6] Machin A. Changing the story? The discourse of ecological modernization in the European Union. *Environmental Politics.* 2019. Vol. 28. R. 208–227; Sandberg M., Klockars K., Wilén K. Green growth or degrowth? Assing the normative justifications for environmental sustainability and economic growth through critical social theory. *Journal of Cleaner Production.* 2018. Vol. 206. P. 133–141; Loiseau, E., Saikku L., Antikainen R., Droste N., Hansjürgens B., Pitkanen K., Leskinen P., Kuikman P., Thomsen M. Green economy and related concepts: An overview. *Journal of Cleaner Production.* 2016. Vol. 139. R. 361–371.

[7] Simionescu M., Pauna Carmen Beatrice, Diaconescu T. Renewable Energy and Economic Performance in the Context of the European Green Deal. *Energies.* 2020. Vol. 13. R. 6440.

humanity. Green capitalism can be compared to cosmetic repairs, while human activity on the planet requires capital repairs.

The antagonistic concept, the idea *of anti-growth (degrowth),* is much more radical, and therein lies the reason that it still remains untested. While the discourse on green growth assumes an economy that, developing upward, should become more ecological, the discourse on anti-growth questions the very model of growth and perceives it as ecologically irresponsible[8]. The main idea of this ideological trend is that without a deep correction of the chosen course, industrial societies will suffer more and more from growing environmental crises[9]. Apologists of the concept of degrowth call for abandoning the growth of the economy, from the current level of consumption – that is, their main idea is the need for a total reduction of human activity on the planet, a conscious reduction of the needs of humanity, the satisfaction of which pushes the economy to constantly increase production volumes. For example, a group of scientists calculated that " the growth of economic activity leads to an increase in emissions and at the same time cancels out the positive impact of green energy." These results prove the need for significant changes in legislation aimed at reducing emissions, as green energy alone is not enough to achieve this goal[10]. " There are interesting studies that support the thesis about the need to establish strict growth limits, without which greening initiatives will be completely ineffective and ineffective[11].

In our opinion, despite serious scientific arguments, the concept of anti-growth is known to be a loser and doomed to opposition. This is explained by the fact that, having adopted it, the government of any state will inevitably face: a) "Resistance from its own society (or at least part of it), because the implementation of the ideas of degrowth directly entails a decrease in the standard of living and comfort; b) business resistance, as artificial inhibition of economic development is perceived as hostile behavior. In today's world, which is imbued with ideas of competition, national protectionism, non-tariff barriers, trade ties, etc., retarding the

[8] Ossewaarde M., Ossewaarde-Lowtoo R. The EU's Green Deal: A Third Alternative to Green Growth and Degrowth? *Sustainability.* 2020 Vol. 12. R. 9825.

[9] Rowe JK The Green New Deal, Decolonization, and/as Ecocritique. *New Political Science.* 2020. Vol. 42. Issue 4. P. 624–630.

[10] Pilatowska M., Geise A., Wlodarczyk A. The Effect of Renewable and Nuclear Energy Consumption on Decoupling Economic Growth from CO2 Emissions in Spain. *Energies.* 2020. Vol. 13. Issue 9.

[11] Cox S. That green growth at the heart of the Green New Deal? It's malignant. *Counterpunch.* 2019. URL: https://www.counterpunch.org/2019/01/17/that-green-growth-at-the-heart-of-the-green-new-deal-its-malignant/ (access date: 12.02.2021)

development of a certain single country will be politically considered as treason. Of course, no political force will commit such suicide.

However, climate problems await their solution, and therefore a third alternative concept appeared, which was called *the Green Deal* (by analogy with Theodore Roosevelt's New Deal, which brought the USA out of the Great Depression of the 1930s). The main idea of the Green Deal is a large-scale structural restructuring of the economy on ecological grounds. In contrast to the concept of green growth, the Green Deal does not simply involve the introduction of innovative green technologies at enterprise – it involves a structural change and a complete renewal of the energy industry, significant quantitative changes in the management of agriculture and industry, the withdrawal of significant areas from economic use and their active afforestation and /or transformation into nature reserves. That is, the scale and depth of transformations proposed by the concept of the Green Deal are much greater than those proposed by its predecessor, the concept of green growth.

At the same time, it has some similar features to the ideological basis of the concept of degrowth – they can be traced in strict limits on emissions, the prospective cessation of the use of fossil fuels, etc. However, there are two fundamental differences between the Green Deal and degrowth concepts:

1) *social* – an integral component of the Green Deal is not only the preservation of the standard of living and comfort of the middle class during all environmental transformations but also the improvement of the standard of living of the poor and the reduction of social inequality in society. The ideas of the Green Deal are aimed at realizing a double goal: on the one hand, prosperity for all members of society, and on the other hand, overcoming negative manifestations of anthropogenic influence (including floods, droughts, desertification, heat waves, diseased environment, mass extinction, habitat degradation and destruction of food supply systems)[12]. If the concept of degrowth puts irresponsible behavior and the consumerist model of the existence of the middle class at the center of environmental problems, the concept of the Green Deal tries to establish the priority of ecology without loss of well-being. It is because of this that critics believe that the Green Deal is simply "another vision of citizen apathy, which is combined with expert activity to keep things as usual[13]. " Nevertheless, the

[12] Ossewaarde M., Ossewaarde-Lowtoo R. The EU's Green Deal: A Third Alternative to Green Growth and Degrowth? *Sustainability.* 2020 Vol. 12. R. 9825.

[13] Timothy WL A Green New Deal: Why Green, How New, and What is the Deal? *Critical Policy Studies.* 2009. Vol. 3. Issue 1. R. 14–28.

social component of the Green Deal is extremely important, as it is declared that "citizens are and must remain the driving force of the transition" [14];

2) *economic* – if the concept of degrowth insists on the need to curtail human economic activity, then the concept of the Green Deal aims at the further development of the economy and even its growth, but already on other, climate-neutral, stable conditions. Foreign researchers conclude that the Green Deal is based on the belief that the environmental crisis can be overcome with the help of green technologies without any reduction in growth, that is, without harming prosperity and a stable standard of living of the middle class[15].

So, based on the approbation of the concept of green growth in some developed countries of the world over the last decade, its half-hearted, and therefore insufficient, impact on solving the problems of sustainable development was clearly demonstrated. Based on the results obtained (including the progression of climate change and increasing climate injustice), it became clear that green growth is not capable of solving the existing problems. That is why this idea was replaced by the latest Green Deal concept, which is currently at various stages of implementation in some countries of the world. Analyzing this process, it should be recognized as not just another ecological flirtation – the Green Deal concept is the embodiment of a new global trend that will only gain momentum and further spread. In this connection, domestic science faces an important question about the impact of this trend on Ukraine and the place of our state in this process, which will be discussed in the following subsections.

Based on the results of the research, some conclusions can be drawn. First, the Green Deal concept is quickly becoming a global environmental trend, which implies a fundamental change in the paradigm of civilizational development. Ukraine will not be able to avoid this process or only simulate joining it. In addition to its obligations to the world community, Ukraine will be pushed to take appropriate real actions by specific states, whose costs for greening will force them to closely monitor similar actions on the part of Ukraine.

Secondly, the Green Deal concept must be perceived as an ideological basis, the embodiment of the general goal of saving the planet from a climate catastrophe. It is necessary to avoid a simplified understanding of this concept as a certain universal plan of actions, tasks and indicators,

[14] European Commission. The European Green Deal. URL: https :// ec . Europe. eu / info / sites / info / files / european – green – deal – communication _ en . pdf (date of application: 12.02.2021)

[15] Ossewaarde M., Ossewaarde-Lowtoo R. The EU's Green Deal: A Third Alternative to Green Growth and Degrowth? *Sustainability*. 2020 Vol. 12. R. 9825.

which are mandatory for absolutely all countries from Germany to Zimbabwe. In fact, the idea of the Green Deal, refracted through the prism of each country, takes on a unique appearance, forms the individual, most optimal path of each state to the global goal[16].

7.2. International legal regulation of alternative energy

The modern stage of the development of civilization is connected with the satisfaction of the ever-increasing needs of society and the level of the quality of life of the population. This leads to a rapid increase in the consumption of resources on the planet, including energy. The exhaustion and impossibility of reproduction in full of the latter, their use in such a way that negatively affects the surrounding natural environment and worsens the global ecological situation, forces humanity to look for new opportunities to satisfy their needs.

In this regard, the issue of encouraging states to reduce or abandon the use of traditional energy sources and increase the specific weight of energy obtained from alternative (renewable) sources appears on the agenda of the world community[17]. Globalization of the world economy has led to the so-called fourth industrial revolution (or green environmental revolution or energy revolution). All these phenomena are a consequence of the widespread use of alternative energy in the world. It has become not only a popular trend, but also in some places aims to completely replace traditional energy to ensure a balanced development of the economy, energy and ecology. As H. A. Hryhorievar'eva rightly points out, "the active development of alternative energy is more than just another innovation. This is a new way of functioning of the energy system, which has its own characteristics, and potential threats and requires the development of appropriate legal approaches to its regulation[18]".

