

ACCESS TO MODERN ENERGY SERVICES IN UKRAINE DURING THE WARTIME: LEGAL CHALLENGES AND SOLUTIONS FOR PUBLIC ADMINISTRATION

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Abstract: *The right to access to modern energy services is a crucial precondition for the realisation of the majority of human rights and freedoms. The energy sector is one of the strategic sectors of each country. Currently, the energy sector of Ukraine is among the key military targets during the full-scale aggression of the Russian Federation in Ukraine. Disconnections in energy services caused by the military attacks (both cyber and physical) negatively influence the life of the peoples in Ukraine. Therefore, the protection of the right to access to modern energy services at all levels is among the key tasks of the public administration in Ukraine. This paper aims at the analysis of the legal issues of the encouragement of the right to access to modern energy services in Ukraine under the war of aggression conditions and elaboration of the possible solutions for the public administration.*

Key words: *Energy Sector in Ukraine; Access to Modern Energy Services; Energy Efficiency; Energy Poverty; Armed Conflict; Energy Law*

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1. INTRODUCTION

The right to access to modern energy services is a crucial precondition for the realisation of the majority of human rights and freedoms. The energy sector is one of the strategic sectors of each country. Currently, the energy sector of Ukraine is among the key military targets during the full-scale aggression of the Russian Federation in Ukraine. The critical infrastructure of the energy sector is vulnerable to both cyber and physical attacks from the aggressor. Experts pay attention to the damage caused by military attacks in Ukraine (Golovko, 2023). During the autumn and winter periods, these attacks were seriously intensified, leading to significant damage to the energy sector as a whole, but especially to the power sector (Prokip, 2023). Starting from 22 March 2024, the military attacks on the power and heating sectors have become increasingly intensive. Disconnections in energy services negatively influence the life of people in Ukraine (e.g., inability to participate in normal economic and social life actively, health diseases caused by lack of heating and lighting (especially among children, elderly, and other vulnerable categories of people), incidents happened due to uncontrolled use of alternative sources of energy (e.g., those based on open fire technologies). Russia's war has become a major resilience test not only in Ukraine itself but in the entire Europe (Jermalavičius et al., 2023).

In recent years, important steps regarding the implementation of the requirements of the EU energy legislation in Ukraine have been taken in the framework of

the Energy Community¹ and the EU-Ukraine Association Agreement.² In particular, special laws and respective by-laws related to the legal status of the energy regulator in Ukraine, energy efficiency, energy performance of buildings, electricity, and gas markets, and protection of critical infrastructure in the energy sector were adopted. However, the challenges posed by the war of aggression in Ukraine require adequate solutions aimed at protecting the right to access to modern energy services for all categories of energy consumers.

Modern legal research devoted to the right to access to modern energy services is mostly focused on the issues within the framework of international public law – international human rights law and international humanitarian law. As demonstrated by the experience of the previous and current armed conflicts, the energy infrastructure is subject to military attacks. This paper aims to explore administrative legal issues of the promotion of the right to access to energy services under the war of aggression in Ukraine and to develop appropriate legal solutions to improve the legal framework for effective decisions of the public administration entities in Ukraine necessary to meet the energy needs. Where possible, the study also aims to derive general recommendations for the promotion of the right to access to energy services in emergency situations for other countries.

The hypothesis of this study is the insufficiency of the legal framework for the promotion of the right to access to modern energy services by public administration in Ukraine under conditions of the war of aggression and the need for its enhancement.

Several research methods have been used for the purpose of this research. In particular, the system-functional method, the methods of analysis and synthesis, and the method of theoretical generalisation were applied in order to examine current legal regulation on public governance in the field of protection and fulfilment of the right to access to modern energy services and to elaborate possible solutions of its improvement. The comparative legal research method was used to some extent to analyse the issues of promotion of the right to energy services in other countries under conditions of armed conflicts [e.g., former Yugoslavia (Scholl, 2009), Yemen (Al-Saidi et al., 2020)]. Although this research is mainly focused on the administrative law issues of the access to modern energy services, the outcomes of research of other legal issues (first of all public international law), as well as research outcomes related to energy access in frames of other fields of science (in particular, public administration science) were used. The analysis of legal issues promoting the right to energy services during the war of aggression in Ukraine as a responsibility of public administration entities was conducted based on the commonly accepted approach to the core features of the right to access to modern energy services (e.g., accessibility, affordability, environmental friendliness, and health safety).

This paper is based on the analysis of the modern scholarly literature, legal acts, case law, and official data presented by the public authorities on their websites or made publicly available via media sources.

While the paper focuses mainly on the Ukrainian context, it provides important information on challenges and offers general solutions for the promotion of the right to

¹ Energy Community (established in 2005) is an international organisation aimed at extending the rules and principles of the EU internal energy market to Southern and Eastern European countries, the Black Sea region and beyond on the basis of a legally binding framework. Available at: <https://www.energy-community.org/> (accessed on 25.09.2024). Ukraine has been a full-fledged member of the Energy Community since 1 February 2011.

² Association Agreement between the European Union and its Member States, on the one part, and Ukraine, on the other part of 27 June 2014. OJ L 161, 29.5.2014, pp. 3–2137.

access to modern energy services in crises that can be useful for public governance aimed at protecting and fulfilling the right to access to modern energy services in other countries.

The structure of the paper is as follows. In the first part of this paper, the current approaches to the right to access to modern energy services during armed conflicts presented in modern literature have been analysed. In the second part of this paper, certain challenges in the promotion of the right to access to modern energy services in Ukraine under the war of aggression have been detected and the possible mechanisms for their resolving by the public administration entities have been outlined in order to encourage the right to access to energy services for people in Ukraine. Finally, the key results and recommendations have been summarised in the conclusions of this paper.

2. RIGHT TO ACCESS TO ENERGY SERVICES DURING ARMED CONFLICTS IN MODERN LITERATURE

The right to access to modern energy services has mostly been analysed in the modern literature along two main lines:

- the right to access to modern energy services as a human right;
- the right to access to energy services during an armed conflict.

Access to modern energy services is a crucial precondition for the full enjoyment of the majority of human rights and freedoms (e.g., the right to life, the right to health, the right to work, the right to education, and the right to an adequate standard of living). Nevertheless, many people around the world still lack access to sustainable, reliable, environmentally friendly, and affordable energy services, with adverse consequences for the quality of their lives (Vashchenko, 2021). Ensuring access to affordable, reliable, sustainable, and modern energy for all is also enshrined in the United Nations Sustainable Development Goals (Goal 7).³ In addition, the rights of energy consumers are a distinct focus in the Energy Law literature (Vrabko et al., 2023).

It should be noticed that the contemporary legal research on the right to access to modern energy services is primarily focused on issues within the framework of international public law – particularly international human rights law and international humanitarian law.

