



**ACCESS TO MODERN ENERGY SERVICES THROUGH THE PRISM OF CHILDREN'S RIGHTS:
AN OVERVIEW FROM THE PERSPECTIVES OF THE CONVENTION ON THE RIGHTS OF THE
CHILD AND THE POLICY AND LAW APPROACHES OF CERTAIN EU MEMBER STATES AND
UKRAINE**

Yuliya Vashchenko¹

Taras Shevchenko National University of Kyiv, Ukraine

E-mail: yv.vashchenko@gmail.com

Received: 21 April 2021; accepted: 31 May 2021

DOI: <http://dx.doi.org/10.13165/j.icj.2021.06.006>

Abstract. The aims of this research are: to explore the connection between the right to access to modern energy services and children's rights, as stipulated by the Convention on the Rights of the Child; to analyze how the rights of children are addressed in the energy policy and law of certain EU Member States and Ukraine; and to develop recommendations on how to make national energy policy and law more child-sensitive. To achieve these goals, the following objectives were set: 1) to explore the correlation between the right to access to modern energy services and children's rights under the Convention on the Rights of the Child; 2) to analyze the Integrated National Energy and Climate Plans (NECPs) of certain EU Member States in order to find out how children's rights are addressed in policy and law and to identify the most common practices; 3) to analyze the current and prospective legislation in Ukraine that relates to children's rights to modern energy services; and 4) to develop recommendations on how to make national energy policy and law more child-sensitive. The main results of this research are: 1) access to modern energy services is vital for children's enjoyment of their rights (e.g., the right to life, survival, and development, the right to health, the right to education, the right to adequate housing, the right to be protected from any form of violence, neglect, or negligence, and the right to be heard); 2) states shall specifically address issues of children's rights (in particular, by tackling energy inequality, considering the risks for the concrete category of children, targeting certain rights of children that depend on access to modern energy services, and introducing concrete actions and outcome indicators) in the strategic documents and legal acts that relate to universal access to modern energy services; 3) the social protection of low-income families with children in the form of discounts for energy bills and state support for the implementation of energy efficiency improvement measures in residential buildings (as mechanisms for tackling energy poverty), the encouragement of the energy renovation of pre-school and school buildings, and the development of special educational tools on sustainable energy for pupils are considered the most common practices in certain EU Member States; 4) whilst Ukrainian energy policy and law includes some instruments that relate to children's rights as energy consumers, it lacks a complete approach; and 5) the energy policy and law of Ukraine should specifically address children's rights as energy consumers, specifically those based on the common approaches used in EU Member States, in order to consider the peculiarities of children's energy needs.

Keywords: access to modern energy services, children's rights, energy poverty, vulnerable energy consumers

Introduction

Access to modern energy services is essential for the full enjoyment of all human rights and the active participation of people in their economic and social lives. However, many people around the world lack access to sustainable, reliable, environmentally-friendly, and affordable energy services, which has a negative impact on the quality of their lives. UN Sustainable Development Goal 7 (SDG 7) requires states to take necessary actions in order to encourage universal access to modern energy services, to improve energy efficiency, and to increase the share of

¹ Prof., Dr. Habil. in Law, professor at the Administrative Law and Procedure Department at the Law School of Taras Shevchenko National University of Kyiv.

renewable energy sources in the global energy mix. Despite significant steps made towards the achievement of these targets, 840 million people lack access to electricity globally, and 2.90 billion people do not have access to clean cooking (IEA et al., 2019).

In recent decades, the human rights dimension of the universal access to modern energy services has attracted the attention of scholars, in particular: A. Bradbrook (2005); A. Bradbrook, J. Gardam, & M. Cormier (2015); S. Tully (2006); D. Smolin (2009); M. Solis (2015); L. Löfquist (2019); L. Aviles (2012); G. Walker (2015); and K. Danielsen (2012). These researchers have explored the importance of access to modern energy services for the realization of fundamental human rights, and put forward arguments for the establishment of the right to modern energy services (firstly, to a supply of electricity) as a separate human right in itself.

Currently, access to modern energy services (i.e., electricity and heating) is considered a key element of the right to adequate housing (General Comment No. 4, 1991).

The key features of modern energy services are defined as: accessibility; affordability; equal access for all categories of citizen; life, health, and environmental safety; continuity; reliability; diversification of energy supply sources; efficiency; sustainability; and the use of renewable energy resources (Vashchenko, 2017).

Access to modern energy services is essential for all people. Every member of a household can potentially benefit from increased access to energy services, but the degree to which they do so depends on gender, age, and ability. Children, for example, may benefit from increased access to media, improved lighting for reading, and safer streets (Danielsen, 2012).

However, women and children are considered among the most vulnerable categories of people in the absence of such access. Although these social groups are usually discussed together in connection with issues of energy poverty (e.g., pregnant women and infants; women and children in rural areas being mostly responsible for household work, including gathering biomass for heating and cooling), women's right to universal energy access attracts more attention (Danielsen, 2012). This can be partially explained by the fact that the importance of access to electricity for women in rural areas is explicitly emphasized in the Convention on the Elimination of All Forms of Discrimination against Women (Art. 14(2(h))) (UN General Assembly, 1979), whereas the corresponding instrument of special international human rights law on the rights of children – the Convention on the Rights of the Child (hereinafter – CRC; UN General Assembly, 1989) – lacks such a direct connection to access to modern energy services.

In recent years, the issues of children's rights in connection with access to modern energy services has attracted more attention due to the activities of international organizations, first among which is UNICEF (2015).

It is clear that children have peculiarities as energy consumers due to their specific energy needs and the possible negative impacts that lack of access to modern energy services can have on their health, development, and even life.

Therefore, the aim of this research is to explore the connection of the right to access to modern energy services with children's rights, to analyze how children's rights are addressed in the energy law and policy of certain EU Member States and Ukraine, and to develop recommendations on how to make energy policy more child-sensitive.

To achieve these goals, the following objectives were set: 1) to explore the correlation between the right to access to modern energy services and children's rights under the Convention on the rights of the child; 2) to analyze the Integrated National Energy and Climate Plans (NECPs) of certain EU Member States in order to establish how children's rights are addressed and to separate the most common practices; 3) to analyze the current and prospective legislation of Ukraine related to children's right to modern energy services; and 4) to develop recommendations on how to make national energy policy more child-sensitive.

