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ANALYSIS OF THE PRE-WAR STAGE OF CLIMATE POLICY IMPLEMENTATION IN THE FIELD OF WASTE MANAGEMENT OF THE HOTEL AND RESTAURANT BUSINESS IN UKRAINE (2016-2021)

Abstract. Hospitality establishments (the international acronym HORECA – from the abbreviation hotel, restaurant, cafe) in Ukraine include enterprises provided DSTU (National standart of Ukraine) 4527:2006 «Tourist services. Means of accommodation. Terms and definitions», DSTU 3862-99 "Restaurant management. Terms and definitions». According to the Cambridge Institute for Sustainability Leadership, tourism accounts for around 5% of global greenhouse gas (GHG) emissions, and this figure is expected to increase by 130% by 2035 [31]. The hotel industry accounts for about 1% of global emissions [34]. According to the Global Hotel Decarbonization Report published by the Sustainable Hospitality Alliance in 2017, the hotel sector needs to reduce GHG emissions per room per year by 66% by



2030 (compared to the 2010 baseline) and by 90% by 2050 [26]. The Paris Climate Agreement [25] adopted in 2015, thus, the signatory countries agreed to keep the level of global warming lower than 2°C from the middle of the 20th century – starting from the time of active industrial development in the world. The Paris Agreement was signed by 197 countries and ratified by 194 participants as of 2022. Ukraine ratified the Paris Climate Agreement in 2016. We systematized normative legal acts in the field of climate policy in the world, Europe, and Ukraine. The main achievement of the pre-war stage of the climate policy's implementation in the field of waste management in the hotel and restaurant business in Ukraine (2016-2021) is making the first steps in the right direction. What has been done in this direction in the field of hospitality? Are the change statistics kept, surveys conducted? Are the government, business, non-profit organizations and experts cooperating with each other? What role does rational waste management play in reducing the climate footprint of a hospitality establishment? We investigate these questions in this article.

Keywords: HORECA, climate policy, waste management, Zero Waste, Zero Waste Business, solid waste management, environmental (ecological) certification, greenhouse gases (GHG), carbon footprint, climatic changes.

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АНАЛІЗ ДОВОЄННОГО ЕТАПУ РЕАЛІЗАЦІЇ КЛІМАТИЧНОЇ ПОЛІТИКИ У СФЕРІ ПОВОДЖЕННЯ З ВІДХОДАМИ ГОТЕЛЬНО-РЕСТОРАННОГО БІЗНЕСУ В УКРАЇНІ (2016-2021)

Анотація. До закладів гостинності (міжнародний акронім HORECA – від скорочених hotel, restaurant, cafe) в Україні відносять підприємства, передбачені



ДСТУ 4527:2006 «Послуги туристичні. Засоби розміщення. Терміни та визначення», ДСТУ 3862-99 «Ресторанне господарство. Терміни та визначення». За даними Кембриджського інституту лідерства в галузі сталого розвитку, на частку туризму припадає близько 5% глобальних викидів парникових газів (ПГ), і очікується, що ця цифра зросте на 130% до 2035 року [31]. На готельну індустрію припадає близько 1% глобальних викидів [34]. Відповідно до Глобального звіту про декарбонізацію готелів, опублікованого Sustainable Hospitality Alliance у 2017 році до 2030 року готельній сфері необхідно буде скоротити викиди ПГ на номер в рік на 66% (порівняно з базовим рівнем 2010 року), а до 2050 на 90% [26]. Паризьку кліматичну угоду [25] прийняли у 2015 році, тим самим країни-підписанти погодилися втримувати рівень ГП на рівні, нижчому за 2°C від середини ХХ ст. – саме тоді у світі почався час активного промислового розвитку. Паризьку угоду підписали 197 країн і ратифікували станом на 2022 вже 194 учасники. Україна ратифікувала Паризьку кліматичну угоду у 2016 році. Нами було систематизовано нормативно-правові акти в галузі кліматичної політики в світі, Європі, Україні. Основним досягненням довоєнного етапу реалізації кліматичної політики у сфері поводження з відходами готельно-ресторанного бізнесу в Україні (2016-2021) є закладання фундаменту – ратифікація Паризької угоди, розробка і затвердження кліматичної політики, стратегії поводження з відходами. Що зроблено в цьому напрямку в сфері гостинності? Чи ведеться статистика змін, проводяться опитування? Чи співпрацює влада, бізнес, некомерційні організації, експерти? Яку роль відіграє раціональне поводження з відходами в зменшенні кліматичного сліду закладу гостинності? Ці питання ми досліджуємо в даній статті.

Ключові слова: HORECA, кліматична політика, поводження з відходами, Zero Waste (нуль відходів), Zero Waste Business, менеджмент твердих побутових відходів, екологічна сертифікація, парникові гази (ПГ), вуглецевий слід, кліматичні зміни.

Problem formulation. Hospitality establishments (the international acronym HORECA – from the abbreviation hotel, restaurant, cafe) in Ukraine include enterprises provided DSTU (National standart of Ukraine) 4527:2006 «Tourist services. Means of accommodation. Terms and definitions», DSTU 3862-99 "Restaurant management. Terms and definitions». According to the Cambridge Institute for Sustainability Leadership, tourism accounts for around 5% of global GHG emissions, and this figure is expected to increase by 130% by 2035 [31]. The hotel industry accounts for about 1% of global emissions [34]. According to the Global Hotel Decarbonization Report published by the Sustainable Hospitality Alliance in 2017, the hotel sector will need to reduce GHG emissions per room per year by 66% by 2030 (compared to the 2010 baseline) and by 90% by 2050 [26]. The challenge is not simple: find a way to grow the industry, welcome more guests and



build more facilities, and at the same time reduce the sector's carbon emissions to achieve full decarbonization by 2050 [34].