Many legal scholars, especially those specialising in energy law issues, have already contributed to research related to the right to access to modern energy services within the context of human rights. Considering the importance of energy supply for people's life, the right to access to modern energy services has been considered as a human right by scholars (see, e.g., Bradbrook et al., 2015; Tully, 2006; Huhta, 2023). Bradbrook, A. and Judith, G., in particular, argue for the recognition of the right to access to energy services as a human right and elaborate its key elements, explore the link between the access to modern energy services and poverty, emphasise the importance of international cooperation on this matter, and offer the statement of principles for achieving universal access to modern energy services (Bradbrook et al., 2015). According to them, the major role of national government is to use their best endeavours "to move progressively and as expeditiously as possible towards the achievement of universal access to modern energy services" (Bradbrook et al., 2015). The importance of considering the access to modern energy services via the prism of the human rights

³ Resolution adopted by the General Assembly on 25 September 2015 "Transforming our world: the 2030 Agenda for Sustainable Development". Available at: <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N15/291/89/PDF/N1529189.pdf?OpenElement> (accessed on 22.11.2023).

concept is emphasised by Tully, S. In particular, the scholar concludes with a proposal for a General Comment as an essential first step towards recognising a human right to electricity access (Tully, 2006). Energy justice in the context of human rights law has been explored by Huhta, K. Drawing on modern approaches that consider the right to access to modern energy services as a human right, the author focuses her efforts on the real-life legal application of the human right approach in the sphere of energy justice. According to the scholar, "To find synergies between the rich bodies of research conducted in the spheres of both energy justice and human rights law, the overlap between the two research traditions should be acknowledged in energy research and energy law scholarship." (Huhta, 2023).

The issues of energy during the armed conflict have been mostly examined by scholars along the following lines:

- energy resources as a driver for conflicts (e.g., Månsson, 2014);
- critical energy infrastructure as a military target (e.g., Gardam, 1997);
- the energy sector's conflict resilience (e.g., Al-Saidi et al., 2020; Roach and Al-Saidi, 2021);
- energy poverty and armed conflicts (e.g., Omar et al., 2023; Shettimea et al., 2023).

In particular, Månsson concludes that "examples of energy system characteristic that can affect the risk of conflicts include geographical concentration of primary resources, the number and diversity of exporters on the international energy market, vulnerability of infrastructure to attacks, vulnerability of users to disruptions and externalities related to interconnections with other systems." (Månsson, 2014, p. 106).

The energy infrastructure has historically been, and continues to be, subject to military attacks in former and current armed conflicts. Scholl, B. pays attention to the damage to the energy sector of Bosnia and Herzegovina caused by conflicts in the former Yugoslavia from 1991 to 1995. He points out that "prior to the dissolution of the former Yugoslavia (SFRY), the Bosnian republic was a key component of the energy supply for "Yugoslavia and the region"" (Scholl, 2009, p. 50). He stresses that the generation facilities and transmission infrastructure were directly targeted by competing forces. By 1996, significant damage was made to generation facilities, transmission, and distribution infrastructure (Scholl, 2009, p. 51).

Al-Saidi, M., Roach, E.L., and Al-Saeedi, B.A.H. (Al-Saidi et al., 2020) observe that the energy infrastructure has been subjected to damage, capacity deterioration, and the bankruptcy of public providers during political instability and conflicts across the Middle East. Drawing on the Yemen case during the armed conflict since the onset of conflict in 2015, the scholars pay attention to the necessity to strengthen conflict resilience of water and energy supply infrastructure. They emphasise "the remarkable adaptive capacities of communities during conflicts and the importance of incorporating community-level adaptation responses into larger efforts to enhance the conflict resilience of infrastructure systems" (Al-Saidi et al., 2020, p. 1). For the purposes of this research, it is worth mentioning that the scholars found that only approximately half of the population depended on the public grid, while the other half gained access through private sources such as diesel generators, kerosene, and liquefied petroleum gas (LPG). Due to the conflict, consumers of the public power grid were "left in the dark" and the users of diesel-run generators were unable to afford their operation after the fuel tariffs were hiked. Responses to adaptation in Yemen were characterised by decentralisation and the increased role of communities and the private sector. The authors draw an important conclusion that "the infrastructure-related responses to the current conflict in Yemen represent an interesting case of community-driven and self-organisation-based

adaptation, but they do not illustrate a best case of conflict resilient infrastructure” (Al-Saidi et al., 2020, p. 18). The microscale adaptation efforts are necessary for weathering the crisis but are unlikely to effectively strengthen the resilience of the overall system. According to scholars, public regulatory or coordination interventions are needed. They suggest the integration of neighbourhood-based solutions, such as water kiosks or district-level generators for emergencies, into the public utilities operators (Al-Saidi et al., 2020, p. 19).

Most scholars who have analysed the issues of the energy sector in armed conflicts mentioned the direct or indirect negative impact on the population. Damaged energy infrastructure and electricity tariffs hikes have contributed to increased levels of energy poverty. In particular, scholars note that during the war in Syria, most of the electricity infrastructure was destroyed (Omar et al., 2023). They witnessed how people started to break things in their house to use them as fuel. The scholars analysed the issue of energy poverty in Syria caused by a decrease in available energy sources and an increase in their prices for people with limited incomes. They paid attention to the difficulties in assessing the energy poverty during the armed conflicts, and therefore, the adoption of appropriate governmental decisions regarding its tackling (Omar et al., 2023).

Energy as a human right in armed conflict was specifically addressed by Jenny Sing-hang Ngai (2012), who examined the issues related to energy access within the framework of international humanitarian law and human rights law, and emerging international practice to support the case for establishing energy rights. The scholar stresses that the lack of energy security during an armed conflict can significantly undermine the chances of survival of civilians who, in their vulnerable position, are most in need of protection. The researcher drew a very important conclusion: “Hence, the question of energy access becomes one of survival in times of armed conflict, where the denial of energy needs almost certainly leads to the denial of human survival needs. A real need has emerged for the individual’s legal entitlement to energy access in armed conflict to be the formally recognised.” (Sing-hang Ngai, 2012, p. 584).

Thus, the issues of energy access have been analysed by scholars from different perspectives: legal, social, political, and economic. A multidisciplinary approach plays a crucial role in this field, and contributions of the representatives of different disciplines are very important. However, legal issues of energy access during armed conflicts have been explored mainly within international human rights law and international humanitarian law. Recognising access to energy as a human right, and the necessity to join efforts at the international level to protect this right, in times of peace and during armed conflicts, are vital preconditions for ensuring normal life for people all over the world. Nevertheless, the obligations to respect, protect, and fulfil this right at the national level lies with the national authorities that should consider all national energy sector-related peculiarities and concrete circumstances when elaborating the appropriate solutions.

3. RIGHT TO ACCESS TO MODERN ENERGY SERVICES UNDER THE WAR OF AGGRESSION IN UKRAINE: KEY CHALLENGES FOR PUBLIC ADMINISTRATION AND POSSIBLE WAYS FOR THEIR RESOLUTION

3.1 The Right to Access to Modern Energy Services under the War of Aggression in Ukraine: A Brief Overview of a Problem and an Outline of Possible Solutions for the Public Administration

The energy sector in Ukraine has become one of the primary military targets during the full-scale aggression launched by the Russian Federation in Ukraine on 24 February 2022. The first massive military attack on critical energy infrastructure took place on 10 October 2022. Since this date, continued attacks on the energy sector in Ukraine have caused significant damage to the critical infrastructure. The autumn and winter of 2022 were extremely difficult for energy consumers in Ukraine due to utility disruptions, including energy services, caused by military attacks. In response, public administration entities, businesses, and households had to seek alternative sources of electricity and heat supply and faced different obstacles (in particular, related to funding, technical capacity, availability, etc.).

Since 22 March 2024, the massive military attacks on the energy critical infrastructure have been intensified again. Kudrytskyj, V., head of the national power company "Ukrenergo", told that it was "the largest assault on Ukraine's energy infrastructure since the full-scale war has begun" (Arhirova, 2024). The last events confirm the old thesis that Russia transforms energy into a weapon (Batozsky, 2024).