The research in this paper was carried out on the basis of a number of different methods: document analysis, systematic analysis, the comparative method, and the generalization method.

1. The right to access to modern energy services in light of the Convention on the Rights of the Child

The CRC is the core international human rights law instrument that specifically addresses children's rights. Despite the lack of a special provision devoted to it, access to modern energy services is undoubtedly crucial for the expression of all groups of children's rights, whether universal (i.e., belonging to all human beings), special (i.e., belong especially to children), or specific (i.e., belonging to children from specific social groups).

Access to energy is a precondition for the full enjoyment of the majority of children's rights. These include: survival rights (the right to life and the right to health); development rights (the right to education, play, leisure, cultural activities, access to information, and freedom of thought, conscience, and religion); protection rights (against all forms of abuse, neglect, and exploitation); and participation rights (the right to the expression of one's own opinion and to participation in decision-making processes at the national, regional, and local levels).

Firstly, sustainable access to modern energy services is vital for the right to the highest attainable standards of physical, mental, and social wellbeing (i.e., the **right to health**). Two aspects of this matter must be considered: the negative impact on children's health of air pollution emitted by the energy sector, in particular, by technology based on fossil fuel; and the lack of access to modern energy services. In recent years, the first aspect has attracted the attention of a plethora different stakeholders (e.g., young people, human rights defenders, politicians, and scholars) in connection with issues of climate change. Children, especially infants, are particularly vulnerable to air pollution. The Committee on the Rights of the Child emphasizes the negative impact of environmental pollution on children's health, and encourages State Parties to put child health concerns at the center of their climate change adaptation and mitigation strategies (General Comment No. 15, 2013). The negative impact of fossil fuel-based energy industries on children's rights and their environment was debated in 2016, during the Day of General Discussion devoted to children's rights and the environment (Committee on the Rights of the Child, 2017). The second aspect of this issue relates to the negative impact on children's health of a lack of access to the modern energy services necessary for the satisfaction of basic energy needs (e.g., for cooking, heating, and cooling). The CRC (Art. 24) stresses the importance of adequate nutrition and clean drinking water for children's health, which is not possible without sustainable access to modern energy services. Sustainable energy services (firstly, an electricity supply) are essential for healthcare providers, particularly in tackling the problem of infant and child mortality as they are vital for the sterilization of instruments and the use of specific medical equipment. In the current climate, a stable supply of electricity is crucial for the usage of the special medical equipment (e.g., oxygen plants; World Health Organization, 2020) necessary for treatment of COVID-19.

As was mentioned above, access to energy services is mostly considered a core element of the right to adequate housing (which is part of the right to an adequate standard of living). Art. 27 of the CRC focuses on the right of every child to a standard of living adequate for their physical, mental, spiritual, moral, and social development. Adequate housing also features among the key elements of this right. When households lack access to modern energy services, this situation is defined as energy/fuel poverty. This can be caused by technical (due to a lack of technical access, particularly common in remote areas) or financial (lack of affordability) issues. Energy poverty can be combined with poverty in general, and alleviating the former is considered to be a key precondition in tackling the latter.

Energy poverty is a barrier to the full enjoyment of children's other rights. In particular, the **right to education**, which is essential for the full development of children, can be violated in many ways by a lack of access to modern energy services. For example, children (girls especially) in the rural areas of developing countries typically spend a lot of time gathering wood and biomass for cooking and heating, and thus spend less time on their education (UNDP, 2013). Another example involves children from households without access to electricity, who can only

study during the day-time. In recent times, this situation has worsened due to the restrictions imposed by the COVID-19 pandemic, where children who lack access to electricity and the internet are not able to attend school lessons that have moved online.

Another aspect of the correlation between the right to education and access to modern energy services is the provision of adequate learning conditions, including access to modern energy services, in educational institutions:

[o]ver 230 million children go to primary schools without any electricity, compromising educational and development outcomes (SDG 4). Electrification at primary schools stands at a mere 69%. Enabling policies are needed to incentivize and facilitate a more coordinated approach, along with investments in sustainable and clean energy and education infrastructure and services, in order to close the electricity access gap in education, and also drastically improve girl-to-boy ratios in schools (Accelerating SDG achievement, 2019).

On the topic of the connection between the right to access to modern energy services and the right to education, the role of education in the promotion of clean energy is crucial. Children should be considered **ambassadors of energy efficiency** to their families, who can contribute to changes in the behaviors of energy consumers. Therefore, it is important to include special study disciplines (or special modules) devoted to topics such as: the efficient use of energy in houses/flats; energy efficiency measures; and the changing of options from conventional to renewable sources of energy. Professionals encourage schools to “Enhance public awareness and education for adults and children about sustainable energy, in order to facilitate necessary behavioral changes, build a technical skill base, and encourage youth innovation to advance sustainable energy solutions” (Accelerating SDG achievement, 2019).

Access to modern energy services is a precondition of the adequate **protection of a child from any form of violence, neglect, or negligence** (Art. 19 of the CRC). In particular, lack of access to electricity in a household makes it impossible to receive prompt information regarding domestic violence, and the absence of street lighting supports violence against children during the evening. The number of domestic injuries among children increases with lack of access to modern energy services. It should also be noted that there is data to suggest that burns are among the most common accidents and injuries suffered by children at home. “Heating and lighting sources and cooking equipment, especially those relying on fossil fuels, all carry risks. In particular, heating or cooking on open fires that are at ground level pose significant dangers to children” (World Health Organization & UNICEF, 2008). Surveys outline the fact that children from poor families, single-parent families, multi-child families, and families that use gas and wood for heating are at the biggest risk of burns, and in one survey “the burn surface was more extensive in children whose homes had coal heating” (Kawalec & Pawlas, 2020).

As has arisen from the principle of non-discrimination (CRC, Art. 2), all children should be promoted access to modern energy services without discrimination of any kind, irrespective of the child's, their parent's, or their legal guardian's race, color, sex, language, religion, opinions (political or otherwise), national, ethnic, or social origin, property, disability, birth, or any other status. However, many children in the world still face the problem of energy inequality due to their “double” vulnerability – being a child whilst simultaneously belonging to another **vulnerable group** (e.g., people who live in rural/remote areas, minorities or indigenous people, refugees, persons with disabilities, poor people, or marginalized social groups).