According to different estimates, each guest night creates an average of 14 kg of CO₂ emissions (direct emissions related to energy consumption; excluding gastronomy). However, the documented emission range varies considerably, from 0.1 kg CO₂ to 260 kg CO₂ per guest night, depending on the type of accommodation [33]. The greatest impact of HORECA on the environment occurs in the spheres – water, waste and energy use. At the same time, more waste is generated than in everyday life.

Although the accommodation sector itself leads to climate change, climate change itself affects this sector more and more every year. Risks for establishments are higher in rural areas, because they are more dependent on weather conditions. Cities, on the other hand, are more exposed to heat waves, which can be a deterrent for tourists. Thus, according to a 2010 survey, after a hot day, a quarter of tourists do not want to visit Vienna in the summer time again [33].

Ukraine ratified the Paris Climate Agreement in 2016. What has been done in this direction in the field of hospitality? Are change statistics kept, surveys conducted? Are the government, business, non-profit organizations and experts cooperating? What role does rational waste management play in reducing the climate footprint of a hospitality establishment? We examine these questions in this article.

Analysis of recent research and publications. K. Abashina, E. Zasyadko, I. Myronova, T. Omelyanenko, A. Prokayeva etc. investigated climate policy as an important issue, particularly in the field of waste management in the hospitality sector.

The purpose of the article: to analyze the pre-war stage of climate policy implementation in the field of waste management of the hotel and restaurant business in Ukraine (2016-2021).

Tasks: 1) systematization of normative legal acts in the field of climate policy in the world, Europe, Ukraine; 2) determining the share of the hospitality sector in the total volume of greenhouse gas (GHG) emissions of Ukraine; 3) research on the role of government, business, and the public in the implementation of the Paris Climate Agreement in the field of waste management for the hotel and restaurant business in Ukraine in the pre-war period (2016-2021).

Presenting main material. The Paris Climate Agreement was adopted in 2015. Thus, the signatory countries agreed to keep the level of global warming lower than 2°C from the middle of the 20th century – starting from the time of active industrial development in the world. Countries that signed the agreement actually pledged to make every effort to limit the rise in temperature to 1.5°C by the end of the century. Quite an ambitious goal, given that this indicator has already almost reached 1°C, and the rate of warming is increasing every year [11]. However, it must be achieved if we want to keep the world habitable as we know it – these are the predictions of scientists from the Intergovernmental Panel on Climate Change





(Intergovernmental Panel on Climate Change, IPCC), the largest worldwide body that analyzes scientific data on the current state of the climate and its likely development reports and forecasts can be found at the link [23].

The Paris Agreement is not the first treaty that unites efforts in the fight against climate change. The United Nations Framework Convention on Climate Change (UNFCCC) was signed in 1992 [35]. 154 UNFCCC signatories agreed to reduce GHGs and for the first time officially recognized the threat of climate change. The convention entered into force in 1994, and already in 1995 the first Conference of the Parties (COP) was held, where countries began to discuss how to achieve the goal of reducing GHG emissions. Ukraine signed the UNFCCC 1992, ratified it in 1996.

With joint efforts of all countries to achieve the global goal within the framework of the UNFCCC, various tools were developed. After several conferences in 1998, the Kyoto Protocol [30] was signed, which entered into force in 2005. Unlike the Convention, it already contained clear goals for countries to reduce their emissions. On average, countries had to reduce emissions from the base year (1990 in most countries). However, in the first period (2008-2012), these goals were set only for 37 developed countries and the EU. So even though these countries met their target on average, global emissions still increased. Since after the completion of the first stage, it was not possible to add new countries and define clear goals and deadlines, the Kyoto Protocol became no longer valid, especially since the two largest GHG emitters did not join it: China, which had no obligations as a developing country, and the highly developed but non-participating USA [11]. The Kyoto Protocol Ukraine was ratified in Ukraine in 2004.

Therefore, within the framework of the UNFCCC, the Kyoto Protocol was replaced with the The Paris Agreement [25], which was signed by 197 participating countries and ratified by 194 as of 2022.

The main feature of the Paris Agreement is that it does not force countries to do anything specific. The countries that signed it recognized the threat of climate change and agreed to combat it. How exactly to counteract – each country determines independently. Before signing the Paris Agreement, the parties had to determine the so-called Nationally Determined Contributions (NDC) in which they determined how much they plan to reduce greenhouse emissions. The final NDC was presented at the COP26 at the end of 2020, the year the Paris Agreement entered into force. More details about the Nationally Determined Contribution of Ukraine you can read at the link [19] (there is a part on waste).

What distinguishes the Paris Agreement from the Kyoto Protocol is the following mechanism: instead of imposing obligations, the agreement allows each country to independently assess its ability to reduce emissions and set a realistic and ambitious goal. The countries will present their contributions and the level of achievement of the goals at the next conferences, in particular, the reporting on the NDC will be carried out by the end of 2025 and new goals will be set by 2035. In



particular, COP27 will take place in November 2022 in Egypt [29], and COP28 in the UAE [28].

The agreement also does not provide for mechanisms that would oblige the parties to comply with it. Implementation of commitments depends on the political will of country leaders, but a «non-punitive» committee evaluates countries' contributions and reports annually. In addition, the NDC of each country must be revised every five years (the next time at the end of 2025) – in the direction of a more ambitious one. In addition to the general purpose, the agreement also contains specific provisions. It envisages, in particular, that developed countries will support less developed ones both in the fight against climate change and also adapting to it. Fighting and mitigating means reducing and limiting GHG emissions, so working with the causes. And the adaptation measures reduce vulnerability to the effects of climate change. In general, the agreement emphasizes voluntariness, transparency, ambition and cooperation of countries to achieve the goals of the agreement (Article 6 is about cooperation). It also emphasizes the importance of developing and transferring new technologies and informing the public about climate change. One option for countries is to invest in climate-friendly businesses or activities on the territory of other countries, but use the result to achieve their goal. In this way, the total number of emissions will decrease, and achieving the goals will become even more profitable for countries. Similar mechanisms existed in the Kyoto Protocol, but their imperfections led to trading of emission allowances instead of real action. That is, countries that did not meet their emission reduction targets could pay those that «overachieved» the plan and use the acquired «surplus» to compensate for their «shortfall». So now the countries are trying to come to an agreement so that the mechanism provided for in the sixth article stimulates precisely the reduction of emissions.