Disruptions in energy services have had a severe impact on the lives of people in Ukraine (e.g., lead to inability to actively participate in normal economic and social activities, health diseases caused by lack of heating and lighting (especially among children, elderly, and other vulnerable categories of people), incidents happened due to uncontrolled use of alternative sources of energy (e.g., those based on open-flame technologies).

The core features of the right to access to modern energy services, such as accessibility, affordability, health, safety, and environmental sustainability, are severely compromised under war conditions. Thus, the damage to the energy infrastructure by the military attacks lead to the lack of accessibility. Tariff hikes caused by the necessity to fund repairs and reconstruction of destroyed energy infrastructure resulted in the lack of affordability. Pollutions caused by open-flame technologies and fossil fuel powered by numerous portable power generators contribute to environmental degradation. The lack of access to energy services and other basic services depended on electricity supply (e.g., water supply and sanitation, elevators, etc.), as well as inappropriate use of independent energy solutions lead to health diseases.

The mitigation of negative consequences mentioned above requires adequate governmental action. The public administration shall search for effective solutions for promoting access to energy services for all categories of energy consumers, first of all, for the population.

The experience of more than two years of the full-scale aggression of the Russian Federation in Ukraine and the experience of other countries that struggled from armed conflicts demonstrated that the promotion of access to energy services requires joint efforts of the state, municipalities, the energy sector, and energy consumers – households and businesses. The financial and technical support in this sphere of international partners is crucial for Ukraine.

There are temporary (emergency) solutions (e.g., the use of portable and open-flame equipment) and long-term solutions (e.g., energy efficiency mechanisms, like solar panels, wind turbines, heat pumps).

The balance of centralised and decentralised (distributed) energy infrastructure is needed in Ukraine. It should be stressed that decentralised (distributed) energy infrastructure should not be confused with a reserved energy infrastructure. The first one is one of the permanent solutions that can also contribute to the energy sector's resilience during crises, while the reserved energy infrastructure is a temporary mechanism intended for use in emergency situations when the permanent solutions are temporarily unavailable.

The establishment of so-called points of invincibility, the deployment of onsite backup energy options, such as generators, as well as the continuous improvement of energy efficiency are usually identified as key solutions for the protection of energy consumers towards readiness for emergency disconnections of energy services due to hostile attacks (Webster et al., 2023).

The implementation of the above-mentioned measures in Ukraine (in particular, those related to the establishment of the points of invincibility, transitioning from district heating to individual heat solutions, the installation and use of independent power solutions, and the adoption of energy efficiency measures in households) faces difficulties connected with the drawbacks in the current legislation.

Energy poverty is another important issue that shall be tackled by public administration entities. Recovery of damages to the energy infrastructure caused by military attacks requires significant investments that have led to an increase in utility tariffs. However, many people in Ukraine are in vulnerable situations now and cannot afford utility payments. Protection of vulnerable energy consumers is among the key requirements under the EU legislation. Therefore, the mechanisms of protection of the right to access to modern energy services for vulnerable categories of citizens are among the key tasks of public administration entities in Ukraine.

Possible legal solutions aimed at improving the regulatory framework to support the implementation of the above-mentioned measures in Ukraine and to promote the right to access to modern energy services are presented below.

3.2 Mechanisms for the Promotion of the Right to Access to Modern Energy Services during the War of Aggression in Ukraine

3.2.1 Points of Invincibility

In November 2022, the President of Ukraine launched the project of support to people "Points of Invincibility" (President of Ukraine, 2022) in response to the massive attacks on the energy infrastructure. As part of this project, free, round-the-clock units equipped with electricity, mobile communications, Internet, heat, water, and a first-aid kit were established in buildings of military public authorities, local self-government authorities, educational institutions, etc. in order to help citizens during the disconnections from basic services caused by the military attacks (Punkt nezlamnosti).

Points of invincibility play a significant role in ensuring access to basic services for the population, especially during the autumn and winter months. However, their implementation has been connected with certain difficulties. In particular, when the points of invincibility are established within the buildings of educational institutions (in particular, schools, universities, etc.) the following problems have arisen: difficulties in simultaneous operating points of invincibility and organisation of studies (especially if studies are conducted on-site), ensuring the safety of pupils and students (since points

of invincibility are open for all), and the involvement of the personnel and students in the functioning of the points (labour law issues), etc. The Educational Ombudsman paid attention to the problems of operation of the points of invincibility and the necessity of adequate legal regulation (Osvitnij ombudsman, 2022). It should be noted that the educational institutions have played a significant role in the protection of civilians since the beginning of the war of aggression in Ukraine. In particular, their dormitories have been used to provide temporary accommodation for internally displaced persons and individuals whose homes were destroyed, while their shelters have served as protection during military attacks. The establishment of points of invincibility in the premises of the educational institutions was a necessary and effective solution. However, it should be considered as a temporary measure, given that the main function of the educational institution is to ensure the full realisation of the right to education. As stated in the Safe Schools Declaration (Safe Schools Declaration, 2015) signed by Ukraine on 20 November 2019 *“education can help to protect children and youth from death, injury, and exploitation; it can alleviate the psychological impact of armed conflict by offering routine and stability and can provide links to other vital services.”* (Ministry of Education and Science of Ukraine, 2019, p. 1). Parties to the Declaration agreed on the necessity of ensuring the continuity of education during an armed conflict. Therefore, public administration entities shall gradually relocate the points of invincibility from educational institutions to alternative premises (e.g., shelters) specially equipped for these purposes.

These recommendations mentioned above may be useful for the use of public buildings (e.g., buildings of educational institutions) as temporary shelters during emergencies (e.g., caused by natural disasters, such as flood disasters).

3.2.2 Switch from the District Heating and Hot Water Supply to the Individual Heating and Hot Water Systems

District heating supply is generally recognised as the most environmentally friendly, economically efficient, and safe method of heat supply. However, by the beginning of the full-scale aggression in Ukraine, the district heating supply systems were estimated to be 70-80% worn out (Olijnyk, S., 2022). Frequent emergency disconnections and low heat temperature led to inadequate quality of district heating supply and compelled people to switch to individual heating systems (at a minimum, by installing hot water boilers).

It should be noted that the approach of public authorities to the disconnections of households from the district heating and hot water supply systems has evolved over time. According to the Procedure on Disconnection of Certain Residential Buildings from Networks of District Heating and Hot Water Supply in Case of the Customer's Withdrawal from the District Heating (approved by the Order No. 4 of the Ministry of Construction, Architecture, Housing, and Utilities Economy of Ukraine dated 22 November 2005) (hereinafter: **the Procedure**),⁴ it was possible to disconnect individual flats, sections, riser block of flats or the whole multifamily houses from the district heating and hot water supply systems. The decision on disconnection was to be made by a special commission upon the application of owners/co-owners. A negative decision could be issued if the disconnection of the separate premises from the district heating and hot water supply systems was found to negatively influence the stable operation of the utility equipment

⁴ Procedure on the disconnection of certain residential buildings from the networks of district heating and hot water supply in case of the customer's withdrawal from the district heating (approved by Order of the Ministry of Construction, Architecture, and Housing and Utilities Economy of Ukraine of 22.11.2005 No 4). Available at: <https://zakon.rada.gov.ua/laws/show/z1478-05#Text> (accessed on 18.03.2024).

of the premises or the house as a whole. After the changes of 7 November 2007⁵ to the above-mentioned Procedure on disconnection, the possibility of switching from the district heating and hot water supply systems to individual systems was limited only for entire houses (not for separate flats).