It is the ecological component and its preservation that is of primary importance, since the disturbance of the climatic balance caused by the emission of greenhouse gas leads to climate change, which is accompanied by powerful hurricanes, dust storms, drought, or, conversely, large-scale

[16] Григор'єва Х. А. Green Deal та Україна: роздуми про правові перспективи. *Екологічне право*. 2021. № 1–4. С. 25–32.

[17] Чумаченко І. Є. Міжнародно-правове регулювання альтернативної енергетики. *Юридичний науковий електронний журнал.* 2021. № 1. С. 143–146.

[18] Григор'єва Х. А. Розвиток альтернативної енергетики як фактор перегляду методологічних засад регулювання аграрних, земельних та екологічних правовідносин. *Актуальні правові проблеми інноваційного розвитку агросфери:* збірник матеріалів наук.-практ. конф. (м. Харків, 20 листопада 2020 р.) / за ред. А. П. Гетьмана, М. В. Шульги, Т. В. Курман. Харків: Юрайт, 2020. С. 130–135.

floods. In this case, it is absolutely necessary to reduce the pressure on ecology and switch to energy sources offered by nature: energy from the sun, wind, water, use of biofuel or biogas,[19]etc.

The energy issue threatens to grow into a major world problem, much more complex and vital than all other "world" problems, including economic, political, social, ecological, food and others, because the basis of real ways to solve them is the question of having sufficient energy resources. The energy sphere is actually recognized as one of the most complex in the modern world, and energy problems require a comprehensive solution in the focus of sustainable development[20].

The world community has decided that there is currently no alternative to the development of renewable energy. In addition, the introduction and use of alternative energy not only reduces greenhouse gas emissions into the atmosphere but also ensures stability in the energy complex by reducing the consumption of traditional minerals (gas, oil, coal, etc.).

At present, it is obvious that the solution of global energy problems is not possible with the help of unilateral efforts of individual countries – the collective efforts of the world community are needed here. At the same time, such joint activity should not prevent the implementation of the principle of state sovereignty over its natural resources[21]. Therefore, a stable mechanism of international legal regulation of the studied relations should contribute to the achievement of the specified goals of ensuring the world's energy security and sustainable ecological development. The national legislation of Ukraine is not isolated from the legal process that takes place at the international level, on the contrary: Ukraine is actively involved in the international legal development of alternative energy. Taking into account the above, it is advisable to single out two main areas of regulation of renewable energy: international contractual and institutional.

International contractual regulation is characterized by the fact that currently there is a large number of international legal acts in the energy sector, in the field of environmental protection, which directly or indirectly

[19] Харитонова Т. Є. Альтернативні джерела енергії в Україні: проблеми та переваги використання. *Актуальні проблеми юридичної науки*: збірник тез Міжнар.наук.-практ. конф. "Дев'ятнадцяті осінні юридичні читання" (м. Хмельницький, 23 жовтня 2020 року). Хмельницький: Хмельницький університет управління та права імені Леоніда Юзькова, 2020. С. 294–295.

[20] Караханян К. М. Особливості правового регулювання альтернативної енергетики в країнах Америки (США, Канада, країни Латинської Америки). *Міжнародний науковий журнал "ІНТЕРНАУКА". Серія: "Юридичні науки"*. 2021. № 1 (35). С. 68–75.

[21] Білоцький С. Д. Міжнародно-правове регулювання у сфері екологічно орієнтованої енергетики: автореф. дис. … докт. юрид. наук: 12.00.11. Київ, 2016. 40 с.

regulate relations in the field of alternative energy. In recently adopted acts at the international level, such as the Rio+20 Declaration of the United Nations (UN) Conference on Sustainable Development (2012), the resolution of the Parliamentary Assembly of the Organization for Security and Cooperation in Europe (OSCE PA) on environmental security (2013), the International Energy Charter (2015), the declaration of the Sustainable Development Summit "Transforming our world: Agenda for sustainable development until 2030" (2015), the Association Agreement of Ukraine with the EU and its member states (2014), the common thread is the idea that activities in the field of energy must meet the needs of sustainable development and the requirements of environmental protection[22].

Many international conferences and programs on environmental protection were devoted to the issue of climate change and possible ways to prevent this process, decarbonization of production. Thus, the UN Conference on the Environment on June 16, 1972 in Stockholm [23]recognized the global nature of environmental problems in the modern world and emphasized the need to create effective international mechanisms for improving the environmental condition. As a result, the Stockholm Declaration on the Environment was adopted, which indicates a close connection between the need to protect the environment and the socio-economic development of mankind[24]. It also defined the main directions and principles of international environmental protection in such areas as rational use of natural resources, preservation of flora and fauna, prevention of environmental pollution (including seas), and management of environmental protection. In addition, the Stockholm Declaration for the first time in the world established some international legal principles, namely: recognition of the human right to live in a favorable environment and the duty to protect it (Principle 1); the principle of the sovereign right of states to develop their natural resources and responsibility for causing damage to the environment of other states (Principle 21); the principle of cooperation in solving environmental problems (Principle 24).

[22] Чумаченко І. Є. Міжнародно-правові аспекти забезпечення розвитку альтернативної енергетики. *Пріоритетні напрямки розвитку правової системи України:* матеріали міжнар.наук.-практ. конф. (м. Львів, 29–30 січня 2021 р.). Львів: Західноукраїнська організація "Центр правничих ініціатив", 2021. Ч. 2. С. 110–113.

[23] Конференція ООН з проблем середовища, оточуючого людину. URL: https://uk.wikipedia.org/wiki (дата звернення: 01.07.2023 року)

[24] Декларація Конференції Організації Об'єднаних Націй з проблем оточуючого людину середовища. Принята Конференцией Организации Объединенных Наций по проблемам окружающей человека среды, Стокгольм, 1972 год. URL: http://zakon3.rada.gov.ua/laws/show/995_454

For the first time, sustainable development and its connection with renewable energy was announced during the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in June 1992. The result of the event was the adoption of the Declaration, which established the fundamental principles of international cooperation on environmental protection and emphasized the inextricable connection between environmental protection and the vital activities of society[25]. The Rio Declaration on Environment and Development states that, working to preserve, protect and restore the integrity of Earth's ecosystems, states must adopt effective national environmental laws. Another principle of this document is that developed countries recognize the responsibility they bear in the context of international efforts to ensure sustainable development, taking into account their impact on the state of the global environment. The above shows that the problems of energy saving and energy efficiency are a common challenge for all countries of the world, which must jointly develop and implement measures aimed at achieving climate neutrality, including thanks to the use of alternative energy sources.

Another source of international law, directly related to the use of renewable energy resources, is the Resolution of the UN General Assembly "UN Conference on New and Renewable Energy Sources" of 1978. In particular, according to this document, such sources include solar energy, geothermal energy, wind energy, light energy, tidal energy, wave energy and the thermal gradient of the sea, biomass conversion energy, energy obtained by burning fuel wood, charcoal, peat, oil shale, bituminous sandstones, energy from the use of draft animals and hydropower. UN General Assembly Resolution 67/215 of January 21, 2012 is aimed at regulating the issue of increasing the share of alternative energy sources in the global energy balance.

It is worth noting that the sources of international law, including international environmental law, are usually divided into sources of binding "hard law" and "soft law" of a recommendatory nature. Sources of "firm law" include international conventions (international treaties); international customs; general principles of law; binding resolutions; and mandatory standards. The sources of "soft law" are resolutions issued by international institutions and international conferences, court decisions and doctrines of qualified specialists in international law; standards; and recommendations[26].

[25] Декларація Ріо-де-Жанейро щодо навколишнього середовища та розвитку ООН; Декларація, Міжнародний документ від 14.06.1992. URL: http://zakon2.rada.gov.ua/laws/show/995_455

[26] Екологічне право України: навчальний посібник / за ред. проф. І.І. Каракаша, д.ю.н. Т.Є. Харитонової, к.ю.н. А.І. Черемнової, вид. 1-е. Одеса: Гельветика, 2018. 408 с.

"Soft law" is more moral and political, which is why it does not have such a feature as normativity. Therefore, the norms of "soft law" are a specific regulator of social relations between subjects of international law, which, on the one hand, are rules of conduct that do not give rise to legal obligations, and therefore legal responsibility for their violation, and on the other hand – create the basis for the formation of customary law in this area. Note that the majority of international sources in the field of alternative energy consist of the norms of "soft law".

Examples of such acts are the UN Framework Convention on Climate Change[27] and the Kyoto Protocol[28]. The first of these international legal documents emphasizes that all countries, and especially developing countries, need access to the resources necessary to achieve sustainable socio-economic development, and that for developing countries to move towards this goal, their energy consumption should increase taking into account the possibilities of achieving higher energy efficiency and combating greenhouse gas emissions in general, including by using new technologies under conditions that make such use profitable from an economic and social point of view. In addition, the Convention declares the cooperation of countries in many areas, in particular, energy, as well as the possibility of assistance and support to countries whose economies are largely dependent on the consumption or export of fossil fuels and may suffer as a result of reducing the consumption of such energy carriers.