In addition, every year the Climate Change Performance Index [24] is calculated, as of 2022, this index included 64 countries, Ukraine ranks 20th. Unfortunately, such a good indicator for Ukraine in the rating is not related to the implementation of a climate policy, but to the fact that 1990 was chosen as the base year for measurements, and after the collapse of the Soviet Union (1991), Ukraine's economic indicators decreased, big plants shot down and, accordingly, greenhouse gas emissions decreased too.

As for the EU's climate policy, more details contain the Climate policy of the EU (2050 long-term strategy) [18].

According to the Association agreements with the EU Ukrainian legislation should be harmonized with the EU legislation. Ukraine ratified The Paris Climate Agreement in 2016, there are results of the First Nationally Determined Contribution [36]. As of 2019, greenhouse gas emissions in Ukraine decreased by 62.4% from the 1990 level (including the sector «Land use, changes in land use and forestry» (hereinafter – LULUCF) and by 64.8% from the 1990 level (excluding the LULUCF sector). Based on geographical, economic and social circumstances, Ukraine has





committed itself to achieving the goal of reducing greenhouse gas emissions by 65% by 2030 compared to 1990, including the LULUCF sector. Achieving carbon neutrality until 2060, as provided for in the National Economic Strategy until 2030, approved by the order of the Cabinet of Ministers of Ukraine dated March 3, 2021 No. 179.

A number of normative legislations on its implementation have been developed, in particular:

1. Low-carbon development strategy of Ukraine until 2050 (2018)
2. The concept of the state policy's implementation in the field of climate change for the period up to 2030 (2018)
3. Action plan for the implementation of the Concept implementation of state policy in the field of climate change for the period up to 2030 (2018)
4. Law "On the Principles of Monitoring, Reporting and Verification of Greenhouse Gas Emissions"(2020)
5. The procedure for verifying the operator's report on greenhouse gas emissions (2020)
6. On the approval of the Procedure for Monitoring and Reporting on Greenhouse Gas Emissions (2020)
7. On the approval of the Concept of the State scientific and technical program in the field of climate change until 2030 (2021)
8. On the approval of the Strategy for Environmental Security and Adaptation to Climate Change for the period up to 2030 (2021)
9. Project of the National Cadaster of anthropogenic emissions from sources and absorption by sinks of GHG in Ukraine for 1990-2020 (in English in accordance with the requirements of the Secretariat of the UN Framework Convention on Climate Change) for public review and receiving comments and suggestions (2022)

In addition, the National Center for the Inventory of Greenhouse Gases carries out an annual National inventory of GHG [17].

The prerequisites for the preparation of the Second Nationally Determined Contribution to the Paris Agreement are outlined in this document [9]. Action plans for adaptation to the consequences of climate change have also been developed in a number of settlements, in particular, such a Plan for the city of Zaporizhya (2020) can be found at the link [10].

The importance of the topic of climate policy is shown in the results of the World Bank research «Assessment of impacts, opportunities and priorities for Ukraine in connection with climate change» (December 2021) [14].

The public is also actively working in this area, in particular Ukrainian climate network [7] – group of non-governmental environmental organizations of Ukraine on climate change. On the initiative of the center of environmental initiatives «Ekodiya» the Road map of Ukraine's climate goals until 2030. Public vision (2020) was developed [3].



Unfortunately, we have not found in the Tourism Development Strategy of Ukraine until 2026 information that includes a climate policy, and this is an issue that needs to be corrected during the post-war modernization of Ukraine.

As for the implementation of climate policy in the field of hospitality and the field of waste management, they are regulated by:

1. DBN (State building standards) V.2.2-20:2008 "Buildings and structures. Hotels" with changes No. 1 from 2019 (2008, with changes in 2019)
2. National waste management strategy of Ukraine until 2030 (2017)
3. National waste management plan until 2030 (2019).
4. Law "On limiting the circulation of plastic bags in the territory of Ukraine" (2021)
5. Methodological recommendations for the organization of collection, transportation, processing and disposal of household waste (2010).

One of Goals of Ukraine's climate policy until 2030 is the introduction of a waste management hierarchy. Currently allocated are the 3-R hierarchy, the 5- or 7-level hierarchy. The most common is the one with 5 levels, and its main principles are: refuse, reduce, reuse, recycle, rot. Which are disclosed in more detail, for example, in this article [37].

The 7-R waste hierarchy scheme is presented in pict. 1.



Pict.1. Zero Waste Hierarchy in EU

In Ukraine, the most active representatives of the non-governmental sector in the field of waste are: Zero Waste Alliance Ukraine (unites 6 Ukrainian public organizations) [37] and The International Solid Waste Association Young Professional Group.

