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IMPROVEMENT OF LEGISLATIVE AND REGULATORY CONDITIONS FOR THE DEVELOPMENT OF "GREEN" ENERGY COMMUNITIES IN UKRAINE

Analytical note

June 2024

The document summarizes the results of a particular study, "[Comprehensive Aspects of Establishing Energy Communities in Ukraine: Financial, Technical, Legislative, Informational, And Socio-Ecological Perspectives](#)," and the experience of European countries analysis. It also describes the legal regulation of this issue in Ukraine. The activity of energy communities in Ukraine and the potential of their establishment and functioning are closely connected with the problems of green post-war reconstruction, European integration, energy, environmental, and climate security.

The materials were prepared by the NGO Resource and Analysis Center «Society and Environment» under the coordination of experts of the NGO "Sustainable Development Agency "SYNERGY" with the support of the German Federal Foreign Ministry within the framework of the German-Ukrainian project "Citizen Energy for Resilient Ukraine" 2023-2024.

The materials reflect the position of the authors and do not necessarily reflect the position of the German Federal Foreign Ministry.

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INTRODUCTION

Energy communities are widespread in many countries and unite people, businesses, and communities to meet common needs. In a sense, it is an alternative to traditional business models, especially in areas where giants and monopolies operate on the market.

Energy communities are relevant to Ukraine from many perspectives, including post-war recovery and reconstruction, EU accession, energy, and environmental and climate security. The current crisis in the electric power sector creates additional incentives to find new solutions and models, and energy communities are one of them.

In 2019, the EU adopted the Clean Energy for All Europeans package of legislative initiatives to facilitate the transition from fossil fuels to cleaner energy and institutionalized the concept of two types of energy communities: public energy communities and renewable energy communities. At the same time, public energy initiatives have many years of experience in the EU and started their activities long before the EU formalized their special status.

Since 2019, Ukraine has recognized energy cooperatives as an entity in the renewable energy market. Nevertheless, these changes do not fully implement the provisions of EU directives. Currently, the experience of creating and functioning energy communities (cooperatives) in Ukraine is small, which indicates some challenges that pioneers face.

This document summarizes the results of a particular study of the experience, potential, and obstacles in creating and functioning energy communities and the legal regulation of this phenomenon in Ukraine.

The analytical note consists of five chapters:

- I. Creation of energy communities in Ukraine in the context of green reconstruction, European integration, energy, environmental, and climate security.
- II. Overview of EU legislation for energy communities. The experience of the EU countries.
- III. Regulatory status quo for energy communities (energy cooperatives) in Ukraine.
- IV. Problems and opportunities for the development of energy communities in Ukraine.
- V. Recommendations for the development of energy communities in Ukraine.

Considering European countries' experience, we offer some simple and understandable recommendations to leaders, communities, state bodies, public organizations, and international partners, which, will help find an efficient model(s) of energy communities for Ukraine.

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CHAPTER I. CREATION OF ENERGY COMMUNITIES IN UKRAINE IN THE CONTEXT OF GREEN RECONSTRUCTION, EUROPEAN INTEGRATION, ENERGY, ENVIRONMENTAL, AND CLIMATE SECURITY

As a unique phenomenon and tool of energy policy and industry, energy communities are relevant to Ukraine in various areas of the country's current development and situation. The following dimensions can be considered strategically important for the country:

- post-war recovery and reconstruction;
- accession to the EU;
- energy security;
- environmental safety;
- climatic safety.

Most of these strategic objectives are relevant during wartime, not just in the long term. In the context of wartime, post-war reconstruction, European integration, and energy security are particularly significant. Today, the relevance of environmental and climate security is primarily related to these tasks (one can say it is secondary, derivative). Nevertheless, in the long run, they are independent, essential elements of the context of the development of energy communities. The role of energy communities may differ in each context, and accordingly, the goals, perspectives, or needs of implementing this tool will also vary.

Green reconstruction

Post-war reconstruction and recovery is an urgent need of today. Its planning and implementation are already happening today, including in the energy sector. Considering current and future needs and challenges in these conditions is crucial. First of all, this is because investments made during hostilities will last for decades. These considerations are at the heart of the discourse about "rebuilding better than it was" and "green post-war reconstruction"¹. That applies to electricity generation sources and their transmission and distribution networks. In addition, facilities in other sectors of the energy sphere (in particular, heat supply) or the economy (transportation, housing construction, social infrastructure) will also affect the outlook for energy communities.