The Kyoto Protocol of 1997 is one of the first treaties that provides for the joint activity of states in the field of alternative energy. The Kyoto Protocol provides for a clean development mechanism, which, according to M.V. Chipko, can be considered as one of the ways to implement renewable energy projects[29]. Note that the protocol contains only one mention of alternative energy sources, namely: clause 1 of Art. 2 (a) provides tasks, including increasing the efficiency of energy use in the relevant sectors of the national economy, conducting research, promoting the implementation, development and dissemination of the use of new and renewable types of energy, carbon dioxide absorption technologies and innovative environmentally safe technologies. However, as noted by I. E. Chumachenko, the absence of mandatory norms for the use of

[27] Рамкова конвенція Організації Об'єднаних Націй про зміну клімату від 09.05.1992 р. *Офіційний вісник України*. 2012. №83. Стор. 198. Ст. 3381.

[28] Кіотський протокол до Рамкової конвенції Організації Об'єднаних Націй про зміну клімату від 11.12.1997. URL: http://zakon2.rada.gov.ua/laws/show/995_801 (дата звернення: 01.07.2023 року)

[29] Чіпко М.В. Міжнародно-правове регулювання співробітництва держав у сфері використання відновлюваної енергетики: дис. … канд. юрид. наук: 12.00.11. Одеса, 2017. 237 с.

alternative energy sources did not prevent the reduction of 45 million tons of carbon dioxide in practice in favor of the use of "clean" technologies[30].

The European Energy Charter of 1991, ratified by Ukraine, was adopted with the aim of unifying the states of Eastern and Western Europe. However, in accordance with the modern realities of the world energy market, it was modernized into the International Energy Charter, since the boundaries of cooperation between countries have long been no longer limited to the Eurasian market. One of the main international legal documents in the field of energy is the Energy Charter Treaty and its Protocol[31].

The issues of energy efficiency and the use of alternative energy sources are enshrined in Art. 19 of the Protocol, according to which the parties to the Treaty pay special attention to increasing energy efficiency, development and use of renewable energy sources, encouraging the use of cleaner types of fuel and the use of technologies and technological means that reduce pollution. Further cooperation between the states within the framework of the Treaty will contribute to the gradual integration of their energy systems, and will also unite their efforts on the way to the faster introduction of the use of "green" energy. One of the principles of achieving climate neutrality contained in the Protocol is the creation of framework conditions that encourage producers and consumers to use energy as economically, efficiently and ecologically as possible, especially by organizing efficient energy markets and more fully reflecting environmental costs and benefits.

The legal analysis of the specified documents shows that despite the non-specialized nature of the norms of the Energy Charter Treaty and the Protocol to it, their general focus on improving energy efficiency and environmental cleanliness of energy resources stimulates the use of renewable energy sources.

It is worth noting that despite the existence of numerous normative acts of an international legal nature in the field of alternative energy, there is still no single comprehensive document on energy issues. Analysis of the actual prerequisites allows us to state that such a situation is completely natural. This is explained by the synergistic effect of several important factors: a) *a significant economic gap between countries* (greening, including in the form of alternative energy, requires quite significant capital investments, which not all countries can afford); b) *different starting conditions of the energy*

[30] Чумаченко І. Є. Міжнародно-правове регулювання альтернативної енергетики. *Юридичний науковий електронний журнал.* 2021. № 1. С. 143–146.

[31] Договір до Енергетичної Хартії та Заключний акт до неї. URL: https://zakon.rada.gov.ua/laws/show/995_056 (дата звернення: 01.07.2023 року)

transition (the interests of countries differ significantly depending on their possion of energy resource reserves – in particular, fossil fuel-poor countries carry out legal incentives for alternative energy much more easily and more actively; and also depending on the level of greenhouse gas emissions that these countries produce); c) *significant cultural and socio-economic differences between countries* (energy transition is impossible without mass support of society, while awareness of climate changes and their dangers, awareness of the need for decarbonization as soon as possible strongly depends on the level of education of society, the level of its environmental and legal culture).

The institutional direction in the mechanism of international cooperation in the alternative energy sector is manifested in the functioning of international and regional intergovernmental organizations.

Thus, *the International Energy Agency (IEA),* which is an intergovernmental organization established in Paris in 1974 by a decision of the Organization for Economic Cooperation and Development (OECD), makes a significant contribution to stimulating the use of renewable energy sources in the world. Within the framework of the IEA, a department of alternative energy was created, which promotes the cooperation of participating countries in this field by exchanging experiences between them. Working agreements on renewable energy sources, under which IEA platforms aimed at the development of alternative energy have been created, include: bioenergy (Bioenergy IA), solar energy and chemical energy systems (SolarPACES IA), dissemination of renewable energy technologies (RETD IA), research geothermal energy and technologies (Geothermal IA), research and development of hydrogen production and use (Hydrogen IA), hydropower technologies and programs (Hydropower IA), ocean energy systems (OES IA), photovoltaic energy systems (PVPS IA), research and development of solar heating and cooling (SHC IA) and wind energy systems (Wind IA).

The International Renewable Energy Agency (IRENA), which began functioning in 2011, occupies a key place among international organizations whose activities are aimed at stimulating the development of alternative energy. According to Art. Art. II and III of the Charter, the goals of IRENA include promoting the spread, active implementation and continuous use of all types of renewable energy obtained on a sustainable basis from renewable energy sources. Achieving these goals is possible by promoting information exchange, scientific and technological cooperation, financial support for renewable technologies, and coordination of cooperation between member states and other organizations in the field of renewable energy.

Currently, IRENA acts as a center for the improvement of technologies in the field of renewable energy, promotes mutual exchange of knowledge, transfer of relevant technologies, dissemination of practical tools and recommendations aimed at accelerating the implementation of environmentally clean, sustainable energy for the growing needs of the population. IRENA decisions are advisory in nature and do not have legal force, but this does not diminish their importance for sustainable development. IRENA became not only a center of global experience in the use of renewable energy sources, but also an incentive to build strong partnerships in the field of alternative energy. On December 5, 2017, the Law of Ukraine "On Ukraine's Accession to the Charter of the International Renewable Energy Agency (IRENA)" was adopted [32].

of the Energy Community (hereinafter referred to as EC) cannot be overlooked. The Treaty on the Establishment of the EU was signed on October 1, 2005 in Athens (Greece), which entered into force in July 2006. The purpose of the creation of the EU was to spread the rules and principles of the EU internal energy market to South-Eastern Europe, the Black Sea region and other countries. The goals of the EU are to create a stable market structure capable of attracting investments in the production of electricity and networks, the creation of an integrated energy market that will allow for cross-border energy trade, ensuring a stable and continuous energy supply, which is necessary for the economic development and social stability of countries, improving the environmental situation in relation to energy supply in the region and promoting the use of renewable energy sources. The EU considers the use of renewable energy sources as one of the ways to achieve energy security [33].

On February 1, 2011, Ukraine became a full member of the EU and undertook to implement the main acts of EU energy legislation into national legislation. The Protocol on the Accession of Ukraine to the Treaty on the Establishment of the EU was signed in September 2010 and ratified by the Law of Ukraine dated December 15, 2010 "On the Ratification of the Protocol on the Accession of Ukraine to the Treaty on the Establishment of the Energy Community"[34]. Ukraine's accession to the EU provided

[32] Про приєднання України до Статуту Міжнародного агентства з відновлювальних джерел енергії (IRENA): Закон України від 5 грудня 2017 року. *Відомості Верховної Ради України*. 2018. № 2. Ст. 6.

[33] Чумаченко І. Є. Роль міжнародних організацій у сфері розвитку альтернативної енергетики. *Інтеграція освіти, науки та бізнесу в сучасному середовищі: зимові диспути:* тези доп. II Міжнар.наук.-практ. інтернет-конф. (Дніпро, 4–5 лютого 2021 р.). Дніпро, 2021. Т.2. С. 427–429.

[34] Договір про заснування Енергетичного Співтовариства від 25.10.2005 р. *Офіційний вісник України*. 2011. № 32. Ст. 1.

opportunities and tools for carrying out structural reform in the field of national energy, including through the introduction of renewable energy sources[35].

7.3. Development of legal regulation of the use of alternative energy sources in the European Union

Currently, the EU countries are leading countries in the world in terms of energy production based on alternative energy sources, and the intensification of their use is a key element of the European energy strategy. The EU has a two-fold goal in this area: increasing energy security and reducing the negative man-made impact on the environment. One of the means of achieving this goal is the EU legal acts, which determine the development and support of various types of alternative energy. The study of the legal regulation of the development of alternative energy and its support has its own tradition within the framework of EU law, the legislation of which is being actively approached by Ukraine[36].