Thus, access to modern energy services is crucial for the full enjoyment of many of the rights of children. States should specifically address issues of children's rights (in particular, by tackling energy inequality, considering the risks for the concrete category of children, targeting certain children's rights that depend on access to modern energy services, and introducing concrete indicators of actions and outcomes) in the strategic documents and legal acts that relate to energy access for all. Moreover, it should be stressed that, in accordance with Art. 12 of the CRC, the right of children to be heard should be encouraged. The CRC Committee, in General Comment No. 12 (2009), provided a broad understanding of the right to be heard which includes, *inter alia*, the encouragement of

the participation of children in decision-making processes. Therefore, it is important to involve children in the processes of the development and consideration of draft laws, regulations, strategies, and plans devoted to children's right to access to modern energy services. Children's **right to be heard** will be addressed via participation in energy-related decision-making. As the experience of the Netherlands demonstrates, children's right to be heard can be successfully combined with their right to education on energy-related issues. A pilot study in the South-Eastern district of Amsterdam revealed that the involvement of children in the processes of planning the transition of households from traditional to sustainable energy using a game-based approach helped both to obtain information from children as key stakeholders regarding their preferences for renewable energy solutions, whilst also teaching children about which buildings were suitable for which specific technologies (Hettinga et al., 2020).

2. The energy-related rights of children in the NECPs of certain EU Member States

According to the Regulation on the Governance of the Energy Union and climate action (EU/2018/1999), EU Member States had to approve 10-year integrated national energy and climate plans (NECPs) and submit final documents to the European Commission by the end of 2019. These NECPs aimed at the achievement of the EU's energy and climate targets for 2030, and cover the five dimensions of the Energy Union's approach to decarbonization: greenhouse gas reduction and the encouragement of renewables; energy security; energy efficiency; the support of the internal energy market; and research, innovation, and competitiveness (European Commission, 2018). This Regulation emphasizes that the Paris Agreement reaffirms that the Parties should, when taking action to address climate change, respect, promote, and consider their respective obligations on human rights and gender equality. Therefore, Member States are obligated to adequately integrate human rights and gender equality into their NECPs and long-term strategies, and to report on the progress achieved. If a Member State allows its most vulnerable citizens (e.g., children and elderly people) to be disconnected from the electric grid, these people cannot experience appropriate nourishment, health, or quality of life (Alives, 2012).

Therefore, it is necessary to analyze how NECPs address energy-related children's rights, and to define the most common practices.

At first glance, one would presume that children's rights were not specifically targeted in the majority of the NECPs presented. Few NECPs include information directly related to children as energy consumers, or even mention children at all. Therefore, it is necessary to search for issues that relate to children's rights via other adjacent categories – such as “school”, “pre-school”, “kindergarten”, “schooling”, “curriculum/curricula”, “study”, “education”, “pupils”, “students”, “vulnerable consumers”, “parent”, “family/families”, and “energy poverty”. No special provisions related to children were included in the NECPs of Poland, the Czech Republic, Romania, Bulgaria, Austria, or Greece.

The NECP of **Poland** presents information on protection measures for vulnerable energy consumers (e.g., on energy allowances for vulnerable electricity consumers), and the improvement of energy efficiency in schools is mentioned among energy efficiency measures (Ministry of National Assets, 2019). It should be noted that, despite the fact that 60% of schools have had their energy performance improved, a significant number of educational facilities still require modernization (Michalak, Szczotka, & Szymiczek, 2021).

Children are mentioned once in the NECP of the **Czech Republic** – in relation to the possible increase in the incidence of allergic diseases in children as a result of PM10 air pollution. As to energy poverty, it is stated in the NECP that the definition of energy poverty has not yet been stipulated by the legislation (NECP of the Czech Republic, 2019).

As an indirect connection to children's rights, the reference to the Energy Strategy of **Romania** for 2019–2030, with an outlook towards 2050 concerning the need for qualified staff in the field of energy, can be mentioned. For

this purpose, the development of the specific educational packages at all levels, starting from secondary schools, is prescribed (The 2021–2030 Integrated..., 2020).

General information on the protection of vulnerable consumers as a key element of full liberalization is provided in the NECP of **Bulgaria**. It is noted that Bulgaria is currently implementing a support scheme for persons who meet certain income-tested and property-based criteria for poverty, granting heating allowances to eligible recipients via the social assistance system throughout the colder period. It is also stated that a definition of vulnerable users, a set of criteria for identifying them, and some measures for their protection are currently being developed (Ministry of Energy & Ministry of the Environment and Water, n.d.). Thus, it is perhaps time for Bulgaria to pay more attention to the different energy needs of different groups of energy consumers, including children.

There are some issues related to energy poverty, the significance of education in raising awareness of a sustainable future, and the role of the household in energy transition in the NECP of **Austria** (Federal Ministry of the Republic of Austria..., 2019).

The NECP of **Greece** includes provisions related to tackling energy poverty via support mechanisms provided to energy-vulnerable households (Hellenic Republic..., 2019).

Special provisions that relate to children's issues can be found in the NECPs of Lithuania, Latvia, Estonia, the Slovak Republic, Spain, Hungary, Belgium, Cyprus, Italy, and the Netherlands.

The NECP of **Lithuania** mentions children in particular among the socially vulnerable groups in relation to energy poverty, and calls for a comprehensive political approach that combines social and environmental policies. Despite significant improvements, Lithuania “remains one of the European countries with the highest levels of energy poverty, with more than 30 percent of families unable to heat their homes adequately” (Murauskaite, 2020). In order to change the behavior of energy consumers, special educational tools should be implemented, in kindergartens and schools in particular. Lithuania's NECP also states that educational programs on the benefits and practical possibilities of using renewable energy sources are included in the curricula of Lithuanian general education schools. It adds that Lithuania is currently developing a long-term national strategy for the renovation of the public and private residential and non-residential building sectors, which might cover issues of children's rights (NECP of the Republic of Lithuania..., n.d.).