In this context, energy communities can be essential for green post-war reconstruction. Thus, experts consider² the creation of autonomous projects on newly constructed and rebuilt streets, in residential complexes, and even individual buildings, as well as social (in particular,

¹ "Zelene" povoienne vidnovlennia Ukrainy: viziia ta modeli. Analitychna zapyska. – Resursno-analitychnyi tsentr "Suspilstvo i dovkillia", ["Green" post-war recovery of Ukraine: vision and models. Policy brief. – Resource and analysis center "Society and environment"], (2022).

² Zaytseva-Chipak N., Fau E., Vostriakova V., Rubanenko O. Comprehensive Aspects of Establishing Energy Communities in Ukraine: Financial, Technical, Legislative, Informational, And Socio-Ecological Perspectives. Vinnytsia. 2023. 33 p.

communal) facilities, to be very profitable for energy communities. Energy communities can immediately participate in planning such objects for energy supply (electricity, heating, cooling).

At the same time, it should be considered that according to the data of the all-Ukrainian survey, green reconstruction (development of energy efficiency, renewable energy, ecological transport, environmental protection) is a priority for only 22.6% of our citizens³. Therefore, when positioning future efforts towards developing energy communities, other benefits/arguments that are more important for the population are worth choosing.

European integration

Ukraine being granted the status of a candidate state for EU membership in 2022 entails the necessity of extensive reform and transformation within the country. This involves aligning with European laws and policies across all sectors and effectively implementing and adhering to such laws. Ukraine's challenging and ambitious task of completing the process of rapprochement as soon as possible will require the country to exert tremendous force and consolidate all interested parties⁴.

It is evident that as part of the "green cluster" of negotiation chapters (sections), Ukraine must transpose and implement the appropriate EU energy laws, including regulations for the operation of energy communities (see Chapter 2 for more details).

Thus, legal approximation (transposition) and practical implementation of the EU legislation on energy communities are necessary to conclude the negotiations on joining the EU. If the Government plans to be ready in two years and acquire EU membership by 2030⁵, implementing these provisions should start immediately.

Energy security

Russia's armed aggression has sharply exacerbated and changed the entire context of the country's energy security. This applies, in particular, to the destruction of large thermal power plants, the occupation of the Zaporizhzhia Nuclear Power Station, and the destruction of transmission and distribution networks and transformer substations. The main challenge in wartime is ensuring the uninterrupted provision of energy services. Nevertheless, it is equally important to understand the strategic tasks of restoring and reforming the entire energy system, including the green transition. In general, experts believe that switching to renewable sources is a highly urgent task today.⁶ These challenges are compounded by a significant shortage of funds (capital), which can be attracted to any projects in this sector.

In the same context, the issue of decentralization in the field of electricity (in particular, distributed generation) became relevant. In today's context, this matter is strongly linked to the

³ [Ukraina maibutnoho: vstup do YeS, povoienna vidbudova, ekolohichni problemy ta enerhetychna nezalezhnist ochyma peresichnoho ukrainsia. – Resursno-analitychnyi tsentr "Suspilstvo I dovkillia", \[The Ukraine of the future: EU integration, post-war recovery, ecological issues and power independence through the eyes of the average Ukrainian. Policy brief. – Resource and analysis center "Society and environment"\], \(2024\).](#)

⁴ [Kartuvannia zoboviazan u sferi dovkillia ta zminy klimatu: pidhotovka do vstupu v YeS. Analitychnyi dokument, Resursno-analitychnyi tsentr "Suspilstvo I dovkillia", \[Mapping commitments in environmental and climate change: preparing for EU accession. Analytical document. Resource and analysis center "Society and environment"\], \(2023\).](#)

⁵ [Ukraina bude hotova do chlenstva v YeS u naiblyzhchi dva roky – Stefanishyna, \[Ukraine will be ready for EU accession in the following two years – Stefanishyna\].](#)

⁶ [Zaytseva-Chipak N., Fau E., Vostriakova V., Rubanenko O. Comprehensive Aspects of Establishing Energy Communities in Ukraine: Financial, Technical, Legislative, Informational, And Socio-Ecological Perspectives. Vinnytsia. 2023. 33 p.](#)

push for self-reliance in electricity supply. Most of the population favours such initiatives, with 39% of Ukrainians expressing the need to combat monopolies to select their electricity or gas providers.⁷

In turn, cities, communities, enterprises, and the population acutely need an independent energy supply, which leads to mass purchases of relevant equipment (gasoline and diesel generators, batteries (charging stations), and low-power solar panels). At the same time, such solutions are usually related exclusively to the power supply. Nonetheless, there are examples of a combination, such as rooftop solar power plants (SPPs), batteries, and heat pumps at communal facilities⁸.