It is worth noting that an important historical event was the adoption by the European Council on June 23, 2022 of the decision to grant Ukraine the official status of a candidate for EU membership. At the Twenty-fourth Ukraine-EU Summit, which took place on February 3, 2023 in Kyiv, the Ukrainian side announced an initiative to start the process of self-screening of the compliance of Ukrainian legislation with EU law based on the Analytical Report on Ukraine's implementation of EU law submitted by the European Commission. In order to ensure Ukraine's preparation for negotiations on joining the EU, on February 28, 2023, the Cabinet of Ministers of Ukraine approved the Procedure for conducting an initial assessment of the state of implementation of the EU acquis[37]. The chosen European integration course of our country forces us to update not only the economy, technologies, and management system, but also to fundamentally

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[35] Чумаченко І. Є. Міжнародно-правове регулювання альтернативної енергетики. *Юридичний науковий електронний журнал.* 2021. № 1. С. 143–146.

[36] Платонова Є. О. Правові механізми стимулювання використання альтернативних джерел енергії в Європейському Союзі. *Шості Таврійські юридичні наукові читання:* матеріалиМіжнар. наук.-практ.конф. (м. Київ, 5–6 лютого 2021 р.). Київ: Таврійський національний університет імені В. І. Вернадського, 2021. С. 71–75.

[37] Про затвердження Порядку проведення первинної оцінки стану імплементації актів права Європейського Союзу (acquis ЄС): постанова Кабінету Міністрів України від 28 лютого 2023 р. № 189. *Офіційний вісник України.* 2023. № 28. Ст. 1558.

revise the legislation and traditional legal approaches to its development, interpretation, and improvement[38].

The policy of the EU countries in the field of the use of alternative energy sources is characterized by extensive legal support, the use of various tools and initiatives, the functioning of an effective system of monitoring and control over their use, a complex combination with other areas of state regulation, which indicates its success. Undoubtedly, the EU u a comprehensive approach to the formation of a regulatory framework in the field of alternative energy[39].

The system of energy legislation of the EU is characterized by a single legal framework formed by several strategic directives and road maps developed by the European Commission. At the national level, with the aim of developing renewable energy sources in EU countries, a number of regulatory documents are adopted, such as: national strategies ("National Energy Strategy of Hungary until 2030" dated February 14, 2012, "Energy Strategy of Denmark until 2050" dated February 24, 2011 2000) and national energy laws (Germany's Law "On Renewable Energy Sources **"** from 2000 , Bulgaria's Law "On Energy" from 2011).

National state programs contain differences in approaches to the implementation of EU energy policy, caused by different levels of energy infrastructure of countries, availability of energy carriers, priorities in ensuring energy security. In most European countries, the strategy of energy efficiency and the use of alternative energy sources has acquired the character of a national idea. According to the new EU Energy Strategy until 2050 (EU 2050 Energy Strategy), it is planned to provide more than half of all energy consumption with electricity, 80% of which should be produced from alternative sources. Leaders in the field of energy production from alternative sources are Germany, Austria, Denmark, Italy, and France. Solar energy, wind energy, and biomass energy production have gained the greatest development[40]

The development of legal regulation of relations in the sphere of the use of alternative energy sources in the EU is connected with the oil cri of the

[38] Григор'єва Х. А. Розвиток альтернативної енергетики як фактор перегляду методологічних засад регулювання аграрних, земельних та екологічних правовідносин. *Актуальні правові проблеми інноваційного розвитку агросфери:* матер. наук.-практ. конф. (Харків, 20 листопада 2020 р.). Харків, 2020. С. 130–135.

[39] Платонова Є. О. Стимулювання розвитку альтернативної енергетики за законодавством Європейського Союзу. *Юридичний науковий електронний журнал.* 2021. № 1. С. 137–142.

[40] Кузьміна М.М. Європейський досвід забезпечення розвитку альтернативної енергетики. *Вісник Національного університету "Юридична академія України імені Ярослава Мудрого". Сер. Економічна теорія та право.* 2012. № 4 (11). С. 120–127.

70s of the 20th century. The legislation provided for taking measures aimed at energy conservation, diversification of energy supply sources and orientation of energy policy towards more efficient use of available energy reserves. Subsequently, the issue of diversification gave way to environmental considerations related to the danger of the greenhouse effect and environmental pollution with carbon dioxide emissions, so the EU began to introduce comprehensive measures in this area.

The EU began to take practical measures in the direction of harmonization in the field of renewable energy sources by developing conceptual political documents – acts of "soft law" in the form of White and Green Papers. They were supposed to outline the problem and outline promising ways to solve it based on a joint strategy. Thus, one of the first EU acts dedicated to the legal regulation of relations related to renewable energy sources was the Green Book of the European Commission dated November 20, 1996. Based on the results of the discussion of the Green Paper, the White Paper "Energy for the Future: Renewable Energy Sources" was adopted in 1997, which defined the EU strategy and action plan. These documents established a strategic guideline for achieving by 2010 the minimum volume of energy obtained from renewable sources, 12%. This was supposed to contribute to increasing jobs in the EU, reducing dependence on energy imports and improving the situation with CO2 emissions.

To achieve the intended goals, it was considered to develop an action plan, which was supposed to encourage the development of renewable energy sources in the EU without excessive financial burden by implementing the following priority measures: non-discriminatory access to the electricity market; tax and financial measures; new initiatives on bioenergy for transport, heat and electricity and, in particular, specific measures to increase the market share of biofuels, encourage the use of biogas and develop solid biomass markets; promoting the use of renewable energy sources (such as solar energy) in the modernization and construction of new buildings[41].

The main directions of EU energy development, including renewable energy, in the coming years are also defined in such EU documents as the EU Green Paper 2005/265 on energy efficiency and the EU Green Paper 2006/105 on the European strategy for sustainable, competitive and secure energy. The implementation of their provisions contributed to the growth of renewable electricity in the EU compared to other new technologies.

[41] Білоцький С.Д. Еволюція правового регулювання альтернативних (відновлюваних) джерел енергії в праві ЕС. *Наукові записки Інституту законодавства Верховної Ради України.* 2015. № 6. С. 87–93.

However, the main regulatory acts on the use and development of renewable energy sources are EU Directives, which contain common goals for participating countries in the field of renewable energy[42].

Directive 2001/77/EC of the European Parliament and the Council of September 27, 2001 "On the creation of favorable conditions for the sale of electricity produced from renewable sources on the domestic electricity market"[43]. Given the leading position of the EU among the countries of the world in the development of technologies related to renewable energy sources, the Directive aimed to support the increase in the value of such energy while respecting the general principles of the internal market. As its specific goal, a general increase in the share of renewable energy sources in the production of electricity in the internal EU electricity market was determined (for 2010 – 22%, in contrast to the 12% provided in the White Book). The Directive covered electricity produced from non-extractable renewable energy sources such as wind, solar, geothermal, wave and tidal energy, hydropower, biomass, organic waste gas, waste water gas and biogas.

Helpfully, the Directive provided for a system to guarantee the originality of energy produced from renewable sources in order to facilitate its exchange and increase transparency when consumers make their choices. The guarantee of the originality of the energy produced from renewable sources must specify the energy source from which it was produced, the date and place of its production, and in the case of hydropower – additionally, the state of capacity. The directive expired on January 1, 2012.

Subsequently, on May 8, 2003, *Directive 2003/30/EC* of the European Parliament and the Council "On promoting the use of biofuels or other renewable fuels for transport" was adopted[44]. This document became one of the first international acts in which emphasis was placed on the need to encourage the use of renewable energy sources specifically in the field of transport. The directive was aimed at promoting the use of biofuels or other renewable fuels to replace diesel or petrol for transport purposes in each

[42] Бенедик Я. С. Організаційно-правовий механізм міжнародного співробітництва у сфері використання відновлюваних джерел енергії:автореф. дис. … канд. юрид. наук: 12.00.11. Харків, 2016. 21 с.

[43] Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity from renewable energy sources in the internal electricity market. *Official Journal of the European Union*. 2001. L283. R. 33–40. URL: https://eur-lex.europa.eu/legal-content EN/ TXT /? uri =CELEX: 320032001L0077 *(expired*)

[44] Directive 2003/30/EC of the European Parliament and of the Council of 8 May 2003 on the promotion of the use of biofuels or other renewable fuels for transport. *Official Journal of the European Union*. 2003. L123. R. 42–46. URL: https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX:32003L0030 *(copyright lost).*

member state, with the aim of fulfilling obligations on climate change, environmental security of supply and encouraging the use of renewable energy sources. The Directive became invalid on January 1, 2012 due to the adoption of a new Directive.

The following changes in the EU's energy policy necessitated the harmonization of schemes for stimulating the use of renewable energy sources and their improvement. The most significant contribution to the development of the legal regulation of the use of renewable energy sources and the stimulation of their development belongs to the key *Directive 2009/28/EC* of the European Parliament and the Council "On the promotion of the use of energy produced from renewable sources and which amends and subsequently repeals the 2001 Directive /77/EC and 2003/30/EC" dated April 23, 2009 [45], or as it is also called "RED I". It is seen that it can be defined as the main EU directive on the use of alternative energy, a kind of codification act in this field [46].

