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INTERNATIONAL COOPERATION AND SUPPORT OF THE WORLD COMMUNITY AS IMPORTANT TOOLS FOR THE FORMATION AND IMPLEMENTATION OF THE STATE ENERGY POLICY OF UKRAINE

The article describes the current state of Ukrainian energy industry in the conditions of russian military aggression against Ukraine. The peculiarities of international cooperation and the level of support of the world community for the energy sector of Ukraine in modern conditions are considered. The problems and contradictions of the formation and implementation of the state energy policy of Ukraine in the conditions of war are characterized. The need for international cooperation and the support of the world community, as important tools for the formation and implementation of the state energy policy of Ukraine in modern conditions, is substantiated and determined.

Keywords: *public management and administration, state management mechanisms, energy, state energy policy, russian military aggression, international cooperation, support of the world community.*

Problem setting. Based on the urgent need to take into account national interests in the energy sector and ensure the necessary level of energy security in the face of russian military aggression, Ukraine must take the necessary measures to establish international cooperation in the specified field, forming and implementing an appropriate state energy

policy that meets the existing challenges and threats of today. In today's conditions, Ukraine is conducting extremely complex preparations for the heating winter period of 2023-2024, including in territories that are subject to constant russian shelling. It is necessary to repair and restore energy facilities and energy infrastructure as soon as possible. Ukrainian energy engineers, risking their own lives, repair energy facilities and energy infrastructure every day, ensuring the country's energy needs.

Recent research and publications analysis. Scientists such as Bredikhina G., Kovaleva A., Pavlysh O., Maistro S., Moskalyuk S. and others have devoted their scientific publications to considering the peculiarities of the formation and implementation of the state energy policy, as well as to the identification of problems and contradictions in the functioning of the energy sphere of Ukraine in the conditions of modern challenges and threats [2; 5; 6; 7].

However, many questions regarding the justification of the need and the determination of directions for international cooperation and support of the world community, as important tools for the formation and implementation of the state energy policy of Ukraine in modern conditions, remain insufficiently researched.

Paper objective. The purpose of the article is to justify the necessity and definition of the directions of international cooperation and support of the world community, as important tools for the formation and implementation of the state energy policy of Ukraine in modern conditions.

Paper main body. According to a report published on June 21, 2023 by the United Nations Development Program and the World Bank, Ukraine's energy system under martial law remains extremely vulnerable, operating with a limited margin of safety. Damage caused by the war to the electricity, gas and heat infrastructure of Ukraine exceeds $10 billion, which is five times more than in June 2022. Continuous russian attacks on the country's energy infrastructure not only caused more than $10 billion in damage, but also left more than 12 million people without or with limited access to electricity [14].

According to the results of the assessment of international organizations, the largest

share of losses falls on the electric power sector - almost $6.5 billion. In particular, the losses caused to nuclear power plants reached about $0.77 billion. At the same time, Ukraine's urgent needs for emergency repairs of critical infrastructure facilities amount to more than $1, 2 billion [14].

It should be noted that the above-mentioned damages to the energy system of Ukraine are given without taking into account the destruction of the Kakhovka hydroelectric power station. According to a report compiled shortly before the Kakhovka hydroelectric power station was blown up, 42 of 94 high-voltage transformers in Ukrainian government-controlled territories were damaged or destroyed by russian missile strikes and drone attacks. More than half of these transformers were repeatedly shelled, which made it difficult to repair them. At the same time, the power generation capacity in Ukraine has decreased by almost 50% compared to the level until 2022. The situation is also complicated by a significant reduction in maneuverable capacities, in particular, the loss of more than 67% of thermal generation capacities [13].

Starting from October 10, 2022 and during the next six months of the war, 33 massive russian attacks were carried out on the objects of the energy infrastructure of Ukraine and about 270 hits were recorded. As a result, at the end of the 2022-2023 heating season, the Ministry of Energy of Ukraine estimated the losses of nuclear generation capacities at 44%, thermal power plants at 78%, block thermal power plants at 66%, hydroelectric power plants at 12%, wind generation at 75%, solar - more than 20% [13].