According to the project of the National Cadaster of Anthropogenic Emissions from Sources and Absorption by GHG Sinks, GHG emissions in Ukraine in 2020



amounted to 315.9 million tons of CO₂ equivalent (taking into account the sector "Land use, changes in land use and forestry") or 317.7 million tons of CO₂-equivalent (without taking into account LULUCF sector). GHG emissions in the "Waste" sector in 2020 amounted to almost 12 million tons of CO₂ eq. (3.9 % of total GHG emissions of Ukraine), in 1990, there were reported 12.4 million tons of CO₂ eq. This is 3.8 and 2.3% less than in 1990 and 2019. At the same time, 64.7 and 35.2% of the total emissions in the sector are accounted for by the categories "Disposal of solid waste at landfills" and "Management of domestic wastewater", respectively. The increase in methane emissions from solid waste disposal is related to the annual increase in the volume of waste generation and the dominant practice of their disposal. The "Waste" sector is the only one in which there was almost no decrease in greenhouse gas emissions compared to 1990. Methane emissions from solid waste disposal increased by 30.5% compared to 1990. [12].

According to the analytical review of the updated nationally determined contribution of Ukraine to the Paris Agreement (April 2021) [19] the relatively high cost of reducing GHG emissions from solid waste management – about 200 euros per 1 ton of CO₂ eq., due to the fact that there is a need to develop a new waste management system. The main sources of GHG emissions in this sector are methane emissions from landfills and wastewater treatment. According to the NDC2 plans, GHG emissions in the "Waste" sector will be reduced to 11.6 million tons of CO₂ eq. in 2030. To achieve this goal, the total costs should be approximately 2 billion euros during 2021-2030.

According to the same document, additional regulatory and economic mechanisms are necessary to achieve the nationwide goal of NDC2 and contribute to further significant reduction of GHG emissions: 1) credit programs for the development of infrastructure in the field of waste management, separate collection and processing of waste, and wastewater treatment; 2) stimulation of incineration (in our opinion, this is a very unproductive mechanism that is already abandoned in the civilized world, it is formulated in detail and with arguments in the article [16]) and electricity generation from landfill gas; 3) stimulation of methane recovery from wastewater treatment; 4) stimulation of organic waste composting (a very necessary mechanism, since organic waste makes up to 40-60% of the mixed solid waste (MSW) volume); 5) increase in tax on waste disposal; 6) introduction of circular economy principles and mechanisms. Regulatory mechanisms: 1) adoption of the framework legislation on waste management, which will meet European standards; 2) adoption of sectoral draft laws on various types of waste (packaging, electrical devices, batteries and accumulators, etc.); 3) policy formation and stimulation of circular economy development (creation of transparent and competitive markets for secondary raw materials by improving and harmonizing the legislation of Ukraine with the relevant legislation, norms and rules of the EU; stimulating the reduction of the volume of waste generation; simplifying the procedure for carrying out transactions with scrap metal; introducing a system of extended producer



responsibility implementation of a set of measures regarding the commercial development of industrial waste); 4) limiting the use of single-use plastic; 5) creation of a system of effective waste management and building a working infrastructure in cooperation with territorial communities; placement of waste disposal sites only in accordance with regional waste management plans; 6) stimulating the development of alternative types of fuel from solid household waste and industrial waste in the cement industry (in our opinion, this is a very unproductive mechanism – a veiled call to incineration, which is already being abandoned in the civilized world, this is formulated in detail and with arguments in the article [16].

In the "Waste" sector, Ukraine has the following challenges: 1) low tariffs for disposal and waste management; 2) lack of incentives to recycle solid household waste; 3) obsolescence of the regulatory framework. But, according to Sofia Julia Sydorenko, the head of the Zero Waste Alliance Ukraine, the main obstacle is the lack of focus on preventing the waste generation at the top of the waste management process, instead we are only dealing with the waste once it has already been generated.

According to the State Statistics Service in Ukraine in 2019, there were 5,335 accommodation establishments (including 3,165 hotels) with a total number of 370.5 thousand places, the number of visitors – 6.96 million people, and the number of overnight stays - 18.5 million person-nights [4]. This number is without taking into account the potential of sanatoriums, children's health camps, apartments that appear to be in private ownership. As for the restaurant industry, as of 2021, their number was 14.7 thousand, the cost of services is UAH 14.1 billion [6].

The norms of solid waste generation for hospitality establishments are calculated by local self-government bodies in accordance with the Rules for determining the norms for the provision of services for the removal of household waste (2010), unfortunately, they are calculated not by the actual amount of waste generated, but by the number of seats in the hospitality establishment. According to the norms approved in 2021 in Mykolaiv [8], 0.41 kg/day or 149.65 kg/year of solid waste is calculated for 1 place in a hotel, 0.68 kg/day or 248.2 kg for 1 place in a restaurant per year. But, in fact, these norms are applied when the hospitality establishment does not have its own site for collecting solid waste, but uses the site together with the residents of a multi storey building. In cases where the institution has its own waste collection site, it's paying for the actual removal of solid waste, which is the best option (the principle of "pay for as much as you throw away" – pay-as-you-throw).

We compared these standards across Ukraine and came to the conclusion that they can be considered average. Therefore, accordingly, accommodation facilities in Ukraine pay for the export of $370.5 \text{ thousand seats} \cdot 149.65 \text{ kg/year} = 55.4 \text{ thousand tons}$. On the other hand, for Mykolaiv hotels, this norm is $0.41 \text{ kg} \cdot \text{day/place}$. If we were to calculate based on the number of actual person/days of stay, then accommodation facilities would pay $18.5 \text{ million person-nights} \cdot 0.41 \text{ kg} \cdot \text{day/place} =$



7.59 thousand tons. Accordingly, if accommodation establishments paid for the actually generated waste, then there would be an incentive to reduce waste and separate its collection. If you use the norms, then accommodation establishments actually overpay by 7 times for the amount of solid waste removed (the practical part of the project will show whether this corresponds to reality, details will be available on the website www.zerowaste.org.ua in December 2022).