According to our observations, the share of those who supported the transition to clean energy sources decreased in 2024. If 30.4% favoured these measures in 2023, the support dropped to 25.4% in 2024⁹. This means that for the population, any measures related to using renewable energy sources (RES) should be communicated/positioned in a different context (for example, autonomy of the electricity supply or tariffs).

According to the experts interviewed¹⁰, communities' low financial and institutional capacity to implement such projects is a significant challenge. That is why creating energy communities is more interesting for residents if they receive grant funds. Obviously, grant funds cannot become the primary source of development of this tool on a national scale. Furthermore, the lack of funds for investment is a systemic challenge for both communities and the country. At the same time, the population can become an important investment source. As of April 2024, the population's deposits amounted to 1.235 trillion hryvnias (of which 0.8 trillion were in national currency)¹¹.

Thus, energy communities can be an additional tool for achieving short-term goals/priorities to ensure the continuity of energy supply (especially social infrastructure). In the long term, they can also aid in the broader decentralization and growth of distributed generation and in attracting public funding for such projects. The current market conditions for electricity, gas, and heat supply to communities and individuals may not provide enough economic incentive to invest in projects involving energy communities despite these projects being generally considered economically viable. Additionally, the absence of market pricing makes predicting the economic aspects of projects within energy communities difficult.

Environmental and climate safety

Today, environmental and climate safety are considered priorities of state policy, closely connected with EU accession and post-war reconstruction. This is related to the EU's long-term goals within the framework of the European Green Deal (e.g., achieving climate neutrality by 2050, expanding the European emissions trading system, introducing a carbon import adjustment mechanism, etc.) and global trends towards decarbonizing economies. Ukraine is expected also to legislate relevant goals for achieving climate neutrality and reducing greenhouse gas emissions. Moreover, climate security for Ukraine also means adapting to the consequences of

⁷ Ukraina maibutnoho..., [The Ukraine of the future...], (2024), op.cit.

⁸ [Dlia likarni na Hostomelshchyni vstanovyly teplovyi nasos ta soniachnu elektrostantsiiu, \[Heat pump and solar power plant were installed for a hospital in Gostomel region\], \(2023\).](#)

⁹ Opytuvannya provodylos do zastosuvannya hrafkiv pohodynnykh vidkliuchen u 2024 rotsi, Ukraina maibutnoho..., [The survey was conducted before the introduction of hourly blackout schedules in 2024, The Ukraine of the future...], (2024), op.cit.

¹⁰ [Zaytseva-Chipak N., Fau E., Vostriakova V., Rubanenko O. Comprehensive Aspects of Establishing Energy Communities in Ukraine: Financial, Technical, Legislative, Informational, And Socio-Ecological Perspectives. Vinnytsia. 2023. 33 p.](#)

¹¹ [Hroshovo-kredytna statystyka NBU, \[NBU monetary and credit statistics\].](#)

climate change, particularly in the energy and housing sectors. In this context, energy communities can be a crucial tool for achieving national climate change goals.

Unfortunately, environmental safety is not a national policy priority (including during the pre-war period). Nevertheless, reducing emissions and air and land pollution from the heat and power sector is impossible without decarbonizing it and abandoning coal mining and use. For these reasons, energy communities aimed at using RES can be essential elements of implementing the relevant policy.

CHAPTER II. OVERVIEW OF EU LEGISLATION FOR ENERGY COMMUNITIES. THE EXPERIENCE OF THE EU COUNTRIES

Public energy initiatives engaged in various energy activities have many years of experience in the EU. They started their activities even before the EU formalized their special status. For this purpose, they used existing legal models, such as cooperatives and limited liability companies.

Energy communities are a new entity type due to their membership structure, governance requirements, and operational purpose. They are tools for expanding citizens' rights in the energy sector, and they can be implemented individually or collectively with their tasks and advantages. Their functioning contributes to the following:

- ensuring the flexibility of the energy system;
- increasing the security of the energy supply;
- involving citizens in the energy transition and directly providing potential benefits to citizens (such as increasing energy efficiency and lowering electricity bills);
- reducing carbon emissions;
- increasing the level of support for projects, in particular from renewable energy at the local level;
- mobilization of private capital;
- supporting the local economy and creating job opportunities.¹²

In the end, experts emphasize that energy communities are new entities that are inherently social concepts because of the primary purpose of their activity - to ensure the ecological, economic, and social interests, needs, and welfare of their participants or the local population.¹³

In 2019, the EU adopted a package of legislative initiatives titled "Clean Energy for All Europeans" to facilitate the transition from fossil fuels to more environmentally friendly energy, fulfil the EU's obligations under the Paris Agreement to reduce greenhouse gas emissions, decarbonize European economies, and decentralize the energy system. The following EU acts institutionalized the concept of energy communities:

Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU (hereinafter – IMED Directive),¹⁴ and the updated Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (hereinafter – RED-II Directive)¹⁵.