The current state of affairs in the energy sector of Ukraine under martial law requires the formation and implementation of an appropriate state energy policy, one of the most important directions of which is international cooperation and support of the world community in matters of restoring the country's energy sector. It is extremely necessary for international organizations, foreign energy companies, associations and communities to support the Ukrainian energy sector financially, technically and technologically, organizationally and to join the process of restoring the energy infrastructure of Ukraine destroyed by the aggressor.

Therefore, it is no coincidence that since the first days of the russian full-scale

invasion of Ukraine, the Ministry of Energy of Ukraine has been conducting a dialogue with international partners regarding the provision of assistance to the Ukrainian energy sector, which is mercilessly destroyed by the enemy.

Thus, the Ministry of Energy of Ukraine has established a high-level International Energy Advisory Council, which aims to provide support and assistance to Ukrainian energy companies in overcoming the challenges and threats posed by undisguised russian energy terrorism.

The International Energy Advisory Board includes the heads of relevant ministries of Canada, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Italy, Japan, Lithuania, Poland, Romania, Slovakia, Spain, Sweden, Great Britain, the USA, as well as the Secretariat of the Energy Community Community and the International Energy Agency (IEA) [10].

Under the patronage of the Ministry of Energy of Ukraine and the Ministry of Foreign Affairs of Ukraine with the support of the European Commission and EISMEA, Enterprise Europe Network in cooperation with EU Clusters is also looking for partners in the field of electric power on the platform The Electric Energy matchmaking Forum. The purpose of this Forum is to identify manufacturers and distributors of energy equipment who could contribute and provide all possible proposals for further assistance to Ukrainian citizens and businesses [4].

Also, the Ministry of Energy of Ukraine operates a working group on the organization of humanitarian aid to the energy sector, which collects applications from Ukrainian energy companies regarding their needs, processes and forwards them to partners who are ready to provide appropriate assistance. The distribution of the provided materials and equipment is carried out primarily among the regions most affected by russian aggression [4].

That is, reaching agreements on the restoration of the energy system at the regional level, at the level of cities and energy facilities should be considered an important direction of international cooperation and donor assistance to Ukraine in the energy sector.

So, for example, russian missiles and drones constantly attack the city of Odesa, as a result of which one of the central objects of the energy infrastructure of the Odesa district was damaged, a fire broke out, which left the entire city and some nearby territories without electricity. A large-scale accident at the substation occurred due to the failure of power equipment.

Therefore, it is extremely important that the United Nations Development Program plans to implement a project to strengthen the energy infrastructure capacity of the city of Odesa worth more than $50 million in order to strengthen the capacity of the city's energy infrastructure through the installation of alternative energy sources to ensure the energy supply of utility companies and the city's critical infrastructure.

In particular, with the aim of generating sufficient energy to meet the needs of Odesa's basic utilities before the winter period, the project is expected to be implemented, which will include the installation of a gas turbine, a transformer with a capacity of 80 MW, compressors, nine gas generators and control stations [1].

The creation in April 2022 of the Energy Support Fund of Ukraine was a very important and even unique tool that contributes to the recovery of the energy sector of Ukraine, and also demonstrates the trust in our country on the part of the world community. The fund was created to provide financial support for the restoration of critical energy infrastructure damaged as a result of russian attacks and to maintain the proper functioning of the Ukrainian energy sector. The Energy Support Fund of Ukraine is managed by the Secretariat of the Energy Community, which receives contributions from governments, international organizations and corporate donors to restore the energy sector of our country [9].

Donors of the Energy Support Fund of Ukraine are individual states, international companies and organizations, and its main task is to help Ukrainian energy companies in the prompt restoration of energy infrastructure damaged or destroyed as a result of russian shelling. The funds of the Fund are directed to the purchase of equipment that cannot be provided by international partners in the form of humanitarian aid. The purchase of the relevant equipment is carried out according to international standards of transparency by

the United States Agency for International Development USAID [4].