The case law of Ukrainian courts confirmed this conclusion. In particular, the Supreme Court, in its judgement of 5 November 2020 in case No229/4116/17, affirmed that permission for disconnection can be provided just for the whole residential building (not for the separate flats) and only in case if all co-owners supported this decision unanimously.⁶

In 2017, the Law of Ukraine "On Housing and Communal Services" No2189-VIII⁷ was adopted. This law (Point 12, Part. 1, Art. 7) stipulates the right of utility consumers to disconnect from the systems of district heating and hot water supply according to the procedure prescribed by law (currently – Procedure on disconnection of consumers from networks (systems) of district heating (heat and hot water supply approved by Order of the Ministry for Regional Development, Construction, Housing and Communal Economy of Ukraine of 26 July 2019 No. 169 that replaced the previously mentioned Procedure). However, according to the above-mentioned legislation, there are only two possible scenarios under which consumers may exercise this right. First, the owners of the flats or non-residential premises in a multi-family residential building connected to the district heating and hot water supply have the right to disconnect their flats or non-residential premises from the district heating and hot water supply only if by the date of entering into force of the Law of Ukraine "On Housing and Communal Services" not less than a half of the flats and non-residential premises of this house was separated (disconnected) from district heat and hot water supply. Otherwise, only the second option is possible: if 100% of the owners of the house are for the disconnection of the whole house from the district heating and hot water supply.

It is undisputable that district heating and hot water supply systems are more environmentally friendly and energy efficient. Mass disconnections can undermine the operation of the systems of district heating and hot water supply. Moreover, on some territories, due to their local peculiarities, the mass transition to individual systems of heating and hot water supply can cause damage to the environment. Therefore, the efforts of the public administration to restrict the possibilities of mass disconnections from district heating and hot water supply systems are understandable and justified. However, current legislation only imposes common restrictions and fails to consider any specific factors (e.g., technical or environmental issues).

Therefore, in our opinion, it is time to reconsider the legislative restrictions on the possibility of disconnections of the flats or non-residential premises in the multi-family residential premises from the systems of district heating and hot water supply towards expanding the cases when it is possible without 50% previously disconnected flats or non-residential premises.

⁵ Order of the Ministry for Housing and Communal Economy of Ukraine No 169 of 06.11.2007 "On Approval of Changes to Order of Misconstruction of 22.11.2005 No 4. Available at: <https://zakon.rada.gov.ua/laws/show/z1320-07/ed20071209#Text> (accessed on 26.03.2024).

⁶ Judgement of the Supreme Court of 05.11.2020 No 229/4116/17. Available at: <https://reyestr.court.gov.ua/Review/92661430> (accessed on 18.03.2024).

⁷ Law of Ukraine "On Housing and Communal Services" No 2189-VIII of 09.11.2017. *Vidomosti Verkhovnoji Rady Ukrainy*, 2018, No1, St. 1. Available at: <https://zakon.rada.gov.ua/laws/show/2189-19#Text> (accessed on 29.09.2024).

3.2.3 Independent Power Sources for Households

Risks of possible blackouts caused by massive military attacks have prompted energy consumers to seek alternative options and independent power solutions.

After the first massive attacks on strategic energy infrastructure, public authorities and energy experts issued warnings about the necessity to be prepared for the cold season and possible disconnections. People began stockpiling wood, candles, flashlights, power banks, etc. Among these, exactly the portable power generators became the most desirable equipment and “the sound of a generator – a sound of well-being” (Chepurko, 2022). However, the installation and use of the generators by people have been connected with many difficulties. First, most people lack special technical knowledge about generators (what type of generator best suits their needs, how to install them correctly, how to operate them properly, etc.). Second, a generator is expensive equipment that is not affordable for many people. Third, the generators quickly became scarce, even for those who could afford them. Fourth, lack of regular control of the conditions of the generators poses risks of harm to health, property, and the environment. Finally, the noise from generators created disturbances for other people around. All these issues require special attention from respective public authorities.

During the period of martial law, individuals are not required to obtain special permissions to install power generators. Different public authorities (e.g., the State Inspectorate for Energy Supervision (StateEnergySupervision, 2022), State Emergency Service of Ukraine (State Emergency Service of Ukraine, 2022), the Main Department of the State Service of Ukraine on Food Safety and Consumer Protection in Kyiv city (The Main Department of the State Service of Ukraine on Food Safety and Consumer Protection, 2023), projects of international technical support to Ukraine (e.g., USAID Program “Dobre”, 2023) provided guidelines on proper installation and use of generators on their websites. Undoubtedly, these recommendations are valuable; however, in our view, they are not easily accessible to a wide audience of citizens. Therefore, it is recommended to provide them in the buildings of local public administration entities / local self-government authorities, schools, hospitals, and other public buildings frequently visited by people in a visible place.

Also, it should be considered that average consumers lack special technical knowledge required for the proper installation of generators. Therefore, the above-mentioned guidelines advise using installation services rendered by qualified professionals. However, these services are offered by many private individuals and legal entities, which raises a concern: how to be sure that they are professionals? In our opinion, it is the task of respective public authorities and local self-government bodies to help people make an informed decision regarding the providers of generator installation works, in particular, through municipal utility companies or by providing the recommended list of specialists/legal entities specialised in the installation of power generators. As a good example, a case of the town Chernivtsi can be provided, where the municipal company “Mistoservis” carries out the installation of generators (Olijnyk, G., 2022).

The inappropriate use of generators in residential buildings may cause health injuries and property damage (GALINFO, 2023). In our opinion, the installation of generators and the future monitoring of the safety of their exploitation should be carried out by qualified specialists. For the purposes of their inspections, the mechanism of the regular inspections of heating systems, ventilation systems and air-conditioning systems in buildings stipulated by the Directive 2024/1275 of the European Parliament and of the

Council of 24 April 2024 "On the Energy Performance of Buildings"⁸ (Art. 23-24) (recasts the Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings) can serve as a relevant model. In order to implement the Directive's 2010/31/EU requirements, EU Member States adopted special legislation. In particular, in the Slovak Republic the Law "On the Regular Control of Heating and Air-conditioning Systems and on Amendments to Law No. 455/1991 on Entrepreneurship (Entrepreneurship Law) as amended"⁹ was adopted. In Ukraine, the legislative framework for regular inspections of heating and air-conditioning systems has been established, in particular, by Law of Ukraine "On Energy Efficiency of Buildings"¹⁰ (Art. 13), Methodology on Inspections of Engineering Systems of a Building.¹¹

In light of the above, it is recommended to gradually introduce the procedure of inspections of portable power generators in households similar to the procedure of inspections of heating, ventilation and air-conditioning systems under the EU Directive "On Energy Performance of Buildings", and to encourage the conduct of generator installation works in households by municipal utility companies or the provision the recommended list of specialists/legal entities specialised in the installation of power generators.

3.2.4 Energy Efficiency Measures for Households

According to the United Nations Sustainable Development Goals (goal 7 "Affordable and clean energy") several key targets are set to be achieved by 2030. These include: doubling the global rate of improvement in energy efficiency, enhancing international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency, and advanced and cleaner fossil-fuel technology, and promoting investment in energy infrastructure and clean energy technology.¹²

In the European Union (EU), the Clean Energy Package puts consumers at the centre of the EU energy policy and introduces a wide range of initiatives to engage consumers in the transition to clean energy (Hrynkiv and Lavrijssen, 2024).