Latvia's NECP contains information on the reduction of energy tariffs for a specific amount of electricity consumed by families taking care of a child with a disability. It plans to introduce studies on resource-efficiency and sustainable lifestyle, starting from pre-school educational institutions (Latvia's NECP 2021–2030, 2020). It should be noted here that “Latvia's performance in the expenditure-based indicators is better than the EU average. 12.7% of households spend a high share of their income on energy expenditure” (EU Energy Poverty Observatory, 2020b).

In **Estonia**, around 2.5 % of children live in absolute poverty, whereas 15.2 % of children are at risk of poverty (Statistics Estonia, 2019). Further, “18.7% of households spend an unusually high share of their income on energy expenditure. This is higher than the EU-average” (EU Energy Poverty Observatory, 2020a). Support for low-income families with many children is available for the purposes of energy saving measures and improving living conditions. In particular, SA Kredex provides a housing grant for families with many children (Estonia's 2030..., 2019).

Raising energy efficiency awareness among children and young people is referred to as one of the key energy efficiency improvement measures in the NECP of the **Slovak Republic**. Developing a National Strategy for raising awareness in the field of energy efficiency is advised, targeting the public from children to specialists and manufacturers (Slovak Ministry of Economy, 2019). The task of raising awareness regarding energy efficiency

and sources of renewable energy belongs to the Slovak Innovation and Energy Agency (SIEA, n.d.). The promotion of renewable energy sources should be focused on the “support of educational programs for children and youth through creating clubs and interest groups, where students acquire new information on energy and its use” (Furmanczuk, 2018).

In the NECP of **Spain**, Children are mentioned in connection with social support to vulnerable consumers, with particular attention being paid to households with children (Integrated NECP, 2020). The issue of children’s rights in connection with access to electricity attracted the attention of wider society in January 2021, when nearly 2000 vulnerable children and their families were left without electricity in freezing temperatures in the Madrid region. Save the Children called for a ban on cutting families off from electricity during the cold periods, and for more flexible payment options to be available for vulnerable families (Save the Children, 2021).

The Government of **Hungary** plans to extend the subscription-based electricity connection scheme for households living in buildings that are dilapidated or unsuitable for renovation, which ensures the electric heating of at least one room for families with small children. The importance of establishing an energy- and climate-literate society is also emphasized: special information campaigns targeting different age groups are planned, along with measures that raise educational awareness focusing on younger generations (Ministry of Innovation and Technology, n.d.).

The task of implementing educational programs on the use of renewable energy sources in kindergartens and schools is also present in the NECP of **Croatia** (Ministry of Environment and Energy, 2019).

It is stated in the NECP of **Cyprus** that the category of vulnerable customers of electricity includes, in particular, five-member families or families with 3 or more dependent children that receive child benefits from the Welfare Benefits Administration Service of the Ministry of Labour, Welfare, and Social Insurance, and have an annual gross family income of up to €51,258. The income criterion of €51,258 increases by €5,126 for each additional child beyond four. Energy efficiency measures targeted at schools are defined among financial incentives and other measures. Awareness-raising campaigns such as lectures at schools are mentioned (Cyprus’ Integrated National..., 2020).

According to its NECP, **Italy** provides special social support in the form of electricity and gas bills discounts for large families (those with more than three dependent children). In order to launch information, training, and awareness-raising campaigns in schools, a specific fund named “Io sono Ambiente” (I am the environment) was established, with €6 million allocated for 2020–2022. This funding can be used for improving the safety and energy efficiency of buildings owned by municipalities, with priority provided to school buildings (Integrated NECP of Italy, 2019).

In the **Netherlands**, the term “energy poverty” is not used, and there are no special objectives related to energy poverty. Instead, households with a lower income are supported via schemes of general social policy. Special provisions devoted to tackling child poverty have been included in the NECP, which specifically states that in the next few years the government will focus on reducing the number of households with children that are unable to cope with a low income. Different forms of support to employed parents with low incomes will be introduced (most often related to taxation). As far as raising the awareness of children on sustainable energy and climate issues is concerned, it is prescribed that all pupils – including those in primary education – should be taught on energy transition issues in particular. Thus, it is necessary to make changes to the curriculum. Special provisions in the NECP are devoted to the energy renovation of national building stock. These measures are focused on reducing energy consumption and increasing the share of renewable energy in the built-up environment (Ministry of Economic Affairs and Climate Policy, 2019).

In the NECP of **Belgium**, significant attention is paid to the issues of energy renovation in schools (e.g., the transition to RES, energy loans, and school energy management) and campaigns that raise energy efficiency

awareness. Energy poverty issues are specifically presented in the NECP. It is stated that there is a federal policy for the protection of low-income or vulnerable residential energy consumers. Based on a survey of energy vulnerability, it was concluded that single-parent families are at an increased risk of energy poverty (Belgian Integrated National..., 2019).

According to the NECP of **Portugal**, energy poverty has an impact on not just the well-being and comfort of citizens but also on the health, mortality, performance, and professional income of adults and the social isolation of families and young people. Families are considered to be among the vulnerable categories of energy consumers, and there are mechanisms for tackling energy poverty and ensuring the protection of vulnerable consumers (e.g., the social tariff). As to the energy renovation of buildings, it is stated that the solutions to be adopted include the electrification of buildings and an increased use of renewables by installing thermal solar collectors that can provide heat – in particular, in schools. Concerning raising young people’s awareness of energy efficiency and climate issues, the promotion of environmental educational programs at schools is prescribed (Portugal..., 2019).

In the case of **France**, it should be mentioned that the NECP includes provisions regarding the protection of the most vulnerable households, as well as the provision of a task force aimed at accelerating the energy renovation of school buildings. This should then raise awareness of the implications of energy savings for new generations, as educational buildings represent around 50% of the building stock of local authorities (Integrated NECP for France, 2020).