As reported with reference to the Ministry of Energy, as of March 24, 2023, more than EUR151 million was accumulated in the special account of the Energy Support Fund of Ukraine (in particular, from Germany, Great Britain, Spain, Iceland, Denmark, the European Commission, the Regional Association of Energy Regulatory Authorities (ERRA), the Regional Center for Energy Policy Research), from which about EUR138 million has been allocated to the needs of Ukrainian energy companies [8].

Within the scope of the indicated humanitarian aid, 30 countries of the world handed over 470 cargoes with a total weight of almost 6,000 tons to the energy sector of Ukraine, which the Ministry of Energy distributed as humanitarian aid to 111 enterprises of the energy sector. The working group of the Ministry of Energy approved the list of equipment, fuel and services for supply to 41 energy companies under the procurement procedure at the expense of the fund, and the remaining funds will also be used in accordance with the requests of energy companies that provide production, transmission, distribution of electricity, storage, distribution and transportation of natural gas, and also mining companies [8].

It should be noted that as of the end of July 2023, the Energy Support Fund of Ukraine has already accumulated about $220 million, and by the end of 2023 it is expected to increase to $300 million, which will be received in the form of grants for the restoration and improvement of Ukraine's energy infrastructure. With the funds of the fund, the main donors of which are the governments of friendly countries, through USAID, the equipment they need is purchased and transferred to energy companies in accordance with their applications, which are collected by the Ministry of Energy [8].

At the same time, in July 2023, the Energy Support Fund of Ukraine approved the provision of financial assistance for three key energy facilities of the country that were significantly affected by russian missile attacks, namely for the restoration of capacity and work:

- Kremenchug thermal power plant (CHP) of Poltava region - 15.2 million euros;

- "Kramatorskteploenergo" - provider of centralized heat supply services in the city of Kramatorsk, Donetsk region - aid in the amount of 2.6 million euros;
- Kharkiv CHP-5, which provides electricity and centralized heat supply, is allocated EUR 8.5 million, which will contribute to strengthening the energy security of the city of Kharkiv in preparation for the upcoming winter season [9].

Moreover, the Ministry of Energy of Ukraine, the Secretariat of the Energy Partnership and the Regional Association of Energy Regulatory Authorities (ERRA) signed a fiduciary agreement regarding ERRA's contribution to the Energy Support Fund of Ukraine, which will be aimed at the purchase of emergency energy equipment and fuel in preparation of Ukraine for the extremely difficult heating period of 2023-2024 It should be noted that ERRA became the first legal entity to contribute to the Energy Support Fund of Ukraine on September 6, 2022. Previously, the Fund worked only with state contributions [3].

At the same time, the Ministry of Energy of Ukraine coordinates the requests of Ukrainian companies to carry out relevant restoration works. At the same time, it is envisaged that the procedure for selecting suppliers will be implemented by an international procurement agency with experience in the field of energy [3].

Considering the fact that there were and still are significant corruption manifestations in Ukraine in all spheres, it is extremely important to ensure maximum openness and transparency in the process of receiving, distributing and using international aid provided by donors to restore the country's energy sector.

Therefore, the digital platform AidEnergy, which was launched by the Ministry of Energy in March 2023 with the aim of effectively attracting and using international humanitarian aid, should be an effective tool for countering possible manifestations of corruption in the specified area and further digitalization of state energy policy. Moreover, the development of AidEnergy, as an effective tool for the restoration of the Ukrainian energy infrastructure, was approved by the international partners of Ukraine, because the specified platform ensures the automation of the selection and distribution processes, increases transparency and allows to optimize communication with donors,

and also ensures flexible interaction with all fuel and energy complex enterprises that have suffered from enemy attacks [11].