¹² [Energy Communities Repository. Energy Communities. General information // European Commission](#)

¹³ [Energy Communities in the Clean Energy Package: Best Practices and Recommendations for Implementation. Clément ALATON \(Tractable Impact\), Frédéric TOUNQUET \(Tractable Impact\) // European Commission. June 2020](#)

¹⁴ [Directive \(EU\) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU \(recast\)](#)

¹⁵ [Directive \(EU\) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources \(recast\) \(Text with EEA relevance\)](#)

The IMED Directive and the RED-II Directive define the concept and legal framework for the functioning of energy communities in the EU. These Directives distinguish two types of energy communities: Citizen Energy Communities (CECs) and Renewable Energy Communities (RECs). Both directives outline the characteristics that make it possible to single out among a wide range of entities in the energy sector those that will be considered the relevant energy community. These characteristics are presented in the articles defining the terms (concepts) and in separate articles detailing the legal status of energy communities.

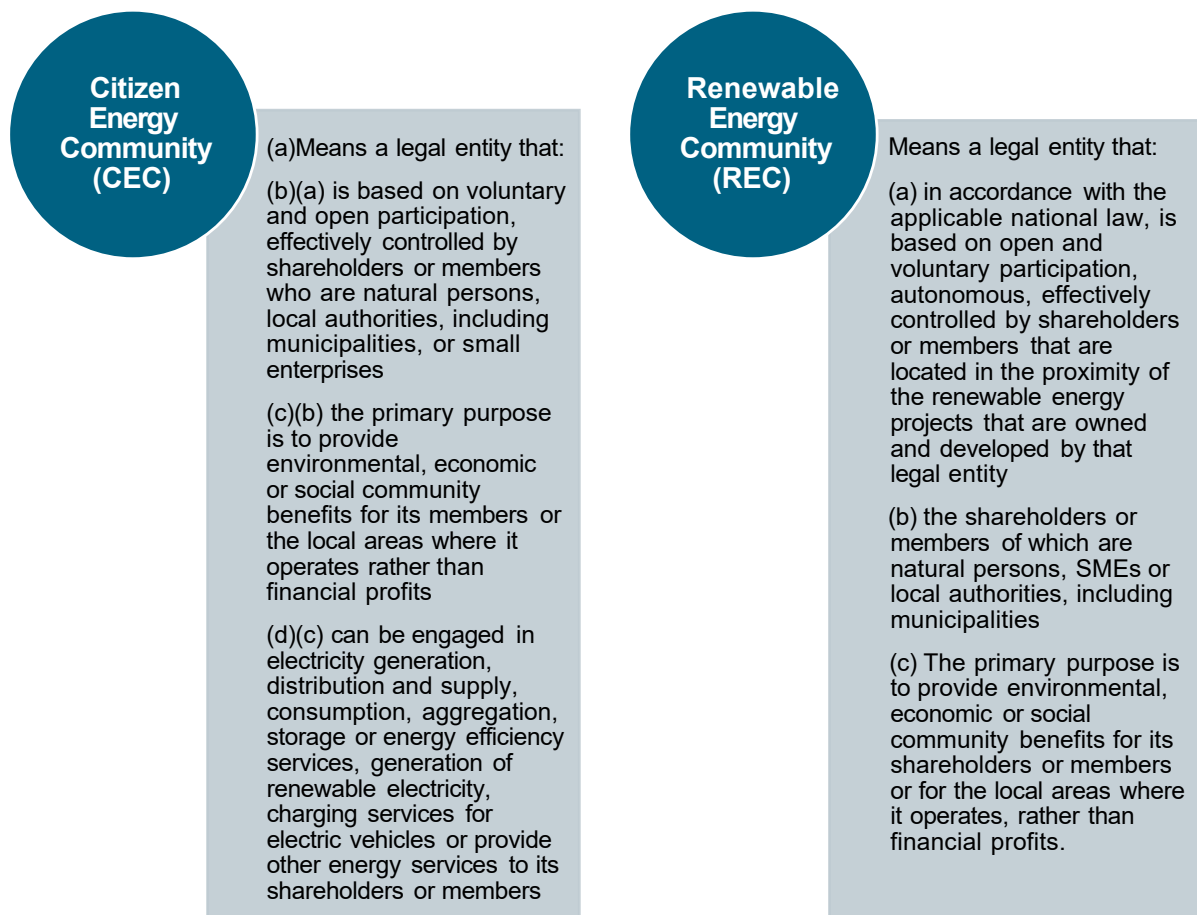


Figure. 1. Comparison of two energy communities' legal frameworks
Source: The figure is based on ¹⁶

These two energy communities' legal frameworks have common and distinctive features that influence their functioning.

Common features of public energy communities and RECs are:

- *legal status* – both energy communities are established as legal entities. The definition of the creation form of energy communities is assigned to the EU member states competence. The IMED and RED-II Directives do not restrict any form of establishing a community. At the same time, the IMED Directive lists potential forms of citizen

¹⁶ [Energy Communities Repository](#)

energy community creation: associations, cooperatives, partnerships, non-profit organizations, small enterprises, etc. The concept of energy communities is a unique way of organizing collective ownership around an energy-related activity, primarily to ensure environmental, energy, and social benefits. Therefore, in many cases, in practice, communities were created in the form of cooperatives (for example, in Germany);

- *the purpose of the establishment* is to provide environmental, economic, and social public benefits for its members, shareholders, and local residents, not to obtain financial profits. The economic advantages may entail generating a profit on investment or equitably sharing profits, but these advantages are secondary aims after attaining the main objectives that result in public goods.¹⁷ The purpose of creating energy communities is one of the key features that influence the choice of the form in which such a community will be made;