As the name implies, Directive 2009/28/EC repealed (finally from January 1, 2012) the first EU directives in the field of renewable energy sources: Directives 2001/77/EC and 2003/30/EC, which separately regulated the issue of electricity production from renewable sources and biofuels in transport.

The production and use of renewable energy sources is supported by the provisions of Directive 2009/28/EC to reduce greenhouse gas emissions and promote the development of clean transport. It aimed at the participation of all EU members in increasing the share of renewable energy sources in total energy consumption, with the determination of specific volumes for each EU member. EU member states set their national targets to achieve a common goal by 2020 of 20% of energy from renewable sources in the gross final energy consumption of EU countries and a mandatory minimum of 10% for all member states in biofuel consumption by the transport sector.

According to Directive 2009/28/EU, EU countries had to develop and adopt National Plans for the development of renewable energy sources, defining the main goals they should achieve by 2020 and support mechanisms for their achievement. Mandatory national targets in the field of renewable energy are established primarily in order to provide certain

[45] Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC . *Official Journal of the European Union.* 2009. L140. P. 16–62. URL: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX: 32009L0028 (date of application: 07/01/2023)

[46] Білоцький С.Д. Правове регулювання використання відновлюваних джерел енергії в рамках Європейського Союзу. *Актуальні проблеми міжнародних відносин.* 2012. Вип. 105 (1). С. 58–66.

guarantees to investors and to encourage the development of the latest technologies and innovations in this field.

To achieve the established national goals of the member states regarding the use of renewable energy sources, Directive 2009/28/EU proposed to apply appropriate measures to stimulate and support the development of energy from renewable sources. Measures to achieve the respective goals are: firstly, aid regimes (support tools), secondly, measures of cooperation between various member states , as well as cooperation with third countries to achieve their national global goals[47].

Support instruments are provided in the following forms (but are not limited to): investment aid, tax reductions or tax exemptions, tax refunds, aid schemes related to the obligation to use energy produced from renewable sources, including those that using green certificates and direct price support regimes, including special purchase prices and premium payments. At the same time, EU member states remain free to choose approaches and tools to achieve the goals, taking into account national characteristics. As a result , a situation has arisen when various EU member states apply different types of state development stimulation, mixed mechanisms of stimulation of energy production from renewable sources on their territory. Currently, such Plans have been adopted and are being implemented in Germany, France, Italy and other EU member states. The legislation of each of the EU member states defines the legal mechanisms using which such stimulation is carried out[48].

It can be stated with certainty that Directive 2009/28/EU became a comprehensive legal act of the EU in the field of alternative energy, the norms of which regulated the use of alternative energy sources both in the field of electricity and in the field of transport. Unlike the previous directives, it contained not only the goals and principles of the participating countries regarding the use of renewable energy sources but also provided for a specific mechanism for their implementation [49]. It should be noted that until December 2018, Directive 2009/28/EC on the promotion of the use of energy produced from renewable sources remained the main regulatory act

[47] Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC . *Official Journal of the European Union*. 2009. L140. P. 16–62. URL: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX: 32009L0028 (date of application: July 1, 2023)

[48] Стоян О. Ю. Міжнародний досвід державного регулювання та стимулювання розвитку відновлювальної енергетики. *Вісник Чернігівського державного технологічного університету.* 2014. № 4 (76). С. 320–326.

[49] Дороніна І. І. Інструменти державної підтримки використання енергії з відновлюваних джерел. *Збірник наукових праць НАДУ*. 2020. Вип. 2. С.47–55.

of the EU on the use and development of renewable energy sources. On December 11, 2018, *Directive 2018/2001* with a similar name was adopted to replace it. However, the previous directive was valid until July 1, 2021.

In order to further promote the development of renewable energy within the framework of the Fourth EU energy package of documents "Clean energy for all Europeans", on December 11, 2018, Directive *2018/2001* of the European Parliament and the Council of the EU on the promotion of the use of energy produced from renewable sources , the so-called "RED II" . The new Directive set the main mandatory targets: by 2030, the share of energy obtained from renewable sources in the gross final energy consumption of the EU should be at least 32% and 14% of renewable energy in the transport sector. The main areas of work to achieve them are as follows: improving market design and increasing the stability of schemes for supporting renewable energy sources; acceleration and shortening of administrative procedures; establishment of a clear and stable regulatory framework for self-consumption; penetration of renewable energy sources into the spheres of transport, heating and cooling; improving the sustainability of biofuel use[50].

According to the provisions of RED II, state support instruments are an effective way to promote the implementation of renewable electricity, but such support should be provided in a form that is as unobtrusive as possible to the functioning of electricity markets (energy sector) . Special attention in the Directive is devoted to the importance of state support for small producers of electricity from renewable sources: small enterprises, households, energy cooperatives to activate the creation of their own sources of renewable energy. A number of opportunities were provided for EU member states to ease the administrative and procedural burden on small producers of energy from renewable sources (exempting small generation from participating in tender procedures; limiting the duration of permitting procedures for small generation facilities, etc.)[51].

It should be noted that during 2022 in the EU countries there was an increase in measures to introduce renewable energy sources against the background of the energy crisis caused by the full-scale invasion of the

[50] Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (recast). *Official Journal of the European Union.* 2018. L328. R. 82–209. URL: https://eurlex.europa.eu / legalcontent/EN/TXT/?uri=uriserv: OJ.L_.2018.328.01.0082.01.ENG (access date: 07/01/2023)

[51] Платонова Є. О. Правове регулювання використання альтернативних джерел енергії в Європейському Союзі. *Держава і право в умовах глобалізації: реалії та перспективи*: матеріали міжнар. наук.-практ. конф. (м. Дніпро, 5-6 лютого 2021 р.). Дніпро: ГО "Правовий світ", 2021. С. 18–23.

Russian Federation on the territory of Ukraine. High and unstable energy prices have stimulated attention to increase the consumption of energy from renewable sources, in particular, the replacement of fossil fuels with hydrogen technologies.

So, on May 18, 2022, the European Commission approved the REPowerEU plan to abandon Russian energy carriers[52], one of the tasks of which is to accelerate the introduction of renewable energy sources in electricity production, industry, construction and transport. As part of the REPowerEU plan, the European Commission has published Recommendations on speeding up permitting procedures for renewable energy projects and facilitating the conclusion of electricity purchase and sale agreements. According to these recommendations, EU member states can create special zones for the deployment of RES capacities under a shortened and simplified procedure for obtaining permits in areas with a lower environmental risk[53].

The deterioration of the situation in the energy markets prompted the European Commission on November 9, 2022 to propose a draft Regulation to accelerate the implementation of renewable energy sources[54]. Under the proposal, renewable energy installations would be deemed to be of the highest public interest, and this would allow the new permitting procedures to benefit with immediate effect from a simplified environmental assessment. On December 15, 2022, the European Parliament supported the European Commission's plans to stimulate the use of renewable energy.

The study of European alternative energy markets showed that these markets are affected by special legal mechanisms of state support. Methods of stimulating the use of alternative energy sources in EU countries constitute a complex and extensive system. At the same time, different EU countries choose their own legislative tactics to stimulate alternative energy, taking into account their own resources, local conditions and legal traditions.

Today, most EU countries use *"green" tariffs* ("feed-in tariffs", FIT) as the main and effective legislative mechanism for encouraging and compensating costs in the form of establishing a long-term fixed tariff for

[52] REPowerEUPlan . Brussels, 18.5.2022. URL: https :// eur – lex . Europe. eu / legal – content / EN / TXT /? uri = COM %3 A 2022%3 A 230%3 AFIN & qid =1653033742483 (date of application: 07/01/2023)

[53] Commission Recommendation on speeding up permit-granting procedures for renewable energy projects and facilitating Power Purchase Agreements of 18.5.2022. URL: https :// eur – lex . Europe. eu / legal – content / EN / TXT /? uri = PI _ COM %3 AC %282022%293219& qid =1653033569832 (date of application: 07/01/2023)

[54] Proposal for a Council Regulation laying down a framework to accelerate the deployment of renewable energy. Brussels, 9.11.2022. url. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022PC0591&qid=1669020920010 (access date: 07/01/2023)

electricity produced based on the use of alternative energy sources. Currently, France, Austria, Latvia, Lithuania, Bulgaria, Ireland, Luxembourg, Greece, Hungary, and Slovakia actively use it. With its help, the state guarantees producers the purchase at a fixed price of energy produced on the basis of alternative sources, during a certain period, regardless of market fluctuations. At the same time, the energy produced by them will be purchased at higher prices than from producers of traditional energy, and the quantitative result of this type of stimulation directly depends on the size of the tariff set by the government[55].

In general, the introduction of the "green" tariff helps to increase the investment attractiveness of alternative electricity projects. However, setting inflated tariffs puts pressure on the country's economy due to the high risk of depletion of the state budget, and also cause a problem with "non-transparent" attempts to obtain state funding.