If we take the average paycheck for the RG institution = UAH 230, the profit is UAH 14.1 billion, then the number of visitors is 61.3 million/year. Then $61.3 \text{ million/year} \times 0.68 \text{ kg/day} = 41.7$ thousand tons of waste.

According to the above calculations, in comparison with HORECA regulations, 97.1 thousand tons of solid waste is generated (1% of the total amount of solid waste in Ukraine), correspondingly.

Starting from October 1, 2019, hotels in Ukraine are obliged to provide separate waste collection systems in residential and public premises in accordance with DBN B.2.2-20:2008, amendment No. 1 of 2019. However, very few hotels implement this norm due to a number of reasons, in particular – the lack of connections with carriers of recyclable materials, a false opinion about the primary need to build a waste processing plant (in the pre-war period in Ukraine, most recycling plants were understaffed), low motivation and no punishment.

It is very important to recognize and promote eco-conscious hotels, increase their visibility among professionals, investors and tourists, and separate them from greenwashing establishments. Greenwashing (by analogy with whitewash – "whitening") is a form of ecological marketing, in which "green" is widely used for PR, its purpose is to mislead the consumer about the goals of the organization or the producer, show the environmental sustainability of the product or service, to present them in a favorable light. Among a high-quality promotion of already existing environmental certification for hotels, specialized awards can be allocated. Allocations by tour operators, travel agents, booking platforms are also promising, but in this direction, you need to be even more careful with greenwashing.

In particular, the most famous program of environmental certification of hospitality establishments in Ukraine in the pre-war period was the "Green Key" program.

Green Key – an international environmental certification system, presented in 65 countries (2022), launched in Denmark in 2014 [27]. In Ukraine, certification is implemented by "Green Key" NGO Environmental Initiative [13].

In Ukraine, as of 2020, the "Green Key" sign got 7 hotels: 1 in Ivano-Frankivsk region (Radisson Blu Resort, Bukovel), 1 in Vasylkivsky district of Kyiv region (Maison Blanche, Mytnytsia village) and 5 in Kyiv city (Ecohouse Hotel Galera, Park Inn by Radisson Kyiv, Troyitska Radisson Blu Hotel, Radisson Blu Hotel Podil and InterContinental [5].

Green Key also has criteria for restaurant establishments, but there are no certified such enterprises in Ukraine.



In addition, in Ukraine, the system of voluntary environmental labeling of goods and services according to DSTU ISO 14024:2002 was developed and implemented by the All-Ukrainian public organization "Living Planet" in 2003 as part of the implementation of the project "Development of sustainable (balanced) production and consumption in Ukraine". The system is represented by a sign "Green Crane" [15]. The Hotel "Kovcheg" in the Carpathian mountains was marked with this ecological label, it's located on the top of the town of Magura [1].

Since 2018, a public organization has also been involved in the development of environmental requirements for goods and services in Ukraine – the All-Ukrainian Union of Environmental Labeling "Green Star", which, according to a relevant license agreement, gives certified manufacturers and suppliers the right to label their products with the Green Star environmental mark. As of the beginning of 2022, the hotel industry in Ukraine has got any "Green Star" mark [2].

In addition, there are other international environmental certifications, but they are not presented in Ukraine. In particular: Green Globe, EarthCheck, Net Zero, Travelife, TripAdvisor GreenLeaders, TRUE certification. Zero Waste Businesses Certification from Zero Waste Europe is currently under development.

The Hospitality Awards have been held for the past 10 years, one of the nominations there is "Best eco hotel", nomination criteria include construction from recycled materials, waste sorting) [20]. The winners in this nomination in different years were: Taor Karpaty Resort & Spa 2016-2019 [32] and Charlton Estate Bukovel'n (2020) [21].

Raising awareness of the facility's environmental friendliness among guests is very important. But scientific studies show that it is very difficult to influence the behavior of guests on the site, the best strategy is interaction at the stage of planning and booking [33]. Therefore, it is important to cooperate with booking platforms that currently process a significant share of global bookings and are often in the form of oligopolies (eg Booking, AirBnB). In particular, the booking platform Booking in Ukraine currently has a "sustainable development" filter, this booking platform has also developed a climate policy [22].

Conclusions. We systematized normative legal acts in the field of climate policy in the world, Europe, and Ukraine. The main achievement of the pre-war stage of the climate policy's implementation in the field of waste management in the hotel and restaurant business in Ukraine (2016-2021) is making the first steps in the right direction. Here we can name the ratification of the Paris Agreement, the development and approval of a new climate policy and waste management strategy. Experts, non-profit organizations and businesses have certain experience. The further fate of the implementation of the Paris Agreement depends on many factors, both external and internal. The main external factor is a full-scale war with Russia, which is already having a negative impact on NDC2. But, knowing that Ukraine will win, having chosen the democratic and European integration path, we are confident in the restoration of the country, including its ecological aspect. The following steps in the





implementation of a climate strategy should be: 1) a correct arrangement of modernization priorities - the ecological nature of modernization should become a main pillar and be implemented in all spheres, including tourism; 2) combining the efforts of the government, business, non-profit organizations and experts, 3) implementing concrete practical steps by all of the state's bodies – development and implementation of sectoral laws (on extended responsibility of the manufacturer, packaging, electrical devices, batteries and accumulators, etc.), implementing economic incentives for climate policy, in particular, we believe that public procurement should stimulate the development of environmental sustainability of enterprises (including in the hospitality sector), 4) raising the awareness of Ukrainians, including managers of hospitality establishments, about climate policy – popularization of environmental certification, awards, interaction with tour operators, travel agents, booking platforms, media; 5) clear measurement of the results of climate policy in this area – conducting waste audits to determine their share in the institution's GHG emissions, choosing a base year for the accommodation institution (currently, no hotel in Ukraine has data for this), further introduction of new statistical indicators at the state level (for example, carbon footprint per guest); 6) approbation of climate policies in the field of waste management at specific hospitality establishments (for working out mechanisms, developing road maps and further scaling within the country).