- *principles and the right to participate* – voluntariness and openness are fundamental principles of participation in energy communities and the prohibition of discrimination. That means an individual or a legal entity can join the community and voluntarily leave it freely. Participation should be open and based on objective, transparent, and non-discriminatory criteria. It depends on the organizational and legal form of the energy communities and usually involves membership or equity participation (based on shares, share equity, or stocks). At the same time, not every natural or legal person has the right to participate in energy communities. This right is granted only to those entities that are explicitly defined by the directives: natural persons, local authorities, including municipalities, small enterprises (for REC – also micro and medium-sized enterprises);
- *governance principles* – ensure efficient and actual control over the activities of energy communities. The effectiveness of control assumes that members or shareholders have a real opportunity to influence communities, the composition of their governing bodies, and decision-making.

The directives outline the specific features of CEC and REC, allowing them to be distinguished. The directives do not establish any interrelation between these types of communities. Nevertheless, it can be concluded that the concept of “citizen energy communities” is general, and the concept of “renewable energy communities” is special. ***The following can be distinguished among the distinctive and special features:***

¹⁷ [Policy guidelines on the concepts of energy communities // Energy Community Secretariat. PG 01/2024 / 12 March 2024](#)

	CEC	REC
<i>Participants</i>	<ul style="list-style-type: none"> – natural persons, – local authorities, in particular municipalities, – small enterprises. 	<ul style="list-style-type: none"> – natural persons, – local authorities, in particular municipalities, – small enterprises – as well as – micro-, medium-sized enterprises – private enterprises, upon the condition that participation in the community should not be their main commercial or professional activity [i.e. a restriction for those enterprises already operating in the energy sector], – the directive emphasizes the accessibility of participation, especially to low-income or vulnerable households.
<i>Participant's location</i>	<ul style="list-style-type: none"> – there are no restrictions on the participant's location, – the state may permit cross-border participation. 	<ul style="list-style-type: none"> – restrictions are set for participants who control the community's activities - they are shareholders or members close to the renewable energy projects owned by and developed by this legal entity.
<i>Types of activities</i>	<p style="text-align: center;">Activity:</p> <ul style="list-style-type: none"> – generation, distribution, supply, consumption, aggregation, energy storage; – provision of energy services: energy efficiency, electric vehicle charging, other energy services. 	<p style="text-align: center;">Activity:</p> <ul style="list-style-type: none"> – generation, consumption, storage, sale, supply, distribution, aggregation.
<i>Technologies</i>	<ul style="list-style-type: none"> – can use any technologies, including renewable energy. 	<ul style="list-style-type: none"> – can only use renewable energy technologies.

The legal framework for the activities of CEC and REC is defined at the level of EU directives. That means that each member state must transpose the provisions of the directives into national legislation, developing its models and ways.