In recent years, significant steps towards European integration in the sphere of energy efficiency were made by Ukraine. The necessary legal framework for energy efficiency, and in particular, for energy efficiency of buildings, has been developed in

⁸ Directive (EU) 2024/1275 of the European Parliament and of the Council of 24 April 2024 "On Energy Performance of Buildings". OJ L, 2024/1275, 8.5.2024. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L:202401275> (accessed on 29.09.2024).

⁹ Zákon č. 314/2012 Z. z. z 18.09.2012 o pravidelnej kontrole vykurovacích systémov a klimatizačných systémov a o zmene zákona č.455/1991 Zb. O živnostenskom podnikaní (živnostenský zákon) v znení neskorších predpisov. [Law on the Regular Control of Heating and Air-conditioning Systems and on amendments to Law No. 455/1991 on Entrepreneurship (Entrepreneurship Law) as amended]. Available at: <https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2012/314/> (accessed on 30.03.2024).

¹⁰ Law of Ukraine "On Energy Performance of Buildings" of 22.06.2017 No2118-VIII. *Vidomosti Verkhovnoyi Rady (VVR)*, 2017, No33, St. 359. Available at: <https://zakon.rada.gov.ua/laws/show/2118-19#n199> (accessed on 29.03.2024).

¹¹ Methodology of Inspections of Engineering Systems of a Building (approved by Order of the Ministry for Regional Development, Construction and Housing and Communal Economy of Ukraine of 11.07.2018 No173). Available at: <https://zakon.rada.gov.ua/laws/show/z0826-18#Text> (accessed on 29.03.2024).

¹² Resolution adopted by the General Assembly on 25 September 2015 Transforming our world: the 2030 Agenda for Sustainable Development. Available at: <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N15/291/89/PDF/N1529189.pdf?OpenElement> (accessed on 22.11.2023).

Ukraine. In particular, laws on Ukraine "On Energy Efficiency",¹³ "On Energy Performance of Buildings", "On Energy Efficiency Fund",¹⁴ as well as necessary regulations on their basis have been adopted, and the procedure of energy efficiency certification of buildings has been launched.

Under wartime conditions in Ukraine, energy efficiency measures can contribute to the decrease of consumption of energy from conventional sources and to improve public access to energy services. It is therefore recommended, where appropriate, to consider the implementation of energy efficiency measures during the renovation of buildings (including multifamily houses) damaged by military attacks, and the encouragement of the construction of "zero" energy consumption buildings during the construction of residential buildings for those who lost their houses during the war.

Ukrainian households have already started the installation of energy efficiency technologies such as solar panels, wind generators, and heat pumps. Public administration entities shall encourage the introduction of energy efficiency measures in households, in particular, by introducing financial compensation, tax incentives, and soft loan support schemes. The Energy Efficiency Fund¹⁵ has launched several programmes aimed to financially support households for the installation of energy efficiency measures (e.g., GreenDIM Program (Energy Efficiency Fund, 2024)). In some Ukrainian cities (e.g., Odesa, Lviv, Kyiv), special programmes have already been introduced by local authorities for the compensation of costs invested by households into the energy efficiency measures and portable energy solutions. A notable example is found in Kyiv city, where the Procedure of Partial Compensation of Price of Independent Powers Sources Purchased by the Associations of Co-owners of Multifamily Houses, Housing Cooperatives, and Managers of Multifamily Residential Buildings in 2022-2025 years (adopted by Decision of Kyiv City Council No 5586/5627 on 10 November 2022)¹⁶ offers up to 75% compensation for the costs of purchased independent power sources (with approved maximum limits based on the categories of multi-family houses). However, the majority of existing programmes are available only for multi-family residential buildings with associations of co-owners, housing cooperatives, or house management companies. The public administration shall find a solution for the support of co-owners of multifamily houses in case of the absence of the above-mentioned organisational forms of their cooperation in the installation of independent energy sources. It is recommended to consider the introduction to the Tax Code of Ukraine of tax incentives in the framework of income tax, similar to the incentives for mortgage loans.

It should be emphasised that the governance in the field of energy efficiency required significant improvement, especially at the local level. By 2015, the State Agency

¹³ Law of Ukraine "On Energy Efficiency" of 21.10.2021 No.1818-IX. *Vidomosti Verkhovnoi Rady Ukrainy (VVR)*, 2022, № 2, ct.8. Available at: <https://zakon.rada.gov.ua/laws/show/1818-20#Text> (accessed on 29.03.2024).

¹⁴ Law of Ukraine "On Energy Efficiency Fund" of 08.06.2017 No2095-VIII. *Vidomosti Verkhovnoi Rady Ukrainy (VVR)*, 2017, No. 32, St. 344. Available at: <https://zakon.rada.gov.ua/laws/show/2095-19#Text> (accessed on 29.03.2024).

¹⁵ Energy Efficiency Fund, a public institution that offers instruments for thermal modernisation and renovation of multifamily houses with co-owner associations. Available at: www.eefund.org.ua (accessed on 24.09.2024).

¹⁶ Procedure of partial compensation of price of independent powers sources purchased by the associations of co-owners of multifamily houses, housing cooperatives and managers of multifamily residential buildings in 2022-2025 years (Appendix 2 to Decision of Kyiv City Council No. 5586/5627 of 10 November 2022). Available at: https://ips.ligazakon.net/document/mr221276?utm_source=biz.ligazakon.net&utm_medium=news&utm_content=bizpress01&_ga=2.92837533.143564300.1727208115-724289601.1727208115#_gl=1*d0f6l0*_gclau*NTUwODgzNTIyLjE3MjcyMDgxMTU (accessed on 24.09.2024).

on Energy Efficiency and Energy Saving of Ukraine¹⁷ (hereinafter: **StateEnergyEfficiency**) maintained a wide network of its territorial authorities (24 territorial authorities in regions, the city of Kyiv, and the Autonomous Republic of Crimea) with allocated premises, adequate material, and qualified human resources. However, in 2015, the Cabinet of Ministers of Ukraine (Regulation No. 4 of 14 January 2015)¹⁸, upon the proposal of the StateEnergyEfficiency, liquidated the territorial authorities of the StateEnergyEfficiency as structural bodies of the apparatus of the StateEnergyEfficiency. All provisions regarding the territorial authorities were excluded from the Regulation on the StateEnergyEfficiency.¹⁹ At the same time, the maximum number of staff of the apparatus of the StateEnergyEfficiency was almost doubled (the general number of staff was increased from 116 to 224; the number of civil servants was increased from 109 to 219). Thus, the centralisation of public governance in the field of energy efficiency took place.