The article was written within the framework of the project "The implementation of Zero Waste principles in the hotel and restaurant business of Ukraine for their adaptation to the requirements of the Paris Climate Agreement in the conditions of the Russian invasion". The project is being implemented by the NGO "Ecological News", IG "Mariupol Zero Waste", Društvo Ekologi brez meja (Slovenia), with the support of Zero Waste Alliance Ukraine, Zero Waste Lviv and Europe Climate Foundation, the project term is July-December 2022, depending on the further results of the project it is possible follow on the website www.zerowaste.org.ua.

Література:

1. Гірський готель "Ковчег" [Електронний ресурс]. – Режим доступу: <http://www.megura.net/ua/>
2. Громадська організація «Всеукраїнська спілка екологічного маркування «Зелена Зірка» [Електронний ресурс]. – Режим доступу: <http://surl.li/cxhxr>
3. Дорожня карта кліматичних цілей України до 2030 року. Бачення громадськості [Електронний ресурс]. – Режим доступу: <https://ecoaction.org.ua/wp-content/uploads/2020/02/dk-clim-ciley-full3.pdf>
4. Економічна статистика / Економічна діяльність / Туризм [Електронний ресурс]. – Режим доступу: https://ukrstat.gov.ua/operativ/menu/menu_u/tur.htm.
5. Еко-тренд в сфері гостинності: економічні та соціальні аспекти [Електронний ресурс]. – Режим доступу: http://www.economy.nayka.com.ua/pdf/5_2020/84.pdf
6. Кількість ресторанів в Україні за 2020 рік скоротилася на 20% [Електронний ресурс]. – Режим доступу: <https://ua.interfax.com.ua/news/economic/733785.html#>.



7. Ми впливаємо на кліматичну політику [Електронний ресурс]. – Режим доступу: <http://www.climategroup.org.ua/>

8. Норми надання послуг з вивезення побутових відходів у м. Миколаєві [Електронний ресурс]. – Режим доступу: <http://surl.li/cxhhrq>

9. Передумови підготовки Другого Національно-визначеного внеску до Паризької угоди [Електронний ресурс]. – Режим доступу: <https://mepr.gov.ua/news/33080.html>

10. План дій з адаптації до наслідків зміни клімату міста Запоріжжя [Електронний ресурс]. – Режим доступу: https://zp.gov.ua/upload/editor/3_proekt_planu_dij.pdf

11. Політика. Зміна клімату. Як країни домовилися рятувати світ і підписали паризьку угоду [Електронний ресурс]. – Режим доступу: <http://surl.li/cxhhrv>

12. Проект Національного кадастру антропогенних викидів із джерел та абсорбції поглиначами парникових газів в Україні за 1990-2020 роки (англійською мовою відповідно до вимог Секретаріату Рамкової конвенції ООН про зміну клімату) для публічного ознайомлення та отримання зауважень і пропозицій [Електронний ресурс]. – Режим доступу: <http://surl.li/cxhph>

13. Прорами екологічного маркування та еко-сертифікації [Електронний ресурс]. – Режим доступу: <http://surl.li/cxhpm>

14. Результати дослідження Світового банку «Оцінка впливу, можливостей та пріоритетів для України у зв'язку зі зміною клімату» [Електронний ресурс]. – Режим доступу: <https://mepr.gov.ua/news/38732.html>

15. Український знак екологічного маркування «Зелений журавлик» (Хачові продукти) [Електронний ресурс]. – Режим доступу: <https://www.gpp.in.ua/znaki-markuvannya/zelenij-zhuravlik.html>

16. Що не так зі спалюванням сміття [Електронний ресурс]. – Режим доступу: <https://zerowaste.org.ua/2022/08/18/shho-ne-tak-zi-spalyuvannyam-smittya/>

17. Щорічна Національна інвентаризація парникових газів здійснюється Національним Центром інвентаризації парникових газів [Електронний ресурс]. – Режим доступу: https://nci.org.ua/inventory_activity.html

18. 2050 long-term strategy [Електронний ресурс]. – Режим доступу: https://ec.europa.eu/clima/eu-action/climate-strategies-targets/2050-long-term-strategy_en

19. Analytical review of the updated nationally determined contribution of Ukraine to the Paris Agreement [Електронний ресурс]. – Режим доступу: https://mepr.gov.ua/files/images/2021/29042021/Analytical%20Report_%20Project_EN.PDF

20. Best eco hotel [Електронний ресурс]. – Режим доступу: <https://hospitalityawards.international/hotels/nominations-criteria>

21. Charlton Estate Bukovel кращий екоготель 2020 [Електронний ресурс]. – Режим доступу: <https://hospitalityawards.international/winners/winners-2020>

22. Climate Action Plan [Електронний ресурс]. – Режим доступу: <https://www.sustainability.booking.com/industryinsights/climate-action-plan>

23. Climate Change 2022: Mitigation of Climate Change [Електронний ресурс]. – Режим доступу: <https://www.ipcc.ch/report/ar6/wg3/>

24. Climate Change Performance Index [Електронний ресурс]. – Режим доступу: <https://ccpi.org/downloads/>

25. EU responses to climate change [Електронний ресурс]. – Режим доступу: <https://www.europarl.europa.eu/news/en/headlines/society/20180703STO07129/eu-responses-to-climate-change>

26. Global Hotel Decarbonisation Report [Електронний ресурс]. – Режим доступу: <https://sustainablehospitalityalliance.org/wp-content/uploads/2020/05/Global-Hotel-Decarbonisation-Report-2017.pdf>