States' experiences on this issue are different. Some countries introduce two models of energy communities into national legislation, while others keep the existing national models but reform them, considering the directives' requirements.¹⁸

Approaching the national legislation to the requirements of the IMED and RED-II directives, the states paid attention to:¹⁹

- *organizational and legal form* – some countries have established a specific form of energy community creation (for example, in the form of cooperatives (Greece) and economic associations (Sweden)); some used an open approach and did not define a specific form, but the very concept of community outlined the criteria that the organizational and legal forms of activity of energy communities should meet (Lithuania, France);
- *purpose of creation* – the states determined that the primary goal of the creation and operation of energy communities is to ensure the ecological, economic, and social benefits of members, shareholders, and the local population; they incorporated the issue of the distribution of financial profits from the economic activities of the communities in different ways. Some of the countries directly prohibited the creation of an energy community from achieving a purely economic goal, obtaining profit (Belgian region of Flanders); others established a legal requirement for secondary economic benefit (Portugal, Sweden); Some set quantitative requirements for the distribution of economic benefits and limited the distribution of income (for example, the Ministry of Economy of Belgium believes that cooperatives should limit their dividends to a maximum of 6% of the return on investment) or defined requirements for the obligation to direct the received income to certain types of social activities (for example, national legislation in Spain and Portugal requires cooperatives to create reserves for education, training and awareness activities).

¹⁸ For more details, see: [Policy database: Energy Communities Repository. Legal frameworks. European Commission, Transposition tracker – Definitions. REScoop.EU](#)

¹⁹ For more details, see: [Energy Communities under the Clean Energy Package. Transposition Guidance. REScoop.EU, ClientEarth](#)

Lithuania

The legislation of Lithuania enshrines two types of communities – renewable energy communities and citizen energy communities. Both types employ an open approach to deciding communities' organizational and legal structures but impose a necessary condition for these structures – their activity's purpose. Both communities must be non-profit legal entities.

"Renewable energy community is a non-profit legal entity that meets the criteria defined by this Law, owns and develops renewable energy facilities and has the right to produce, consume, store in energy storage units and/or sell the energy produced in them, and which has been granted the status of a renewable energy association of energy in the manner established by this Law" (Article 2 (2-1)).

Article 20-2 of the law defines the requirements for RECs; in particular, it must be a non-commercial legal entity that meets the following requirements:

- 1) its participants are natural persons, medium-sized, small and micro enterprises, other non-profit legal entities, municipalities, municipal institutions;
- 2) not less than 51 % of the votes at the meeting of participants belong to participants who live or carry out activities in the county where the construction or installation of energy production equipment owned by the community from renewable energy sources is planned;
- 3) the purpose established in the founding documents of a non-profit legal entity is to provide environmental, economic or social benefits to its participants or to provide these benefits in the places of its activity, and the primary purpose is not to make a profit.

[Law of the Republic of Lithuania "On Renewable Energy" dated May 12, 2011 \(consolidated version dated January 1, 2024\)](#)

"Citizen energy community is a legal entity that meets the criteria defined by this Law, and which is granted the legal status of a citizen energy community in the manner established by this Law" (Article 1(95)). Article 22-2 of the law defines the criteria for the creation of CECs in Lithuania and the legislation regulating the organizational and legal forms of legal entities, in particular laws on public institutions, associations, communities of owners of multi-storey residential buildings and buildings of other purposes, gardening communities. According to the laws, it can also be other legal entities, such as non-profit organizations. The citizen energy community's constituent agreement and/or charter must specify that its primary purpose is to provide environmental, economic or social public benefit to its shareholders, members or participants or to provide this benefit in the places where it operates. The main purpose of a public energy community cannot be profit.

[Law of the Republic of Lithuania "On Electricity" dated July 20, 2000 \(consolidated version dated January 1, 2024\)](#)

Usually, states specify the types of activities that energy communities can engage in. Some indicate requirements for certain activities, setting quantitative and qualitative restrictions (for example, in Poland, CECs can work within one distribution system operator, and production must be connected to networks with a nominal level voltage of no more than 110 kW).

Some states have provided for creating a particular regulatory body or authorized existing state bodies to register, monitor, and supervise the activities of energy communities. Some states have introduced mandatory registers of energy communities (Czech Republic, Croatia), sometimes linking the acquisition of energy community status with the fact of registration (Poland).