In **Luxembourg**, as referred to in the NECP, three main directions can be identified as those that relate to children’s right to access to modern energy services. Firstly, raising children’s awareness on energy- and climate-related issues via: workshops on sustainable energy; the use of renewable energy sources; the introduction of the themes of energy efficiency, renewable energy, climate change, and sustainability into the school curriculum; and even the participation of pupils in the installation of solar panels on school roofs. A second direction is the implementation of energy renovation measures in schools. Luxembourg has adopted a strategy for sustainable and energy-efficient public buildings in relation to both new constructions and existing structures, in order to improve energy efficiency and the use of renewable energy in government and government-related buildings. The aim is for all suitable public buildings to be equipped with photovoltaic installations by 2025. In addition, better integration of photovoltaic installations and increased use of renewable heat, especially that which is based on medium-depth geothermal energy, will be promoted in schools and their infrastructures. The third direction is the provision of social support measures to energy-poor people. Luxembourg’s NECP mentions a comprehensive strategy for tackling poverty in general (involving the minimum wage, social inclusion income (REVIS), etc.), as well as a number of measures offering targeted help to people affected by energy poverty. Such help can be provided in the form of social assistance to people unable to pay their electricity or gas bills, or in the form of financial incentives for homeowners to switch from fossil to renewable energy sources (Luxembourg’s integrated..., 2018).

It should be noted that several countries – in particular, **Finland, Denmark, and Malta** – include neither provisions that relate to children’s right to energy services nor information that relates to energy poverty, which is due to the fact that there are very few households that face the problem of energy poverty in these countries (Finland’s Integrated..., 2019; Danish Ministry of Climate, Energy and Utilities, 2019; NECP of Malta 2021–2030).

Bases on the analysis provided, it can be concluded that the NECPs of the majority of the EU Member States include provisions that directly (e.g., the provision of state support to families with children) or indirectly (i.e., those that concern more broad targeting strategies – e.g., the energy renovation of public and private buildings) relate to children’s rights. The most popular actions that contribute to the protection of energy-related children’s rights are as follows: firstly, some EU Member States provide social support to families with children in vulnerable conditions (e.g., families with small children, multi-child families, single-parent families, and families with a child with disabilities) to cover the cost of energy bills and energy efficient renovations; secondly, almost all of the EU Member States have already introduced, or plan to introduce in the near future, special study

disciplines/modules/training for pupils in pre-schools and schools devoted to energy efficiency and the use of renewable energy sources; and, thirdly, kindergarten and school buildings are subject to energy renovation that relates to the transition to renewable energy sources.

3. Children's rights in the energy policy and law of Ukraine

In Ukraine, the legal framework for the protection of children's rights includes the Constitution of Ukraine and special laws on the encouragement and protection of children's rights. It should be emphasized that Ukraine ratified the CRC and all three optional protocols.

Some provisions related to children's right to access to modern energy services can be found both in special legislation related to children's rights and in the energy legislation. The majority of these relate to the issue of energy poverty and the necessity of protecting vulnerable energy consumers, including children. However, there are no complex provisions that consider all of the aspects of children's right to sustainable energy services.

As to the special legislation on children's rights, provisions related to the protection of the right of children to modern energy services are included in Art. 13 of the Law of Ukraine on the protection of childhood (2001). Here, it is stated that multi-child families are provided with state aid in the form of discounts on payments for utilities (gas, electricity, heat supply, or other services), and in the price of fuel used for heating (in case of the absence of a district heating supply).

In recent years, a number of legal acts have been approved in the energy sector. A set of legislative proposals were also elaborated and are currently awaiting approval. Some of these are of significant importance in the field of children's rights.

The approval of the Law of Ukraine on the Electricity Market (2017) was one of the most remarkable reforms of the energy sector of Ukraine. This Law contains the term "vulnerable consumers", which is considered to constitute domestic consumers defined in accordance with the procedure established by the Cabinet of Ministers of Ukraine, who have a right to aid for the compensation of payments for electricity consumed and/or protection from disconnections in certain periods, as prescribed by law. In order to implement actions aimed at reducing the spread of COVID-19 and the special social protection of some categories of electricity consumers, the Regulation of the Cabinet of Ministers of Ukraine on the provision of compensation to certain categories of electricity consumers (2021) was approved. In accordance with this Regulation, special compensation is to be provided, *inter alia*, to multi-child and foster families, as well as to family-type orphanages.

The Law of Ukraine on the Energy Performance of Buildings (2017) includes mechanisms for the improvement of the energy efficiency of buildings (e.g., the energy certification of buildings) that shall contribute to tackling energy poverty. However, this law has no special provisions relating to energy poverty, nor to children's right to access to energy services.

When discussing the correlation between access to modern energy services and the right to education, the role of the energy service of buildings occupied by publicly-owned educational institutions should be noted. Public buildings are traditionally considered to be large energy consumers with significant potential for the improvement of their energy efficiency. However, such energy efficiency measures require investments that are frequently unaffordable for state or local budgets. Following from the best practice of other countries, the energy service can be considered a good instrumental solution. This instrument is relatively new in terms of its application to the public buildings sector in Ukraine; however, it has become very popular in recent years after necessary changes were made to the legislation. Thus, the Law of Ukraine on the Introduction of New Investment Opportunities and Guaranties for the Rights and Legal Interests of Economic Entities in the Implementation of Large-Scale Energy Modernization (2015) introduced the definition of energy service, essential conditions of the energy service contract, and certain peculiarities of the public procurement procedure for energy service. Changes to the

Budgetary Code of Ukraine (2015) on the long-term obligations of energy service enabled the use of energy services for public institutions. According to the information provided by the State Agency on Energy Efficiency and Energy Saving of Ukraine (SAEE), the majority of concluded energy service contracts involved supplying kindergartens and secondary schools with individual heating units, featuring hour-based regulation and dispatching control (Department of City Infrastructure of Sumy City Council, 2021).

Concerning the energy efficiency-related education of children in Ukraine, it should be noted that some successful projects are already in place. In particular, the “Energy Efficient Schools” program – the first of its kind in Ukraine – was established within the framework of the “Municipal Energy Reform in Ukraine” (MERP) USAID Project in 2009, and was implemented in 24 schools from eight partner cities in the period from 2010–2011. Since 2012, the “Energy Efficient Schools: New Generation” (n.d.) project has been implemented by the Institute of Municipal Development in partnership with the Ministry for Education and Science of Ukraine, and sponsored by the DTEK energy company. This project provides online studies in utility literacy and energy-saving behavior for a large-scale audience, including pupils, their parents, friends, and acquaintances, preparing future leaders in energy-efficiency and utilities management. Another interesting project – Science City “New Energy” – was established at the Ivano-Frankivsk National Technical University of Oil and Gas. This project offers the “New Energy” study course (2018), which is specifically designed for children of primary school age (7–12 years). During the course, children become acquainted with the concept of energy, traditional and alternative types of energy, and the methods of its transformation. For the visual demonstration of alternative energy systems, models from the Ivano-Frankivsk scientific museum are used. The positive experiences generated by the projects mentioned, along with other similar initiatives, should be actively used by the responsible authorities in Ukraine. It is recommended that, in national and local action plans devoted to energy and climate change, the development of study disciplines/modules on energy-related issues (e.g., on the efficient use of energy, renewable energy sources, energy savings, and energy consumer rights) designed for children of different ages is included, along with their introduction into the study curricula of kindergartens and secondary schools.