It should be noted that "green" tariffs have already played a positive role in the markets of many countries, such as Germany, Italy, Spain, and as the competitiveness of alternative energy sources grows, such countries are gradually abandoning them, reducing the amount of payments or switching to other instruments incentives that help reduce network volatility. Such decisions are inevitable, but risky because they increase regulatory uncertainty for investors in this area.

, a premium "green" tariff (feed-in premium s, FIP) is used in EU countries, which provides for an additional payment to the market price of electricity. Currently, "green" allowances have been introduced in such countries as Spain, Italy, France, the Czech Republic, Greece, Denmark, Poland, Finland, the Netherlands, Slovakia, and Estonia.

The essence of the system of "green" allowances is that alternative electricity is sold at market prices, and the state, to mitigate the financial risks of electricity generation based on alternative sources, separately pays its producers a "green" allowance, which compensates for their higher costs compared to producers of traditional electricity. The "green" allowance is a kind of bonus for the environmental friendliness of the energy produced. It can be fixed (expressed in a certain amount that does not depend on fluctuations in market prices) or flexible (its size depends on the dynamics of market prices)[56].

A positive feature of "green" surcharges is definitely that, firstly, they fit more into market mechanisms in the field of electricity than a "green" tariff, as they respond to market prices. Secondly, this mechanism creates

[55] Бабина О. М. Світовий досвід розвитку альтернативних джерел енергії. *Держава та регіони. Сер. Економіка та підприємництво.* 2019. № 6 (111). С. 15–19.

[56] Зарубіжна практика стимулювання розвитку поновлюваних джерел енергії та їх приєднання до електромереж енергосистем / Звіт. Київ: НЕК "Укренерго" Науково-технічний центр електроенергетики, 2012. 75 с.

incentives for the production of electricity in times of high demand for it. Thirdly, it can provide a reduction in government costs for the payment of "green" tariffs in case of high market prices. Fourth, it is suitable for supporting large-scale electricity generation based on biomass and small hydropower, which can quickly respond to changes in electricity market demand.

A negative feature of the mechanism of "green" surcharges compared to "green" tariffs is the creation of uncertainty for investors, causing risks associated with fluctuations in market prices. In addition, exposure to wind and solar power generation is limited, making it impossible to adapt such production to market signals. E. Yu. Rybnikova believes that at the current stage of development of alternative energy in Ukraine, the introduction of this progressive mechanism of support for its producers is premature[57].

Another widespread incentive mechanism is *the quota obligation with trading "green" certificates*, which operates in Sweden, Italy, Poland, Romania and Belgium. According to this mechanism, the government sets mandatory quotas for electricity market participants for the volume of production or consumption of alternative electricity in the total volume of production. As a sign of fulfillment of the obligation, the participant of the electricity market must submit "green" certificates that correspond to the amount of electricity that he was supposed to produce or consume. If a producer (consumer) of electricity cannot fulfill this quota, he must buy "green" certificates on the market or pay a fine, the amount of which is higher than the value of "green" certificates[58].

Under favorable market conditions, the introduction of this incentive mechanism on the territory of Ukraine will allow effective accounting and forecasting of alternative electricity to obtain reliable information about its share in the overall energy balance and promote competitive pricing. It is appropriate to establish mandatory quotas for the consumption of "green" electricity for heavy industries, which are the main sources of emissions of harmful compounds into the environment. The introduction of quotas is quite relevant in the conditions of the competitive electricity market in Ukraine, because with their help, the possibility of selling electricity under bilateral contracts directly to consumers will be not just a formality, but a real deal. It should be emphasized that despite the possibility of obtaining

[57] Рибнікова Е. Ю. Господарсько-правове стимулювання використання відновлюваних джерел енергії в Україні: автореф. дис. … канд. юрид. наук: 12.00.04. Одеса, 2018. 20 с.

[58] Гелетуха Г.Г. Аналіз механізмів стимулювання розвитку "зеленої" електроенергетики у Європейському Союзі. *Пром. теплотехніка*. 2011. Т. 33. № 5. С. 35–41.

many benefits from the introduction of the quota system in Ukraine, its implementation must be preceded by a certain transitional stage[59].

of tenders and auctions is a progressive mechanism for supporting alternative energy sources . It was used to develop wind energy in Ireland, France, and Denmark. Its essence is that a competition is announced in the country for the right to receive the most economically advantageous contract for the construction of "green" electricity facilities, and its winner receives full or partial state financing of the construction. The disadvantage of the system is that investors can offer an economically unreasonable low price to win the tender, and then not implement the project. Currently, more than 80 countries of the world use the auction procedure as a means of stimulating the production of energy from alternative sources. In Ukraine, auctions for the distribution of support quotas in the production of electric energy from alternative energy sources are being implemented from July 1, 2019 and will be held until December 31, 2029 in accordance with the auction schedule for the corresponding year [60]. So, the support auctions could start working at the end of 2019, as it was directly foreseen by the amendments to the Law of Ukraine "On Alternative Energy Sources". However, for more than three years, the auction mechanism defined by the law and by-laws has not been working, and no new regional, multi-technological, or "RES + energy storage systems" projects have appeared in Ukraine. A legal obstacle is the absence of annual quotas determined by the Cabinet of Ministers of Ukraine for the possibility of holding auctions, provided for by legislation[61].

Another legal incentive mechanism, that is used in many EU countries, is the provision of *investment grants*. As foreign experience shows, these grants are issued to stimulate the production of electricity of alternative origin obtained with the help of new, innovative technologies. In particular, in the Republic of Finland, investment grants and subsidies are the only types of incentives for the use of alternative energy sources. Undoubtedly, targeted financing of scientific developments in the field of alternative energy sources, as well as their implementation, is one of the most effective ways to stimulate the development of alternative energy. This means of stimulation can be considered useful for Ukraine.

In European countries, *tax and customs incentives* remain an important and flexible means of incentives and often complement the main types of

[59] Платонова Є. О. Стимулювання розвитку альтернативної енергетики за законодавством Європейського Союзу. *Юридичний науковий електронний журнал.* 2021. № 1. С. 137–142.

[60] Про альтернативні джерела енергії: Закон України від 20 лютого 2003 року. *Офіційний вісник України*. 2003. № 12. Ст. 522.

[61] Керівники АСЕУ: правові підсумки 2022 року для галузі ВДЕ та перспективи 2023. URL: http://reform.energy/news/kerivniki-aseu-pravovi-pidsumki-2022-roku-dlya-galuzi-vde-ta-perspektivi-2023-21255 (дата звернення: 01.07.2023 року)

incentives. Thus, in the Netherlands, the production of electricity from alternative sources is stimulated by directing income tax to invest in alternative energy projects.

Some legal incentive mechanisms are widely used in the EU countries but have not been separately enshrined in domestic legislation. Among them, it is worth mentioning *low-interest loans* with longer repayment periods for producers of electricity from alternative energy sources, which are used by some EU countries, including Germany and the Netherlands[62]. Energy saving programs in Ukraine are mostly financed by banks on general terms, since there are no reliable economic incentives that would contribute to cheaper financing, both on the part of credit institutions and on the part of potential borrowers. That is why Ukraine has great potential for the use of preferential lending.

An important modern mechanism for stimulating the use of alternative energy sources is the involvement of citizens in the development of the field of renewable energy, a common form of which is the creation of *energy cooperatives* in Germany, Austria, Denmark, the Netherlands, and Sweden. The rapid development of energy cooperatives in foreign countries is due to the combination of initiatives of citizens who seek "decentralization of energy services", which are mainly concentrated in the hands of large businesses, and support from the state, which solves the energy problem by stimulating the introduction of alternative energy sources. At the same time, there are no special laws on energy cooperation, for example, in Germany and Austria. Instead, the legal status of energy cooperatives is governed by general cooperative laws and energy legislation. Compared to other organizational and legal forms of conducting economic activity in the energy sector, energy cooperatives have a number of advantages: relative simplicity of establishment and registration, democratic nature of internal procedures, wide autonomy in the formation of statutory documents, and regular control by cooperative unions. The experience of European countries in creating energy cooperatives should be applied in the legislation of Ukraine, using adaptive and flexible legal structures[63].

In the EU countries, in order to increase the efficiency of application, mechanisms for stimulating the use of alternative energy sources are often combined. It can be seen that the key to the success of a number of European countries in the field of alternative energy was precisely the

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[62] Кулик О.І. Способи стимулювання використання альтернативних джерел енергії за законодавством України та Європейського Союзу. *Підприємництво, господарство і право*. 2018. № 4. С. 86–91.

[63] Григор'єва Х.А. Аналіз законодавчого визначення енергетичного кооперативу. *Альтернативна енергетика: співпраця юридичної науки та бізнесу на шляху інноваційного розвитку*: зб. матеріалів круг. столу (Одеса, 4 груд. 2020 р.). Одеса: Видавничий дім "Гельветика", 2020. С. 6–9.

combination of various state support tools and their change in accordance with the conditions of development and use of alternative energy sources[64].