Poland

The Energy Regulatory Authority maintains a list of registered CECs – after being entered into this list, the CEC may undertake activities. The laws regarding energy and renewable energy sources define the provisions for identification, registration, and the provision of information to the Energy Regulatory Authority. The list is public and is maintained electronically on the website of the Energy Regulatory Authority.

Energy Cooperatives have to be entered to the list of energy cooperatives kept by the Director General of the National Centre for Agricultural Support.

[Poland - REC/CEC definitions // REScoop.eu. Policy. Transposition tracker. REC & CEC definitions](#)

The functioning of energy communities in the EU has a long and versatile experience. Some communities were created in the last century, but others are just starting their activities. In some countries, communities have already become significant actors in the energy sector, while the idea is still developing in others. As do governance and participation systems, forms of creation, fields of activity, and technologies used vary among energy communities.

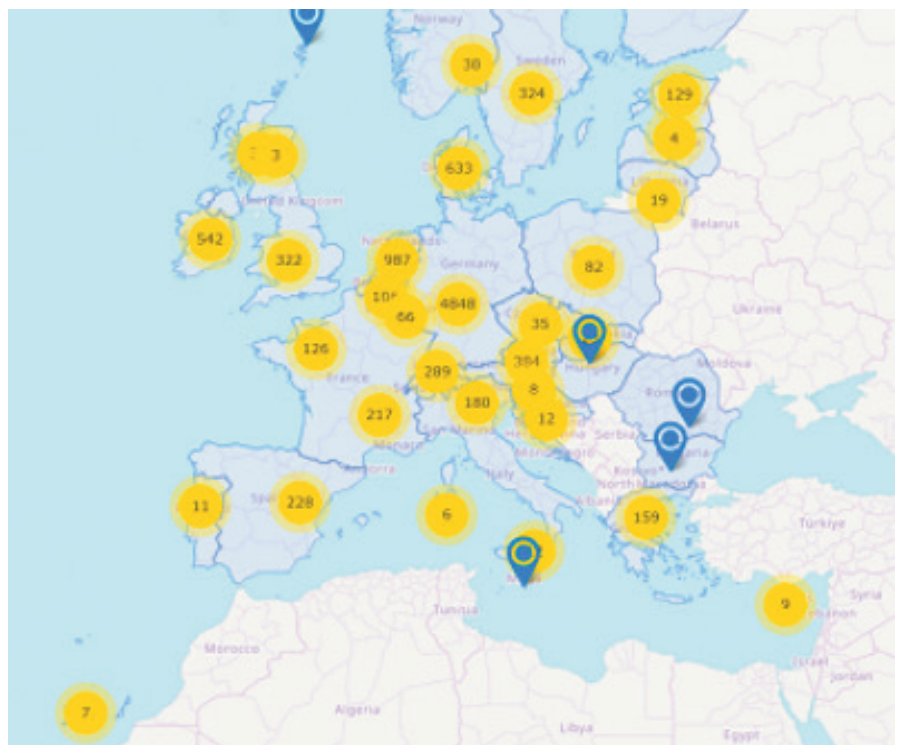


Figure 2. Map of energy communities in the EU
Source: The figure is based on ²⁰

²⁰ [Launch of the EU Energy Communities Map](#)

Energy communities are engaged in a variety of activities, often combining and embodying several types at the same time.²¹ For example:

Type of activity	Energy community
RES (complex of activities)	<p><u>Ecopower (Belgium, 1991)</u> is one of the largest cooperatives in Europe in terms of renewable energy. The main goals of its activity are investing in renewable energy, providing its members with 100% green energy, promoting the rational use of energy and renewable energy sources, and popularizing cooperatives as an effective business model.</p> <p><u>FairPla.net (Germany, 2006)</u> is an international cooperative in the field of climate, energy and development. He develops, finances, and manages projects in Germany and other countries worldwide. It started with installing three windmills and nine solar power plants in Germany and with some wind and solar energy projects in developing countries.</p> <p><u>OurPower (Austria, 2019)</u> is a European cooperative society (SCE) that operates a peer-to-peer market for renewable electricity produced by its members in Austria. OurPower offers online service search and the entire process of electricity supply.</p> <p><u>CER Energy City Hall of Magliano Alpi</u> is Italy's first renewable energy community (2020), bringing together energy producers and consumers to meet their energy needs by producing renewable sources.</p>
Wind power	<p><u>TÜ Energiaühistu</u> is the first energy cooperative in Estonia (2021), which aims to create renewable energy parks (solar and wind power plants) with local communities.</p>
Solar power	<p><u>Energy Community Gabrovo (RDNO)</u> (Bulgaria, 2022) is an innovative initiative of the Gabrovo municipality that aims to solve problems in the energy market. One of the community's directions is its energy production.</p> <p><u>IZGREI BG</u> is the first energy community in Bulgaria (2021) to successfully implement the first pilot project to install solar photovoltaic panels for the community's consumption, with the possibility of selling the surplus to the grid. In addition, the community implements measures to reconstruct buildings, overcoming energy poverty.</p>