As to the strategic documents of the Ukrainian legislation, it should be mentioned that the Action Program of the Cabinet of Ministers of Ukraine (2020) includes separate provisions regarding the protection of children’s rights, and the reduction of energy poverty via mechanisms of improving the energy performance of buildings. However, no special provisions regarding children’s rights in connection with access to modern energy services are explicitly provided.

As referred to in the Strategy on the National Security of Ukraine (2020), encouraging an increase in people’s welfare and providing targeted social support to multi-child families and poor people, in particular, are among key tasks (p. 57). In accordance with this document, the Energy Strategy of Ukraine, as well as the Strategy of Environmental Security and Climate Change Adaptation, are to be developed.

On the 4th of March 2021, the draft Law on Energy Efficiency (registration No. 4507 of 17 December 2020) was approved in its first reading. This draft law aims, *inter alia*, at tackling energy poverty. It includes the Cabinet of Ministers of Ukraine’s tasks of developing the indicators of energy poverty in households and approving the long-term aims and actions that seek to reduce energy poverty. Special provisions of this draft Law are devoted to the energy service (Art. 16) as a tool for the implementation of energy efficiency measures. However, no provisions related to children’s rights are included.

On the 1st of March 2021, the Ministry of Environmental Protection and National Resources of Ukraine announced the draft Regulation of the Cabinet of Ministers of Ukraine on the approval of the Strategy of Environmental Security and Climate Change Adaptation until 2030. Here, it is stated that the climate change can have additional negative impacts on vulnerable groups of citizens, including children. However, no concrete indicators or actions are prescribed.

The National Energy and Climate Plan of Ukraine is currently under development and consideration by the responsible public authorities. Considering the information provided in this paper, it is suggested that this plan and other related acts specifically address the issue of children's rights in connection with access to modern energy services based on the common approaches of the EU Member States. These include: provisions on the social protection of vulnerable families with children; the improvement of the energy efficiency of pre-schools and secondary schools; and the introduction of special study programs related to sustainable energy, energy transition, renewable energy sources, energy saving behavior, and the rights of energy consumers.

Conclusions

- 1) Access to modern energy services is vital for the enjoyment of children's rights, such as: the right to life, survival, and development; the right to health; the right to education; the right to adequate housing; the right to be protected from any form of violence, neglect, and negligence; and the right to be heard.
- 2) States shall specifically address issues of children's rights (in particular, by tackling energy inequality, considering the risks faced by the concrete category of children, targeting certain children's rights that depend on access to modern energy services, and introducing concrete actions and outcomes indicators) in the strategic documents and legal acts related to universal access to modern energy services.
- 3) The social protection of low-income families with children in the form of discounts for energy bills and state support for the implementation of energy efficiency improvement measures in residential buildings (as mechanisms for tackling energy poverty), the encouragement of the energy renovation of pre-school and school buildings, and the introduction of special educational tools for pupils regarding sustainable energy are considered to be the most common practices in certain EU Member States.
- 4) Ukrainian policy and law includes some instruments that address children's rights in connection with their access to modern energy services (in particular, social support to multi-child families and the energy renovation of educational buildings), however, their approach in this direction lacks complexity and detail.
- 5) It is suggested to specifically address the issues of children's rights in connection with access to modern energy services in the draft NECP of Ukraine and other related documents. In particular, this should be based on the common approaches used by the EU Member States (e.g., on the social protection of vulnerable families with children, the improvement of the energy efficiency of pre-schools and secondary schools, and the introduction of compulsory study programs related to sustainable energy, energy transition, renewable energy sources, energy-saving behavior, and the rights of energy consumers into the curricula of pre-schools and schools).

References

- Accelerating SDG achievement. SDG 7 policy briefs in support of the High-level Political Forum 2019*. (2019). Retrieved from: https://sustainabledevelopment.un.org/content/documents/22877UN_FINAL_ONLINE_20190523.pdf
- Alives, L. (2012). Electric energy access in European law: A human right? *Columbia Journal of European Law*, 19. <http://dx.doi.org/10.2139/ssrn.2008887>
- Belgian Integrated National Energy and Climate Plan 2021–2030*. (2019). Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/be_final_necp_parta_en.pdf
- Bradbrook, A. (2005). *Access to energy services in a human rights framework*. Retrieved from: https://www.un.org/esa/sustdev/sdissues/energy/op/parliamentarian_forum/bradbrook_hr.pdf
- Bradbrook, A., Gardam, J., & Cormier, M. (2015). Human dimension to the energy debate: Access to modern energy services. *Journal of Energy & Natural Resources Law*, 26(4), 526–552. <https://doi.org/10.1080/02646811.2008.11435198>
- Committee on the Rights of the Child. (2017). *Report of the 2016 day of general discussion. Children's rights and the environment*. Retrieved from: <https://www.ohchr.org/Documents/HRBodies/CRC/Discussions/2016/DGDaycomereport-May2017.pdf>
- Cyprus' Integrated National Energy and Climate Plan for the period 2021–2030*. (2020). Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/cy_final_necp_main_en.pdf
- Danielsen, K. (2012). *Gender equality, women's rights and access to energy services: An inspiration paper in the run-up to Rio+20* [Report]. Retrieved from: https://www.kit.nl/wp-content/uploads/2018/08/1975_Gender-Rights-and-Energy-Report-final.pdf
- Danish Ministry of Climate, Energy and Utilities. (2019). *Denmark's Integrated National Energy and Climate Plan*. Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/dk_final_necp_main_en.pdf
- Department of City Infrastructure of Sumy City Council. (2021). *В Україні набуває популярності енергосервіс як механізм для підвищення енергоефективності бюджетних установ!* [Energy service as a mechanism for the increase of energy efficiency of