7.4. Green Deal and Ukraine: legal support of the energy transition

In December 2019, the EU announced the start of a new stage of its development based on the Green Deal. This strategic plan is not just another environmental slogan – its implementation is designed to achieve extremely ambitious goals, which are primarily a response to acute climate challenges. That is why the central element of the Green Deal is decarbonization, i.e. achieving zero carbon emissions. The decision to transform into a climate-neutral Europe by 2050 will entail a whole series of profound transformational measures, radical legislative changes, the introduction of essential protection mechanisms, etc. Such tectonic changes that will take place in the EU will directly affect Ukraine as well.

In our opinion, it is possible to single out several main types of influence of the Green Deal on Ukraine:

1) *ideological* – gaining more and more popularity in the world, the greening trend strengthens its influence on the transformation of the worldview, increasing the ecological culture of the population. This dimension of the impact of the Green Deal should be reflected in the educational environment, including in the direction of activation of environmental and legal education;

2) *political* – approval and further implementation of the Green Deal concept, in particular in the EU, will have a powerful impact on the development and implementation of domestic policy, primarily its energy, agricultural, industrial and environmental components. Currently, the political influence is already quite noticeable, it is accompanied by political statements about the readiness of Ukraine to cooperate with the EU in the direction of the implementation of the Green Deal, the formation of relevant coordinating institutions. However, Ukraine's political response to the EU's greening choice lacks the main thing: a clear conceptual basis and a strategic vision of Ukraine in the process that are being initiated in Europe;

3) *economic* – this influence will grow, because the most tangible changes are still ahead, when the EU, as part of the implementation of the Green Deal, will begin to introduce specific requirements for products that can be imported into its territory. A completely logical expectation, which is

[64] Платонова Є.О. Державна підтримка альтернативної енергетики за законодавством Європейського Союзу та України. *Аграрне, земельне, екологічне, трудове право та право соціального забезпечення: здобутки та перспективи розвитку в Україні:* тези доповідей учасників всеукр. дист.наук.-практ. конф. до 10-річчя створення однойменних кафедр (м. Київ, 12 березня 2021 р.) / за заг.ред. проф. М.І. Іншина, за редакцією проф. В.В. Носіка, доц. Т.Г. Ковальчук, ас. М.Б. Мельник. Київ: Освіта України, 2021. С. 272–275.

quite lively discussed in foreign and domestic scientific literature, is the introduction of mechanisms for searching for the "carbon footprint". This will be a natural decision since the limitation in own carbon emissions cannot be accompanied by the import of cheaper products that are produced without such limitations. Unless every country in the world has a "carbon cost", it is illogical to apply this to products produced in the EU[65]. Such inconsistency, firstly, will lead to a decrease in the competitiveness of European producers, and secondly, it will nullify the EU's efforts to overcome climate problems. Therefore, the prospective search for the "carbon footprint" can become a difficult barrier for domestic products, and therefore this issue should be actively resolved today. One should especially take into account the fact that it will be even more difficult for Ukrainian businesses to adapt to new environmental conditions since it does not benefit from the European level of protectionism, which means it will be forced to either meet the corresponding internal EU requirements on its own or lose this market;

4) *social* influence has two dimensions: strategic and tactical. The strategic impact that will occur due to increasing environmental requirements is certainly positive, as it meets the goals of sustainable development, and ensures the realization of the human right to a favorable environment. However, the tactical dimension of social influence requires considerable attention, control and elaboration. Such a short-term impact will primarily be manifested through how the economy will respond to greening. The first inevitable consequence is an increase in the price of products since innovations and modernization of enterprise are paid, as a rule, by the end consumer. Against the background of the falling standard of living and the impoverishment of the population of Ukraine, the outflow of young people abroad, the short-term social consequences of greening can be quite tangible and ambiguously perceived in society;

5) *the legal influence* will certainly occur, and its degree will depend on whether Ukraine will undertake certain official obligations regarding the implementation of the European Green Deal. Currently, Ukraine already has legal developments in the field of climate protection. In particular, the Law of Ukraine "On Principles of Monitoring, Reporting and Verification of Greenhouse Gas Emissions" was adopted[66], as well as the Concept of State Policy Implementation in the Field of Climate Change until 2030 was

[65] Şahin G., Yitgin B. Effects of the European Green Deal on Turkey's electricity market. *The Journal of Business, Economic and Management Research.* 2021. Vol. 4 (1). R. 40–58.

[66] Про засади моніторингу, звітності та верифікації викидів парникових газів: Закон України від 12.12.2019 року. *Відомості Верховної Ради України.* 2020. № 22. Ст. 150.

approved[67]. However, in the light of the political steps taken, the involvement of Ukraine in the European Green Deal involves new obligations of Ukraine, which will require not only the review and coordination of national and regional strategies for the development of economic sectors in terms of their climate ambition but also significant work on the development, adoption and provision an effective legal framework in the field of climate change[68].

In our opinion, first of all, the greening trend will be reflected in the energy and agrarian legislation. This is explained by the fact that, firstly, the most radical transformations [69]planned by the Green Deal are aimed at energy and agriculture, and secondly, it is precisely these branches of our state's economy that form the material product.

Based on the analyzed impacts of the European version of the Green Deal on our country, it can be concluded that there are two main scenarios of such an impact: controlled and uncontrolled. In the event that Ukraine takes a passive position, i.e. does not adopt any organizational, institutional and legal changes, does not purposefully prepare legislation and does not build a plan of its actions, primarily of a protective nature, aimed at

[67] Про схвалення Концепції реалізації державної політики у сфері зміни клімату на період до 2030 року: розпорядження Кабінету Міністрів України від 7 грудня 2016 р. № 932-р. *Офіційний вісник України*. 2016. № 99. Стор. 269. Ст. 3236.

[68] Копиця Є. М. Екологічне нормування у сфері зміни клімату в контексті імплементації Європейського зеленого курсу в Україні. *Збірник наукових праць ЛОГОΣ*. 2020. P. 48–50. URL: https://ojs.ukrlogos.in.ua/index.php/logos/article/view/6061 (дата звернення: 10.02.2021 року)

[69] Харитонова Т. Є., Григор'єва Х. А. Енергетичний складник українського Green Deal: аналіз правових передумов. *Юридичний науковий електронний журнал.* № 2. С. 149–154; Харитонова Т. Є. Green Deal та його реалізація в аграрному секторі України. *Аграрне, земельне, екологічне, трудове та право соціального забезпечення: здобутки та перспективи розвитку в Україні (до 10-річчя створення однойменних кафедр):* матеріали Всеукр. дистанц. наук.-практ. конф. (Київ, 12 березня 2021 року). Київ, 2021. С. 116–119; Григор'єва Х. А. Вплив європейського курсу Green Deal на Україну: завдання для юридичної науки. *Організація юридичної науки та освіти в Україні й світі: історичний досвід, сучасний стан та майбутні перспективи:* матеріали XI Міжнар. наук.-практ. конф. (Київ, 22 грудня 2020 року) до 85-ліття від дня народження та 55-ліття від початку наукової діяльності академіка НАН України Ю. С. Шемшученка. Київ: Ін-т держави і права імені В. М. Корецького НАН України, 2021. С. 156–159; Григор'єва Х. А. Вплив європейського GreenDeal на агробізнес України: цунамі еколого-правових вимог чи еволюційний трамплін? *Аграрне, земельне, екологічне, трудове та право соціального забезпечення: здобутки та перспективи розвитку в Україні (до 10-річчя створення однойменних кафедр):* матеріали Всеукр. дистанційної наук.-практ. конф. (Київ, 12 березня 2021 року). Київ, 2021. С. 25–28; Григор'єва Х. А. Перспективи енергетичного права: в орбіті екологізації. *До 60-річчя набуття чинності Закону "Про охорону природи Української РСР": екологічне законодавство України через призму його історичного розвитку:* матеріали Міжнар. дистанц. наук.-практ. конф. (Київ, 12 квітня 2021 року). Київ, 2021. С. 52–56.

mitigating the negative consequences of the adaptive period – in this case the impact of the European Green Deal will be chaotic, painful, and have uncontrollable consequences.

We believe that one should not be deceived by the fact that in the case of mimicry under European legislation, Ukraine will bypass the uncontrolled path of influence of the Green Deal. In our opinion, the mechanical adoption of the legal mechanisms of the EU into the legal system of Ukraine also exposes our state to the loss of control over the relevant social relations and their qualitative, optimal development. It is necessary to understand that the European Green Deal is not a certain universal panacea for climate change, it is " a product of compromise that reflects the diversity (and disagreements) between EU member states regarding the content of the ecological transition[70]. " That is, it is a certain individual plan of the EU, which primarily takes into account the problems, starting conditions and opportunities of the EU itself, and not of any other country.