27. Green Key [Електронний ресурс]. – Режим доступу: <https://www.greenkey.global/>
28. How to obtain observer status [Електронний ресурс]. – Режим доступу: <https://unfccc.int/process-and-meetings/parties-non-party-stakeholders/non-party-stakeholders/overview/how-to-obtain-observer-status>
29. Introduction [Електронний ресурс]. – Режим доступу: <https://cop27.eg/#/presidency>
30. Kyoto protocol to the United Nations Framework Convention on Climate change [Електронний ресурс]. – Режим доступу: <https://unfccc.int/resource/docs/convkp/kpeng.pdf>
31. Sustainable Hospitality: Eco-Friendly Industry Trends and Tips for Hotels [Електронний ресурс]. – Режим доступу: <https://businessblog.trivago.com/sustainable-hospitality-trends-eco-friendly-hotel-tips>
32. Taor Karpaty Resort & Spa [Електронний ресурс]. – Режим доступу: <https://hospitalityawards.international/winners/winners-2019>
33. Tourist accommodation, climate change and mitigation: An assessment for Austria [Електронний ресурс]. – Режим доступу: <https://www.sciencedirect.com/science/article/pii/S2213078021000037>
34. UN Works with Global Hotel Industry to Reduce Emissions [Електронний ресурс]. – Режим доступу: <https://unfccc.int/news/un-works-with-global-hotel-industry-to-reduce-emissions>
35. United Nations framework Convention on climate change [Електронний ресурс]. – Режим доступу: <https://unfccc.int/resource/docs/convkp/conveng.pdf>
36. Updated Nationally Determined Contribution of Ukraine to the Paris Agreement [Електронний ресурс]. – Режим доступу: https://unfccc.int/sites/default/files/NDC/2022-06/Ukraine%20NDC_July%2031.pdf
37. Zero Waste — це рух, що об'єднує муніципалітети, міжнародні організації, місцеві ініціативи та окремих активістів з метою поступового зменшення кількості відходів [Електронний ресурс]. – Режим доступу: <https://zerowaste.org.ua/pro-zero-waste/>

References:

1. Girs'kij gotel' "Kovcheg" [Girsky hotel "Ark"]. www.megura.net Retrieved from <http://www.megura.net/ua/> [in Ukrainian].
2. Gromads'ka organizacija «Vseukraïns'ka spilka ekologichnogo markuvannja «Zelena Zirka» [Public organization “All-Ukrainian Union of Ecological Marking “Zelena Zirka”]. [surl.li](http://surl.li/cxhrx) Retrieved from <http://surl.li/cxhrx> [in Ukrainian].
3. Dorozhnja karta klimatichnih cilej Ukraïni do 2030 roku. Bachennja gromads'kosti [Road map of Ukraine's climate goals until 2030. Bachenny gromadskosti]. ecoaction.org.ua Retrieved from <https://ecoaction.org.ua/wp-content/uploads/2020/02/dk-clim-ciley-full3.pdf> [in Ukrainian].
4. Ekonomichna statistika / Ekonomichna dijal'nist' / Turizm [economic statistics / Economic activity / Tourism]. ukrstat.gov.ua Retrieved from https://ukrstat.gov.ua/operativ/menu/menu_u/tur.htm [in Ukrainian].
5. Eko-trend v sferi gostinnosti: ekonomichni ta social'ni aspekti [Eco-trend in the hotel industry: economic and social aspects]. www.economy.nayka.com.ua Retrieved from http://www.economy.nayka.com.ua/pdf/5_2020/84.pdf [in Ukrainian].
6. Kil'kist' restoraniv v Ukraïni za 2020 rik skorotilasja na 20% [The number of restaurants in Ukraine in 2020 decreased by 20%]. ua.interfax.com.ua Retrieved from <https://ua.interfax.com.ua/news/economic/733785.html#> [in Ukrainian].
7. Mi vplivaemo na klimatichnu politiku [We pour into climate policy]. www.climategroup.org.ua Retrieved from <http://www.climategroup.org.ua/> [in Ukrainian].
8. Normi nadannja poslug z vivezennja pobutovih vidhodiv u m. Mikolaevi [Norms of the duty of services for the vivenance of the butovyh vidkhodiv near the m. Mykolayevi]. [surl.li](http://surl.li/cxhrq) Retrieved from <http://surl.li/cxhrq> [in Ukrainian].