- budgetary institutions becomes more popular in Ukraine!]. Retrieved from: <https://dim.smr.gov.ua/v-ukra%D1%97ni-nabiraye-populyarnosti-energoserwis-yak-mexanizm-dlya-pidvishhennya-energoefektivnosti-byudzhethnix-ustanov/>
- Draft Law of Ukraine on Energy Efficiency. (2020). Retrieved from: http://w1.c1.rada.gov.ua/pls/zweb2/webproc4_1?pf3511=70687
- Draft Regulation of the Cabinet of Ministers of Ukraine on approval of the Strategy of Environmental Security and Climate Change Adaptation until 2030. Retrieved from: <https://mepr.gov.ua/news/36922.html>
- Energy School. (N.d.). *Готуємо лідерів енергоефективності та житлово-комунального управління* [Preparing leaders in energy efficiency and utilities management]. Retrieved from: <http://reg.energyschool.org.ua/articles/7>
- Estonia's 2030 National Energy and Climate Plan (NECP 2030)*. (2019). Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/ee_final_necp_main_en.pdf
- EU Energy Poverty Observatory. (2020a). *Member State Report: Estonia*. Retrieved from: https://www.energypoverty.eu/sites/default/files/downloads/observatory-documents/20-06/extended_member_state_report_-_estonia.pdf
- EU Energy Poverty Observatory. (2020b). *Member State: Report Latvia*. Retrieved from: https://www.energypoverty.eu/sites/default/files/downloads/observatory-documents/20-06/extended_member_state_report_-_latvia.pdf
- European Commission. (2018). *Governance of the Energy Union and Climate Action*. Retrieved from: https://ec.europa.eu/clima/policies/strategies/progress/governance_en
- Federal Ministry of the Republic of Austria in Sustainability and Tourism. (2019). *Integrated National Energy and Climate Plan for Austria 2021–2030*. Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/at_final_necp_main_en.pdf
- Finland's Integrated Energy and Climate Plan*. (2019). Publications of the Ministry of Economic Affairs and Employment. Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/fi_final_necp_main_en.pdf
- Furmanczuk, Z. (2018). *Climate and energy policy in Slovakia* [Report]. Retrieved from: http://eko-unia.org.pl/wp-content/uploads/2018/06/mini-report-1_-Slovakia.pdf
- General comment No. 4. (1991). On the right to adequate housing (Art. 11 (1) of the Covenant). 13 December 1991, E/1992/23. Retrieved from: http://tbinternet.ohchr.org/_layouts/treatybodyexternal/Download.aspx?symbolno=INT%2fCESCR%2fGEC%2f4759&Lang=en
- General comment No. 12. (2009). On the right of the child to be heard. *Official Records of the General Assembly*, Sixty-fifth Session, Supplement No. 41 (A/65/41). Retrieved from: <https://www2.ohchr.org/english/bodies/crc/docs/AdvanceVersions/CRC-C-GC-12.pdf>
- General Comment No. 15. (2013). On the right of the child to the enjoyment of the highest attainable standard of health (Art. 24). 17 April 2013, CRC/C/GC/15. Retrieved from: https://www2.ohchr.org/english/bodies/crc/docs/GC/CRC-C-GC-15_en.doc
- Hellenic Republic Ministry of the Environment and Energy. (2019). *National Energy and Climate Plan*. Retrieved from: https://ec.europa.eu/energy/sites/ener/files/el_final_necp_main_en.pdf
- Hettinga, S., Boter, J., Dias, E., Fruijtier, S., Vogel, B., & Scholten, H. (2020). Urban energy transition in a gaming context. The role of children. *Land Use Policy*. Available online 30 July 2020. <https://doi.org/10.1016/j.landusepol.2020.104903>
- IEA, IRENA, UNSD, WB, & WHO. (2019). *Tracking SDG 7: The Energy Progress Report 2019*. Retrieved from: <https://trackingsdg7.esmap.org/data/files/download-documents/2019-Tracking%20SDG7-Full%20Report.pdf>
- Integrated National Energy and Climate Plan for France*. (2020). Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/fr_final_necp_main_en.pdf
- Integrated National Energy and Climate Plan of Italy*. (2019). Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/it_final_necp_main_en.pdf
- Integrated National Energy and Climate Plan 2021–2030* [Spain]. (2020). Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/es_final_necp_main_en.pdf
- Kawalec, A., & Pawlas, K. (2020). Home environment and burns in children. *Burns Open*, 4(4), 167–175. <https://doi.org/10.1016/j.burnso.2020.05.006>
- Latvia's National Energy and Climate Plan 2021–2030*. (2020). Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/lv_final_necp_main_en.pdf
- Law of Ukraine “On introduction of new investment opportunities, guaranties for rights and legal interests of economic entities for the implementation of large-scale energy modernization” of 9 April 2015 No. 327-VIII. *Vidomosti Verkhovnoi Rady Ukrainy*, 2015, No. 26, cr.220.
- Law of Ukraine on Electricity Market of 13 April 2017 No. 2019-VIII. *Vidomosti Verkhovnoi Rady Ukrainy*, 2017, No. 27-28. Cr.312.
- Law of Ukraine on Energy Performance of Buildings of 22 June 2017 No. 2118-VIII. *Vidomosti Verkhovnoi Rady Ukrainy*, 2017 No. 33. Cr.359.
- Law of Ukraine on Protection of Childhood of 26 April 2001 No. 2402-III. *Vidomosti Verkhovnoi Rady Ukrainy*, 2001.No30. P.142.
- Löfquist, L. (2019). Is there a universal human right to electricity? *The International Journal of Human Rights*, 24(6), 711–723. <https://doi.org/10.1080/13642987.2019.1671355>
- Luxembourg's Integrated National Energy and Climate Plan for 2021–2030*. (2018). Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/lu_final_necp_main_en.pdf
- Malta's 2030 National Energy and Climate Plan*. (2019). Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/mt_final_necp_main_en.pdf
- Michalak, P., Szczotka, K., & Szymiczek, J. (2021). Energy effectiveness or economic profitability? A case study of thermal modernization of a school building. *Energies*, 14, 1973. <https://doi.org/10.3390/en14071973>
- Ministry of Economic Affairs and Climate Policy. (2019). *Integrated National Energy and Climate Plan 2021–2030* [Netherlands]. Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/nl_final_necp_main_en.pdf
- Ministry of Energy & Ministry of the Environment and Water. (N.d.). *Integrated Energy and Climate Plan of the Republic of Bulgaria 2021–2030*. Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/bg_final_necp_main_en.pdf