In our opinion, such a governmental decision was neither reasonable nor aligned with the general principle of decentralisation of public administration in Ukraine. The recent steps of the government support this opinion. In 2023, the StateEnergyEfficiency announced the establishment of offices dedicated to decarbonisation and energy efficient transformation in two oblasts – Kirovogradska oblast and Dnipropetrovska oblast. According to the publicly available information (StateEnergyEfficiency, 2023a, 2023b), such offices were created on the basis of the memoranda concluded by the StateEnergyEfficiency and the local authorities – the local bodies of self-government and the local state administrations (the Kirovogradska oblast council (local self-government body) and the Kirovogradska oblast state administration (the local body of executive power) – for the office in the Kirovogradska oblast; the Dnipropetrovska oblast council (local self-government body) and the Kirovogradska oblast state administration (the local body of executive power). These offices are intended to serve as platforms for the cooperation between the StateEnergyEfficiency and local authorities in the following key areas:

- energy consumption management, including the introduction of energy management systems, the elaboration of local energy plans, the conduction of energy certification of buildings and energy audits;
- establishment of the “energy safety bag” of the region (definition and use of the transition capacity from conventional types of fuel, alternative heat supply, highly efficient cogeneration, biogas, and biomethane production);
- mobilisation of financial resources for energy-efficient transformation of regions (via further National decarbonisation platform, ESCOs, municipal green funds, international financial aid, etc.);
- energy efficiency awareness and popularisation.

In 2024, the practice of establishing offices for decarbonisation and energy efficient transformation has continued. In particular, such offices were established in

¹⁷ State Agency on Energy Efficiency and Energy Saving of Ukraine – a public authority responsible for the implementation of energy efficiency policy in Ukraine. Available at: www.saee.gov.ua (accessed on 24.09.2024).

¹⁸ Regulation of the Cabinet of Ministers of Ukraine of 14.01.2015 No. 4 on the Certain Issues of the Activity of the Central Bodies of Executive Power. Available at: <https://zakon.rada.gov.ua/laws/show/4-2015-%D0%BF#Text> (accessed on 25.01.2024).

¹⁹ Regulation on the State Energy Efficiency and Energy Savings Agency of Ukraine approved by the Regulation of the Cabinet of Ministers of Ukraine of 26.11.2014 No. 676. Available at: <https://zakon.rada.gov.ua/laws/show/676-2014-%D0%BF#Text>. (accessed on 13.06.2024).

Kharkivska oblast, the cities of Zhytomyr, Vynnytsia, Rivne (Ukrajinska Energetyka, 2024), and Mykolaiv (Mykolaivska oblasna rada, 2024).

The promotion of energy efficiency at the regional level is an important direction, and in this aspect, the cooperation between the StateEnergyEfficiency and local authorities shall be considered a crucial and positive step. However, in our view, to ensure principles of good governance—with respect to accountability and oversight—these functions should be implemented via the territorial authorities of the StateEnergyEfficiency. Achieving this will require the respective decision of the Cabinet of Ministers of Ukraine (in particular, amendments to the Regulation on the StateEnergyEfficiency regarding its territorial bodies).

3.2.5 Tackling Energy Poverty

The number of energy consumers in vulnerable situations has increased since the onset of the full-scale aggression. Many individuals have lost their jobs or experienced substantial reductions of their salaries. According to findings by the World Bank (The World Bank, 2023), “the proportion of Ukrainians living in poverty increased from 5.5 percent to 24.1 percent in 2022, pushing an additional 7.1 million people into poverty and reversing 15 years of progress”. It should be emphasised that the tariffs on utilities for households, first of all on electricity, were significantly revised upward since 1 June 2023 (see the table below).

Tariff on electricity for categories of households	Before 01.06.2023 ²⁰ fixed price in UAH for 1 kWh	01.06.2023- 30.04.2024 ²¹ fixed price in UAH for 1 kWh
Individual consumers - up to and including 250 kWh - above 250 kWh (for the entire amount of consumption)	1,44 1,68	2,64
Collective consumers, excluding dormitories (for the entire amount of consumption)	1,68	2,64
Dormitories (for the entire amount of consumption)	1,68	2,64

Table 1. Tariffs on electricity for households

This has led to an increase in citizens’ debts for housing and communal services. The problem of energy poverty requires adequate governmental decisions.

The official statistical data on citizens’ debts for housing and communal services, including energy services, is provided by the competent public authority – the

²⁰ Appendix 3 to the Regulation on imposing of special obligations to the electricity market participants for the encouragement of public interest in the process of functioning of the electricity market (in the reduction of the Regulation of the Cabinet of Ministers of Ukraine of 11.08.2021 No. 859). Available at: <https://zakon.rada.gov.ua/laws/show/483-2019-%D0%BF/ed20230427#Text> (accessed on 26.03.2024).

²¹ Regulation of the Cabinet of Ministers of Ukraine of 30.05.2023 No544 “On Changes to Regulation of the Cabinet of Ministers of Ukraine of 05.06.2019 No. 483”. Available at: <https://zakon.rada.gov.ua/laws/show/544-2023-%D0%BF#Text> (accessed on 26.03.2024); Regulation of the Cabinet of Ministers of Ukraine of 27.12.2023 No1375 “On Changes to Regulation of the Cabinet of Ministers of Ukraine of 05.06.2019 No. 483”. Available at: <https://zakon.rada.gov.ua/laws/show/1375-2023-%D0%BF#Text> (accessed on 26.03.2024).

State Statistic Service of Ukraine. However, the most recent data available on its official website pertains to the year of 2021 (Derzhavna sluzhba statystyky Ukrainy, 2021). This information has not been made publicly available since the imposition of martial law. Currently, data regarding citizens' debts for housing and communal services is disseminated through media reports based on figures provided by specific public authorities, in particular, the Ministry for Communities, Territories and Infrastructure Development of Ukraine (Ministry of Infrastructure), National Energy and Utilities Regulatory Commission (NEURC), and the local authorities (local state administrations). For example, according to Ushchapovskyi, K., the former Chairman of the NEURC, the citizens' debts for the electricity consumed increased by 41% compared to pre-war times (Ilchenko, 2024). However, the publicly available data on utility debts is rather sporadic and does not provide a comprehensive overview of the situation. The governmental decision-making should be grounded in official statistical data provided by the State Statistics Service.

When the full-scale aggression began, many Ukrainians were forced to flee their homes and were unable to pay for utility services on time. To support the population, the Ukrainian government introduced a moratorium on the disconnection of utility services and the imposition of fines for non-payment of their bills (Regulation of the Cabinet of Ministers of Ukraine of 5 March 2022 No. 206 "On Certain Issues of Payments for Utilities during the State of Martial Law").²² However, this moratorium was applied not only to vulnerable citizens, but also to individuals who could afford the utility payments. According to experts' opinions (Barbu, 2024), this legislative gap also contributed to a rise in utility debts.

Utility debt poses challenges not only for the energy companies. Costs are needed to repair the objects of critical energy infrastructure destroyed by military attacks. To solve the problem with citizens' utility debts, the Government of Ukraine decided to abolish the above-mentioned moratorium (Regulation of the Cabinet of Ministers of Ukraine "On Changes to Certain Regulations of the Cabinet of Ministers of Ukraine Regarding the Utility Payments" of 29.12.2023 No1405).²³ Under this new regulation, citizens may face restrictions in access to utility services in cases of unpaid energy bills: energy services can be interrupted, fines can be imposed, and debts can be recovered in court. As referred to in Art. 26 of the Law of Ukraine "On Housing and Communal Services" if utility services are not paid on time, the consumer shall pay a fine in the sum stipulated by the contract that shall not exceed 0,01 per cent of the sum of the debt for each day of the payment delay. The total sum of the paid fine shall not exceed 100 per cent of the total sum of the debt.²⁴

According to media reports, some energy service providers began implementing the aforementioned measures as of January 2024. For instance, the energy company "Yasno" informed about electricity disconnections for consumers with utility debts starting from 29 January. Customers are to be informed in advance, not less than 10 working days before the day of disconnection, in a written form which shall include the

²² Regulation of the Cabinet of Ministers of Ukraine "On Certain Issues of Utility Payments in the Period of the State of Martial Law of 05.03.2022 No. 206. Available at: <https://zakon.rada.gov.ua/laws/show/206-2022-%D0%BF#Text> (accessed on 29.02.2024).