9. Peredumovi pidgotovki Drugogo Nacional'no-viznachenogo vnesku do Pariz'koï ugodi [Change your mind about the preparation of another nationally-appointed contribution to the Parisian favour]. *mepr.gov.ua* Retrieved from <https://mepr.gov.ua/news/33080.html> [in Ukrainian].
10. Plan dij z adaptacii do naslidkiv zmini klimatu mista Zaporizhzhja [Plan for adaptation to the last climate change in Zaporizhzhya]. *zp.gov.ua* Retrieved from https://zp.gov.ua/upload/editor/3_proekt__planu_dij.pdf [in Ukrainian].
11. Politika. Zmina klimatu. Jak kraïni domovilisja rjatuvati svit i pidpisali pariz'ku ugodu [Politics. Changing the climate. As the country did home to ryatuvati svit and signed parizku pleasing]. *surl.li* Retrieved from <http://surl.li/cxhrv> [in Ukrainian].
12. Proekt Nacional'nogo kadastru antropogennih vikidiv iz dzherel ta absorbcii poglinachami parnikovih gaziv v Ukraïni za 1990-2020 roki (anglijs'koju movoju vidpovidno do vimog Sekretariatu Ramkovoï konvencii OON pro zminu klimatu) dlja publichnogo oznajomlennja ta otrimannja zauvazhen' i propozicij [he project of the National Cadastra of the Anthropogenes Vikvik Iz Jerel is the absorbz with a slaughter about Pentikovikh Gazyv in Ukrainian for 1990-2020 Rocks (Angliysko Movoy Vimog Vimoga Secretary of the UN Klimata) for the Publinniy meaning of the reservation of the reservation of the reservation of the resisty]. *surl.li* Retrieved from <http://surl.li/cxhph> [in Ukrainian].
13. Prorami ekologichnogo markuvannja ta eko-sertifikacii [Prorams of environmental labeling and eco-certification]. *surl.li* Retrieved from <http://surl.li/cxhpm> [in Ukrainian].
14. Rezul'tati doslidzhennja Svitovogo banku «Ocinka vplivu, mozhlivostej ta prioritativ dlja Ukraïni u zv'jazku zi zminoju klimatu» [The results of the report of the Light Bank "Assessment of the impact, opportunities and priorities for Ukraine in connection with the changing climate"]. *mepr.gov.ua* Retrieved from <https://mepr.gov.ua/news/38732.html> [in Ukrainian].
15. Ukraïns'kij znak ekologichnogo markuvannja «Zelenij zhuravlik» (Hachovi produkti) [Ukrainian sign of eco-friendly labeling "Green Crane" (Khachov products)]. *www.gpp.in.ua* Retrieved from <https://www.gpp.in.ua/znaki-markuvannya/zelenij-zhuravlik.html> [in Ukrainian].
16. Shho ne tak zi spaljuvannjam smittja [What is wrong with the spalling of the mind]. Retrieved from <https://zerowaste.org.ua/2022/08/18/shho-ne-tak-zi-spalyuvannyam-smittja/> [in Ukrainian].
17. Shhorichna Nacional'na inventarizacija parnikovih gaziv zdijsnjuet'sja Nacional'nim Centrom inventarizacii parnikovih gaziv [National Center for Greenhouse Gas Inventory]. *nci.org.ua/* Retrieved from https://nci.org.ua/inventory_activity.html [in Ukrainian].
18. 2050 long-term strategy. *ec.europa.eu/clima* Retrieved from https://ec.europa.eu/clima/eu-action/climate-strategies-targets/2050-long-term-strategy_en [in English].
19. Analytical review of the updated nationally determined contribution of Ukraine to the Paris Agreement. *mepr.gov.ua* Retrieved from https://mepr.gov.ua/files/images/2021/29042021/Analytical%20Report_%20Project_EN.PDF [in English].
20. Best eco hotel. *hospitalityawards.international* Retrieved from <https://hospitalityawards.international/hotels/nominations-criteria> [in English].
21. Charlton Estate Bukovel krashhij ekogotel' 2020 [Elektronnij resurs]. *hospitalityawards.international* Retrieved from <https://hospitalityawards.international/winners/winners-2020> [in English].
22. Climate Action Plan. *www.sustainability.booking.com* Retrieved from <https://www.sustainability.booking.com/industryinsights/climate-action-plan> [in English].
23. Climate Change 2022: Mitigation of Climate Change. *www.ipcc.ch* Retrieved from <https://www.ipcc.ch/report/ar6/wg3/> [in English].
24. Climate Change Performance Index. Retrieved from <https://ccpi.org/downloads/> [in English].
25. EU responses to climate change. *www.europarl.europa.eu* Retrieved from <https://www.europarl.europa.eu/news/en/headlines/society/20180703STO07129/eu-responses-to-climate-change> [in English].





26. Global Hotel Decarbonisation Report. *sustainablehospitalityalliance.org* Retrieved from <https://sustainablehospitalityalliance.org/wp-content/uploads/2020/05/Global-Hotel-Decarbonisation-Report-2017.pdf> [in English].
27. Green Key. *www.greenkey.global* Retrieved from <https://www.greenkey.global/> [in English].
28. How to obtain observer status. *unfccc.int* Retrieved from <https://unfccc.int/process-and-meetings/parties-non-party-stakeholders/non-party-stakeholders/overview/how-to-obtain-observer-status> [in English].
29. Introduction. *cop27.eg* Retrieved from <https://cop27.eg/#/presidency> [in English].
30. Kyoto protocol to the United Nations Framework Convention on Climate change. *unfccc.int* Retrieved from <https://unfccc.int/resource/docs/convkp/kpeng.pdf> [in English].
31. Sustainable Hospitality: Eco-Friendly Industry Trends and Tips for Hotels. *businessblog.trivago.com* Retrieved from <https://businessblog.trivago.com/sustainable-hospitality-trends-eco-friendly-hotel-tips>. [in English].
32. Taor Karpaty Resort & Spa [Elektronnij resurs]. *hospitalityawards.international* Retrieved from <https://hospitalityawards.international/winners/winners-2019> [in English].
33. Tourist accommodation, climate change and mitigation: An assessment for Austria *www.sciencedirect.com* Retrieved from <https://www.sciencedirect.com/science/article/pii/S2213078021000037> [in English].
34. UN Works with Global Hotel Industry to Reduce Emissions. *unfccc.int* Retrieved from <https://unfccc.int/news/un-works-with-global-hotel-industry-to-reduce-emissions>
35. United Nations framework Convention on climate change. *unfccc.int* Retrieved from <https://unfccc.int/resource/docs/convkp/conveng.pdf> [in English].
36. Updated Nationally Determined Contribution of Ukraine to the Paris Agreement. *unfccc.int* Retrieved from https://unfccc.int/sites/default/files/NDC/2022-06/Ukraine%20NDC_July%2031.pdf
37. Zero Waste — це рух, shho ob'ednue municipaliteti, mizhnarodni organizacii, miscevi iniciativi ta okremih aktivistiv z metoju postupovogo zmenshennja kil'kosti vidhodiv. *zerowaste.org.ua* Retrieved from <https://zerowaste.org.ua/pro-zero-waste/> [in English].