The controlled influence of the European Green Deal on Ukraine can be achieved only in the case of the development and adoption of a non-politicized, real and scientifically based domestic Green Deal. This will make it possible to take into account, on the one hand, the main vectors of the influence of the European green course on social relations in Ukraine, the main goals and tasks on the way to fight against climate change, and on the other hand, it will make it possible to take into account the national features with which our state is on its way environmentalization.

the idea of adequate synchronization should be the conceptual idea that should form the basis of further improvement of domestic law in light of the implementation of the European Green Deal. The main essence of this conceptual idea is to develop the optimal pace, scope, set of legal mechanisms, and principles of further improvement of Ukrainian legislation, taking into account the general green course of the EU, but with a clear vision of national guidelines, national tasks and peculiarities. That is, the implementation of the idea of synchronization involves focusing on the ambitious goals of the EU, taking into account its experience and the chosen path, but not mimicking European law when developing one's balanced path to achieving sustainable development. This is important, because as part of the general implementation of the idea of sustainable development, the world's leading countries are developing their strategies for greening the economy, based on national priorities and problems, taking into account the starting conditions and opportunities of the state, business and society. That is, the world shows gradual progress towards environmental changes, but each state must choose its own pace and direction, so as not to lose equally important components of social life due to hasty environmental decisions. It is indicative that even within the EU countries have different potentials for

[70] Ossewaarde M., Ossewaarde-Lowtoo R. The EU's Green Deal: A Third Alternative to Green Growth and Degrowth? *Sustainability*. 2020 Vol. 12. R. 9825.

greening, and " the degree of this challenge will not be the same for all member states"[71].

We cannot ignore the fact that green transformations are expensive. As the researchers note, "substantial funds are needed for the global transition to a socially and ecologically just economy of renewable energy sources[72]". That is why the opinion is expressed that the Green Deal is available only to rich countries. We believe that this only further confirms our thesis about the need for adequate synchronization based on the development of the national Green Deal-Ukraine. Indeed, the implementation of such ambitious projects that are planned in the EU (budget for greening – according to various estimates, about 3 trillion euros), China (3.4 trillion yuan New Green Infrastructure of China), the United States (Biden's pre-election plan to direct 2 trillion dollars to Green New Deal), South Korea (US$ 142.62 billion), etc., are completely unattainable for Ukraine at the moment. However, this cannot become a political justification for further inaction in the direction of making a significant contribution to the common cause of combating climate change. The economic gap between countries, the presence of their own "pain points" and specific growth points in each country – all these aspects prove the need to adopt not a single, universal Green Deal, but the necessary number of its variations, united by a single conceptual goal – the stabilization of the climate on the planet. This opinion is illustrated by the analysis of existing ecological and climatic strategies, which have their specific features.

For example, in South Korea, the Green New Deal is one of the two components of the "New Deal" (Digital New Deal and Green New Deal). The social component of the strategy is significant, as Korea's New Deal has set a short-term goal of creating 340,000 jobs within two years to boost production by KRW 49 trillion and reduce social costs by KRW 40 trillion[73]. To attract broad sections of society to the side of greening changes, the majority of which is always conservative and wary of significant changes in the usual way of life, social perspectives find their place in other strategies as well. For example, the American version of the Green New Deal proposes to "create millions of good, high-wage jobs in the United States" through a series of national programs, including "making public investments in research and development of new clean and renewable energy technologies and industries". That is, one of the main differences of the Green Deal from previous political measures is that it not

[71] Zlaugotne B., Ievina L., Azis R., Baranenko D., Blumberga D. GHG Performance Evaluation in Green Deal Context. *Environmental and Climate Technologies.* 2020. Vol. 24. Issue 1 . R. 431–441.

[72] Slatin C. Workers in the Twenty-First Century: Green New Deal or More of the Same? *New Solutions-A Journal of Environmental and Occupational Health Policy.* 2020. Vol. 29 . Issue 4. R. 8 – 484 .

[73] Jae-Hyup L., Jisuk W. Green New Deal Policy of South Korea: Policy Innovation for a Sustainability Transition. *Sustainability.* 2020. Vol. 12.

only responds to the climate crisis but also tries to eradicate social inequality and poverty[74]. The environmental movement in Canada also received a social color, albeit of a slightly different nature. In May 2019, a coalition of civil society representatives – academics, trade union representatives, indigenous peoples and youth – launched the Pact Green New Deal in Canada[75]. That is, Canada demonstrated the birth of a national Green Deal "from the bottom up", as a result of which the environmental strategy became a demand of an active society, rather than a product of government policy. However, at the same time, Canada has its internal contradictions of a social nature, in particular the tangible opposition of workers in the traditional energy industry, which is built on the extraction of oil sands.

For a comprehensive analysis of such an ambitious project as the Green Deal, it should be noted that it has quite serious criticism. For example, in the authoritative publication Nature, the results of a study were published, according to which the reverse side of the European environmental policy was demonstrated. Thus, scientists believe that EU member states transfer environmental damage to other countries by taking credit for green policies at home. For example, between 1990 and 2014, European forests expanded by 9%, i.e. to an area roughly equivalent to the size of Greece (13 million hectares), but elsewhere about 11 million hectares of forests were cut down to grow crops consumed within the EU. Three-quarters of this deforestation was linked to oilseed production in Brazil and Indonesia, regions of unparalleled biodiversity, home to the world's largest carbon sinks, critical to mitigating climate change[76].

Other studies critically analyze the European Green Deal, pointing out some of its shortcomings, for example: it lacks a vision of a fair, low-carbon European economy; available resources are insufficient to achieve the stated goals; and implementation tools are limited[77]. In addition, there were frequent fears in the literature that the coronavirus pandemic could prevent the full implementation of the Green Deal[78].

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[74] Jae-Hyup L., Jisuk W. Green New Deal Policy of South Korea: Policy Innovation for a Sustainability Transition. *Sustainability.* 2020. Vol. 12.

[75] MacArthur JL , Hoicka CE , Castleden H. , Das R., Lieu J. Canada's Green New Deal: Forging the socio-political foundations of climate resilient infrastructure? *Energy Research & Social Science* . 2020. Vol. 65 . URL: https://www.sciencedirect.com/science/article/pii/S2214629620300190?via%3Dihub (access date: February 10, 2021)

[76] Fuchs R., Brown C., Rounsevell M. Europe's Green Deal offshores environmental damage to other nations. *Nature.* 2020. Vol. 586. R. 671–674.

[77] Pianta M., Lucchese M. Rethinking the European Green Deal An Industrial Policy for a Just Transition in Europe. *Review of Radical Political Economics.* 2020. Vol. 52. Issue4 . P. 641 – 633.

[78] De Gatta Sanchez, Fernandez D. The ambitious Green European Pact (European Green Deal). *Actualidad Juridica Ambiental.* 2020. Vol. 101. R. 78–109; Martin Pascual E. The European Green Deal: a possible green exit from the COVID-19 crisis? *Revista General De Derecho Europeo* . 2020. Vol. 51.

So, both the very concept of the Green Deal and its specific European implementation have both supporters and critics. For Ukraine, this should become an additional argument for the need to develop its greening project on the ideological basis of the Green Deal. The analysis of foreign practice and doctrine indicates that since the Green Deal concept is at the stage of dynamic development and is experiencing its formation, no unambiguous, proven, universal legal mechanisms have yet been developed – each country is currently looking for optimal legal solutions based on its national conditions. It is extremely important to decide how to implement relevant ideas in domestic legislation. However, we are convinced that any political and legal commitments of Ukraine regarding the Green Deal must be preceded by full, thorough and independent preparation. In particular, in the direction of conducting proper economic calculations. In relation to this issue, it should be noted that in the foreign doctrine, especially the American one, a wide debate has unfolded during the last two years, which can be figuratively summarized as follows: "Who will pay for the Green New Deal?". This issue is extremely important and relevant not only for the USA – it is also key for Ukraine. The cost of the Green Deal is usually estimated in financial terms, as a result of adding up the projected costs of various programs, which leads to the conclusion that paying for greening requires a significant increase in taxes. However, recent studies prove that a more complex approach is more adequate, namely: the value of the Green Deal should be measured in real resources, not in financial costs[79]. To implement such a strategic calculation, teams of the best specialists from various spheres of the economy should be involved. Active rule-making work should take place only after appropriate economic preparation[80].

In order for the influence of the Green Deal on our country to be controlled and not turn into a "natural disaster", we see the only possible way – the development and adoption of the national Green Deal – i.e. a strategic plan of change adequate for Ukraine, which will become a national contribution to the fight against change climate The core of such a national Green Deal should predictably be the energy component, the development of which should primarily take into account national features and needs, and not foreign legal decisions in this area.

[79] Nersisyan Y., Wray RL Can we afford the Green New Deal? *Journal of Post Keynesian Economics.* 2020. DOI: 10.1080/01603477.2020.1835499

[80] Григор'єва Х. А. Green Deal та Україна: роздуми про правові перспективи. *Екологічне право*. 2021. № 1–4. С. 25–32.