It should be noted that the AidEnergy online platform was developed with the support of the EBRD Multidonor Account for Stabilization and Sustainable Development in Ukraine (MDA) in cooperation with the Office of Reforms of the Cabinet of Ministers of Ukraine and the DiXi Group analytical center [11].

An important instrument of international cooperation and donor assistance to Ukraine in the energy sector should be considered the possibility (if necessary) of importing electricity in sufficient volumes to overcome its deficit due to russian military strikes on energy facilities and energy infrastructure.

Therefore, it is positive that from the beginning of 2023 the import of electricity to Ukraine from Europe began, which initially took place in small volumes [5], but later there was a need to increase the import of electricity due to the significant destruction of energy and energy facilities infrastructure. The possible volumes of imports will depend on the situation with repairs of power units and the term of their entry into the operation of the power system. Of course, everything will depend on the number of possible attacks on the Ukrainian power system and the level of damage, but the possibility of importing electricity for Ukraine is certainly important.

In addition, the further removal of some power units of NEC "Ukrenergo" for repairs can significantly reduce the available volume of capacity to cover energy consumption, which can be partially compensated through the import of electricity from the European Union.

Therefore, it is important that at the end of March 2023, the European network of electricity transmission system operators ENTSO-E decided to increase the possibility of importing electricity into Ukraine from 700 MW to 850 MW by further increasing the EU's export energy capacities. ENTSO-E also approved a plan to supply solar panels to Ukraine to provide electricity to hospitals and other civil infrastructure facilities [2].

At the same time, on the part of Ukraine, there is an urgent need to discuss with international partners the need to increase electricity imports from EU countries to 2 GW.

That is, in modern conditions, there is a need to expand the possibilities of importing electricity to Ukraine up to 2 gigawatts, as well as support projects to decentralize the energy system of our country by starting a large-scale program of solar energy production by Ukrainian households and communities [7].

Increasing the volume of electricity imports to 2 GW should become an alternative tool for ensuring the energy security of the country in the event that our own generating infrastructure is destroyed due to russian shelling by forming reserves of the necessary equipment in order to quickly use it due to the occurrence of any crisis situations.

In general, according to the calculations of NEC "Ukrenergo", by the end of 2023, at the expense of internal sources, Ukraine will be able to cover about 96% of its own energy consumption, that is, it can be stated that for the energy system of Ukraine, the import of electricity may be critically important in the near future [12].

Therefore, with regard to energy issues, at the state level it is necessary to intensify cooperation on the restoration and transformation of the energy sector of Ukraine by expanding the capacity of networks between our state and EU countries, coordinating the issue of gas supply security, participating in joint purchases of natural gas, strengthening work for the implementation of the European green course, etc. In general, from the point of view of international cooperation, Ukraine should strengthen its interaction with European energy communities, companies, networks, etc.

Therefore, the assessment of energy losses conducted by the UNDP and the World Bank shows how large-scale they are, which allows us to hope that the international community will continue to provide the necessary assistance to Ukraine in the restoration of the energy system.

The key priorities of the state energy policy in modern conditions should be preparation for the heating winter period by: priority implementation of projects to ensure the urgent needs of the population and the economy in energy resources; accumulation of energy resources; carrying out planned and unplanned repairs of power generation capacities (especially nuclear units); restoration of energy facilities that were damaged by the enemy; decentralization of energy generation and creation of new energy

capacities. This will require a balance between the urgent need to deliver services quickly and the importance of building back better than before. Careful planning is required to ensure well-thought-out investments and simplify the processes of attracting funding from various public and private sources.

Conclusions. Thus, the need to ensure national interests in the energy sector requires Ukraine to take the necessary measures to establish fruitful international cooperation and attract international assistance in this field. For Ukraine, the development of international cooperation is an important task of the state energy policy, because it is not only a matter of socio-economic development, but also strengthening the foreign policy and energy security positions of our state in modern conditions. At the same time, restoration and reconstruction of the country's energy system will enable Ukraine to achieve a more sustainable and ecological energy future, which will be the subject of our further scientific research.

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