- Ministry of Environment and Energy. (2019). *Integrated National Energy and Climate Plan for the Republic of Croatia for the period 2021–2030*. Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/hr_final_necp_main_en.pdf
- Ministry of Innovation and Technology. (N.d.). *National Energy and Climate Plan* [Hungary]. Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/hu_final_necp_main_en.pdf
- Ministry of National Assets. (2019). *The National Energy and Climate Plan for 2021–2030. Objectives and targets, and policies and measures* [Poland]. Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/pl_final_necp_part_1_3_en.pdf
- Murauskaite, L. (2020). Energy poverty as heating poverty in Lithuania 1. In G. Jigla, A. Sinea, U. Dubois, & P. Biermann (Eds.), *Perspectives on energy poverty in post-communist Europe*. Routledge. <https://doi.org/10.4324/9781003000976>
- National Energy and Climate Action Plan of the Republic of Lithuania for 2021–2030*. (N.d.) Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/lt_final_necp_main_en.pdf
- National Energy and Climate Plan of the Czech Republic*. (2019). Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/cs_final_necp_main_en.pdf
- Portugal. National Energy and Climate Plan 2021–2030 (NECP 2030)*. (2019). Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/pt_final_necp_main_en.pdf
- Program of the Cabinet of Ministers of Ukraine (CMU) approved by the Regulation of the CMU of 12 June 2020 No. 471. Retrieved from: <https://www.kmu.gov.ua/npas/pro-zatverdzhennya-programi-diyalnosti-kabinetu-ministriv-t120620>
- Regulation of the Cabinet of Ministers of Ukraine On provision of compensation to certain categories of electricity consumers of 1 February 2021 No. 64. Retrieved from: <https://zakon.rada.gov.ua/laws/show/64-2021-%D0%BF#Text>
- Regulation on the Governance of the Energy Union and climate action (EU/2018/1999). *EU OJ L* 328, 21.12.2018, p. 1–77.
- Save the Children. (2021, January 12). *Spain: Hundreds of children left in the dark during cold wave* [Press release]. Retrieved from: <https://www.savethechildren.net/news/spain-hundreds-children-left-dark-during-cold-wave>
- SIEA. (N.d.). *Welcome to the Slovak Innovation and Energy Agency*. Retrieved from: <https://www.siea.sk/en/>
- Slovak Ministry of Economy. (2019). *Integrated National Energy and Climate Plan for 2021 to 2030*. Retrieved from: https://ec.europa.eu/energy/sites/ener/files/sk_final_necp_main_en.pdf
- Smolin, D. (2009). The paradox of the future in contemporary energy policy: A human rights analysis. *Cumberland Law Review*, 40.
- Solis, M. (2015). *From right to light: a human rights-based approach to universal access to modern energy services* (Doctoral thesis, University of Adelaide). Retrieved from: <https://digital.library.adelaide.edu.au/dspace/handle/2440/92548>
- Statistics Estonia. (2019). *Children*. Retrieved from: <https://www.stat.ee/en/find-statistics/statistics-theme/well-being/children>
- Strategy on National Security of Ukraine approved by Decree of the President of Ukraine of 14 September 2020 No. 392/2020. Retrieved from: <https://www.president.gov.ua/documents/3922020-35037>
- Study course “New Energy”. (2018, March 5). *Science City “New Energy”*. Retrieved from: <https://newenergy.if.ua/study-course-new-energy-2/?lang=en>
- The 2021–2030 Integrated Energy and Climate Plan* [Romania]. (2020). Retrieved from: https://ec.europa.eu/energy/sites/ener/files/documents/ro_final_necp_main_en.pdf
- The Law of Ukraine on changes to Budgetary Code of Ukraine on introduction of new investment opportunities, guaranties of rights and legal interests of economic entities for the large-scale energy modernization of 9 April 2015 No. 328-VIII. *Vidomosti Verkhovnoi Rady Ukrainy*, 2015, No. 26, S. 221.
- Tully, S. (2006). The contribution of human rights to universal energy access. *Northwestern Journal of Human Rights*, 4(3), 518–548. Retrieved from: <https://scholarlycommons.law.northwestern.edu/njihr/vol4/iss3/3>
- UNDP. (2013). *Gender and Climate Change. Asia and the Pacific. Gender and Energy. Policy Brief*. Retrieved from: <https://www.undp.org/content/dam/undp/library/gender/Gender%20and%20Environment/PB4-AP-Gender-and-Energy.pdf>
- UN General Assembly. (1979). *Convention on the elimination of all forms of discrimination against women, 18 December 1979. UN Treaty Series, 1249, 13*. Retrieved from: <https://www.ohchr.org/en/professionalinterest/pages/cedaw.aspx>
- UN General Assembly. (1989). *Convention on the Rights of the Child, 20 November 1989. UN Treaty Series, 1577, 3*. Retrieved from: <https://www.ohchr.org/en/professionalinterest/pages/crc.aspx>
- UNICEF. (2015). *Why sustainable energy matters to children: The critical importance of sustainable energy for children and future generations*. Retrieved from: https://www.unicef.org/environment/files/UNICEF_Sustainable_Energy_for_Children_2015.pdf
- Vashchenko, Y. (2017). Right to access to modern energy services: international dimensions, national approaches and perspectives regarding constitutionalization in Ukraine. *Jurisprudence*, 24(1), 67–88. <https://doi.org/10.13165/JUR-17-24-1-04>
- Walker, G. (2015). The right to energy: meaning, specification and the politics of definition. *L'Europe en Formation*, 4(4), 26–38. <https://doi.org/10.3917/eufor.378.0026>
- World Health Organization. (2020). *Oxygen sources and distribution for COVID-19 treatment centres. Interim guidance*. Retrieved from: <https://apps.who.int/iris/rest/bitstreams/1274720/retrieve>
- World Health Organization & UNICEF (2008). *Children and burns* [Report]. Retrieved from: https://www.who.int/violence_injury_prevention/child/injury/world_report/Burns_english.pdf