²³ Regulation of Cabinet of Ministers of Ukraine "On Changes to Certain Regulations of the Cabinet of Ministers of Ukraine Regarding Utility Payments" of 29.12.2023 No. 1405. Available at: <https://zakon.rada.gov.ua/laws/show/1405-2023-%D0%BF#Text> (accessed on 29.02.2024).

²⁴ Law of Ukraine "On Housing and Communal Services" No. 2189-VIII of 09.11.2017. *Vidomosti Verkhovnoji Rady Ukrainy*, 2018, No. 1, St. 1. Available at: <https://zakon.rada.gov.ua/laws/show/2189-19#Text> (accessed on 29.09.2024).

grounds for disconnection, the sum of debts under the contract, and the period during which the debt accrued (Lysenko, 2024). Similarly, the energy company "Vinnytsiaoblenergo" informed on 29 January about the initiation of disconnections for non-paying consumers. Rivneoblenergo disconnected from the electricity supply 215 consumers on 25 January (Chaika, 2024). Experts reasonably argue that this decision seems to be premature and may negatively influence the most vulnerable categories of energy consumers. In our opinion, such measures should be implemented gradually and include protection mechanisms for vulnerable categories of citizens.

In addition, many individuals have been forced to leave their places of residence and relocate to another place within Ukraine or abroad. Despite their absence, they still remain responsible for paying their utility bills, but in some cases face difficulties that also lead to the accumulation of utility debts. In particular, in the case of metering the utility services (primarily, electricity and gas supply), the utility bills are formed on the basis of data submitted by the consumers to the energy service providers. If they are unable to submit the data meter readings for gas, water, or electricity, the utility providers issue bills based on average consumption. Many displaced individuals believed these charges were erroneous and postponed resolution until their return. In such situations, professionals recommended submitting approximate data readings. However, in some cases, some utility companies rejected these estimates and requested instead a formal metering control (a procedure that requires the owner/ a tenant (or their representatives) to be physically present). The above-mentioned Regulation of the CMU No. 1405 includes special provisions related to the situation when people are temporarily absent from their real estate properties. It is stated that the consumers are exempt from utility charges if they informed the service provider about the temporary absence in the residential premises (other real estate property) for more than 30 calendar days (in premises without meters); if consumers and other residents are absent for more than six months, to be exempted from the obligation to pay utility bills, they must resubmit an application to the service provider with supporting documentation in electronic or paper format within one month of the end of every six months. However, it should be emphasised that this mechanism applies only to cold and hot water supply and not to electricity and gas supply. Furthermore, questions have arisen regarding the nature and requirements of the supporting documentation. According to the regulation mentioned above, such supporting documentation can include references from the places of temporary residence, work, rehabilitation, studies, military service (in particular, issued in a foreign country). However, it remains unclear if the application and supporting documents can be submitted via any possible electronic means (e.g., via electronic cabinet of the consumer, official e-mail, or messengers of the service provider), and if a digital signature is required. In case of supporting documentation issued in a foreign country, it is unclear whether the official translation and any form of legalisation are needed. Considering the above-mentioned, the right not to pay for utility bills in case of temporary absence of the consumer will be difficult to realise in practice.

Subsidies for vulnerable citizens are provided under the Laws of Ukraine "On State Social Standards and State Social Guaranties" (Art. 9),²⁵ "On Housing and Communal Services of Ukraine", and the Procedure on provision of housing subsidies approved by Regulation of the Cabinet of Ministers of Ukraine of 21.10.1995 No. 848 (in

²⁵ Law of Ukraine "On State Social Standards and State Social Guaranties" of 05.10.2000 No. 2017-III. *Vidomosti Verkhovnoji Rady Ukrainy*, 2000, No. 48, st. 409. Available at: <https://zakon.rada.gov.ua/laws/show/2017-14#Text> (accessed on 29.09.2024).

the wording of Regulation of the Cabinet of Ministers of Ukraine of 14.08.2019 No. 807)²⁶ still remain the main form of state support. Some amendments to the procedure for subsidy provision have been introduced to better assist internally displaced persons. Notably, citizens may apply for subsidies to any territorial bodies of the Pension Fund of Ukraine (Voronkova, 2023). However, access to subsidies is restricted for many people in difficult life circumstances due to the established legislative restrictions. In particular, subsidies are not granted to households with utility debts exceeding the threshold established in the aforementioned Procedure on provision of housing subsidies (para. 5, point 14). Other state support schemes for vulnerable categories of energy consumers may be applied in accordance with the current legislation (e.g., Art. 61 of the Law of Ukraine "On Electricity Market",²⁷ Art. 16 of the Law of Ukraine "On Natural Gas Market").²⁸ Nonetheless, the criteria defining vulnerable categories of energy consumers, as well as the corresponding protection procedures, which are to be determined by the Government of Ukraine, are still in the development stage.²⁹

The most recent changes to electricity tariffs effective from 1 June 2024 demonstrate that the tendency of hikes in electricity tariffs is likely to continue. Therefore, according to the Regulation of the Cabinet of Ministers of Ukraine of 31.05.2024 No. 632 "On changes to Regulation of the Cabinet of Ministers of Ukraine" of 05.06.2019 No. 483 the fixed electricity tariff for individual and collective household consumers has been introduced. Regardless of the volume of energy consumed, the tariff is set at 4,32 UAH for 1 kWh (including VAT). For individual and collective households residing in residential buildings (including hotel-type residential buildings and flats) equipped with electric heating units, the electricity tariff depends on the time of year and the volume of consumption (during the period from 01.06 to 30.09 – 4,32 UAH for 1 kWh (including VAT) regardless of the volume of consumption; during the period from 01.10 to 30.04 (inclusive) for consumers who consumed up to 2000 kWh (inclusive) – 2,64 UAH for 1 kWh (including VAT), while for consumers who consumed more than 2000 kWh for the whole period of consumption – 4,32 UAH for 1 kWh (including VAT).

Therefore, the issues described above are expected to persist and require appropriate decisions from public administration entities. In our opinion, a moratorium on requests for metering control should be introduced until the end of the state of martial law. Additionally, the introduction of smart metering systems (with the opportunity to collect data remotely) should be considered as a solution for this problem.

Also, according to CMU Regulation No. 1405 mentioned above, fines for non-payment of utility bills cannot be imposed on citizens living in territories where hostilities are (or were) conducted, or which are temporarily occupied by the Russian Federation according to the list approved by the order of the Ministry of Reintegration of Temporally

²⁶ Procedure on provision of housing subsidies approved by Regulation of the Cabinet of Ministers of Ukraine of 21.10.1995 No. 848 (in the wording of Regulation of the Cabinet of Ministers of Ukraine of 14.08.2019 No.807). Available at: <https://zakon.rada.gov.ua/laws/show/848-95-%D0%BF#Text> (accessed on 04.03.2024).

²⁷ Law of Ukraine "On Electricity Market" of 13.04.2017 No. 2019-VIII. Available at: <https://zakon.rada.gov.ua/laws/show/329-19#Texthttps://zakon.rada.gov.ua/laws/show/2019-19#Text> (accessed on 04.03.2024).

²⁸ Law of Ukraine "On Natural Gas Market" of 09.04.2015 No. 329-VIII. Available at: <https://zakon.rada.gov.ua/laws/show/329-19#Text> (accessed on 05.03.2024).

²⁹ Draft Procedure on Use of Special Additional Protection Actions for Vulnerable Categories of Electricity Consumers updated by 01.11.2023 was presented by the Ministry of Social Policy of Ukraine. Available at: <https://www.msp.gov.ua/projects/838/> (accessed on 04.03.2024); Draft National Energy and Climate Plan of Ukraine 2025-2030. Available at: <https://www.me.gov.ua/Documents/Detail?lang=uk-UA&id=f7088035-142e-4912-9aa0-6fe2def80c1b&title=ProektNatsionalnogoPlanuZEnergetikiTaKlimatuUkraini2025-2030> (accessed on 05.03.2024).

Occupied Territories of Ukraine (hereinafter: **the MinReintegration**). This list was established by Order No. 309 of 22 December 2022.³⁰ Experts warn that there are territories that are suffering from frequent missile attacks (e.g., Odesa city); however, such territories are not included in the list mentioned above (Barbu, 2024). The MinReintegration regularly updates this list in accordance with the criteria stipulated by the Cabinet of Ministers of Ukraine in Regulation "On certain issues of formation of the list of territories where hostilities are (were) conducted or temporarily occupied by the Russian Federation" No1364 of 6 December 2022.³¹ Therefore, it is recommended to update these criteria to include the territories that are subject to regular missile attacks.

4. CONCLUSIONS

To promote sustainable access to energy services in Ukraine during wartime, the following measures should be distinguished: ordinary public governance measures and crisis public governance measures. In turn, public governance measures for crisis should include short-term (emergency situation/temporary) measures and long-term (resilience building) measures for crisis.

A balanced approach to centralised and decentralised (distributed) energy infrastructure is needed in Ukraine. It is important to clarify that decentralised (distributed) energy infrastructure should not be confused with reserved energy infrastructure. The first systems represent permanent solutions that can also contribute to long-term crisis resilience of the energy sector, while the reserved energy infrastructure serves as a temporary mechanism that should be employed in emergencies when permanent solutions are temporarily unavailable.

The crisis resilience measures implemented by the public administration in the energy sector should be systematically categorised into the following:

- measures before the war/crisis phase (*ex-ante* measures);
- measures during the war/crisis phase (*ad hoc* measures);
- measures after the end of the war/crisis (*ex post* measures).

Ex-ante and *ex-post* measures are long-term measures. The difference between the two of them is that *ex-post* measures shall consider the weaknesses revealed during the war/crisis.

Crisis resilience measures shall be undertaken at the following levels:

- national;
- regional;
- local;
- household/neighbourhood.

The concrete crisis resilience measures shall be specified in the national, regional, and local programmes and action plans approved by respective public authorities.

The crisis public governance measures should encompass, in particular, measures aimed at protecting critical infrastructure from both physical and cyber-

³⁰ Order of Ministry of Reintegration, of Temporally Occupied Territories of Ukraine "On Approval of the List of territories where military actions are in place (were in place) or temporary occupied by the Russian Federation" No. 309 of 22.12.2022. Available at: <https://zakon.rada.gov.ua/laws/show/z1668-22#Text> (accessed on 06.02.2024).

³¹ Regulation of the Cabinet of Ministers of Ukraine "On certain issues of formation of the list of territories where hostilities are (were) conducted or temporarily occupied by the Russian Federation" No. 1364 of 06.12.2022. Available at: <https://www.kmu.gov.ua/npas/deiaki-pytannia-formuvannia-pereliku-terytorii-na-iakykh-vedutsia-velysia-boiovi-dii-abo-tymchasovo-t61222> (accessed on 09.02.2024).

attacks. These measures include the establishment of public units equipped with heating and electricity, water, installation of portable energy sources for civilian use, and the provision of alternative power and heating sources in the event of disconnection from district systems.

The establishment of points of invincibility, the use of power generators, and the implementation of energy efficiency measures represent key strategies for ensuring public access to modern energy services during disconnections from utilities caused by military attacks, which should be the focus of public administration. All of them require appropriate legal framework and control.

The organisation of points of invincibility by the public authorities (designated premises equipped with electricity, heat, water, and a first aid kit for people) should be considered as a permanent crisis resilience measure and proactively supported. The establishment of points of invincibility in public buildings with other purposes of use (e.g., educational institutions) should be considered temporary as crisis public governance measures, and such points should be replaced with units specifically equipped for such purposes as soon as possible. The national legislation in Ukraine should include provisions related to the temporary use of the public buildings in case of emergencies (e.g., like shelters, points of invincibility) to ensure continuity of services, safety of the stakeholders (e.g., pupils and students in case of buildings of educational institutions), and labour law implications (in case of involving the personnel and other stakeholders in the operation of the points, etc.).

The legal regulation governing the transition from district heating to individual heating options in Ukraine requires further improvement, particularly, towards expanding the cases when it is possible without the prerequisite of 50% previously disconnected flats/non-residential premises.

The installation of power generators in residential households must be carried out by qualified professionals. The respective public authorities and local self-government bodies should play an active role in assisting citizens to make informed decisions, in particular, via the provision of such services by municipal utility companies or via the provision of the recommended list of specialists/legal entities specialised in the installation of power generators. Moreover, the power generators installed in households should be subject to regular inspections by professionals, similar to regular inspections of heating and air-conditioning systems in the EU.

The implementation of energy efficiency measures during the renovation of buildings (including multifamily houses) damaged by military attacks and the construction of "zero" energy consumption buildings for those people who lost their homes during the war should be prioritised. The installation of solar panels, wind turbines, and heat pumps by households should be actively encouraged, in particular, by tax incentives within the income tax framework (similar to tax incentives for mortgage loans).

Drawing on the experiences of other countries in the world that have faced challenges in ensuring access to energy during armed conflicts, it is very important to join the efforts of public administration entities, energy companies, and energy consumers supported by appropriate legal regulations to effectively navigate such crises.

For the purposes of good governance (in particular, in terms of accountability and control), it is recommended to establish territorial authorities of the State Energy Efficiency.

Tackling energy poverty remains a crucial task of public administration in Ukraine. It is suggested that the law enforcement procedures regarding utility debts should incorporate protective mechanisms for vulnerable categories of citizens. Moreover, it is advisable to introduce a moratorium on metering control requests until the

end of the state of martial law. Additionally, the implementation of smart metering systems (which allow for remote data collection) should be considered a viable solution to address the problem of the temporary inability of the energy consumer to provide the metering data to the energy service supplier.

An important task of public administration is to properly communicate their decisions related to the right to access to energy resources (in particular, regarding tariff hikes and scheduled disconnections) to citizens. The population is more likely to support the government's decisions if they are duly informed about the underlying reasons for them (e.g., lack of investments for restoring damaged energy infrastructure). Additionally, supporting the population's adaptation to difficulties in accessing energy resources during wartime is another important task for the public administration. This includes promoting changes in energy consumption behaviour, such as reducing electricity use, organising energy consumption according to the schedule of planned interruptions, and being prepared for service disruptions in utility supplies caused by military attacks.

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