²¹ For more details, see: [Communities. Energy Community Platform, Network. REScoop.eu network.](#)

Type of activity	Energy community
Centralized heating	<p><u>Energent (Belgium, 2013)</u> is a citizen cooperative of renewable energy, working on various solar, wind, thermal energy and renovation projects.</p> <p><u>SUNO Enginyeria de Serveis Energètics (Spain, 2015)</u> is a cooperative that specializes in renewable energy sources and energy efficiency. It is engaged in developing projects using biomass, solar energy, energy modeling, and the construction of heat networks.</p>
Sustainable mobility	<p><u>Som Mobilitat (Spain, 2016)</u> is a non-profit consumer community and user cooperative that provides mobility services, particularly sharing electric vehicles.</p> <p><u>Attica Energy Community (Greece, 2019)</u> is a public energy community that works on producing energy from renewable sources, is engaged in overcoming energy poverty, developing electric mobility, and implementing green technologies and solutions.</p>
Building renovation	<p><u>Energy Communities Tipperary Cooperative (Ireland, 2012)</u> is a non-governmental organization that modernizes and insulates buildings to make the energy transition profitable for local residents. It offers a single window (one-stop-shop) for housing renovation and attracts state grants for its implementation.</p>

Energy communities unite in various types of unions (associations, federations, alliances, networks, etc.) to represent their interests, particularly in matters of energy democracy. REScoop.eu is an example of such a union. The European Federation of Citizen Energy Cooperatives., founded in 2013, unites 2,250 European cooperatives, representing over 1.5 million citizens. Its goals are to represent the interests of citizens and energy cooperatives before European politicians, support existing energy cooperatives, promote international exchanges and cooperation between cooperatives, and popularize the cooperative model as an effective business model. (<https://www.rescoop.eu/>)

CHAPTER III. REGULATORY STATUS QUO FOR ENERGY COMMUNITIES (ENERGY COOPERATIVES) IN UKRAINE

In Ukraine, there is no special legislation regulating the activity of citizen energy communities (CECs) and renewable energy communities (RECs). Nonetheless, recent changes in national legislation in 2019 recognized energy cooperatives as entities in the renewable energy market. Nevertheless, these changes do not fully implement provisions of the EU directives.

The absence of clear legislation is one of the main obstacles to the functioning of energy communities in Ukraine. Ukraine tried to develop it. The draft law "On consumer energy cooperatives" was discussed at the beginning of 2017.²² Regardless, this process did not end with developing and adopting the corresponding law.

The first step towards legal regulation of energy communities activities was taken in the spring of 2019, when the concept of "energy cooperative"²³ was introduced into the Ukrainian legal field. Also, corresponding changes were made to the Law of Ukraine "On Alternative Energy Sources."

The concept of an energy cooperative is established in Art. 1 of the Law of Ukraine "On Alternative Energy Sources":²⁴

Energy cooperative

– a legal entity established pursuant to the Law of Ukraine "On Cooperation" or the Law of Ukraine "On Consumer Cooperation" to carry out economic activities for the production, procurement or transportation of fuel and energy resources, as well as to provide other services to meet the needs of its members or territorial community, as well as for gaining proceeds, under the law

²² Serhii Savchuk: Stvorennia enerhetychnykh kooperatyviv v Ukraini – tse novyi trend, iakyi rosvyvatyme Derzhenerhoefektyvnosti razom iz hromadamy dlia yikh enerhonezalezhnosti ta samostiinosti, [Serhii Savchuk: Establishment of energy cooperatives in Ukraine is a new trend that will be developed by the State Agency on Energy Efficiency and Energy Saving together with communities for their energy independence and self-sufficiency].

²³ Pro vnesennia zmin do deiakykh zakoniv Ukrainy shchodo zabezpechennia konkurentnykh umov vyrobnytstva elektrychnoi enerhii z alternatyvnykh dzherel enerhii. Zakon Ukrainy № 2712-VIII vid 25 kvitnia 2019 roku, [On Amendments to Certain Laws of Ukraine on Ensuring Competitive Conditions for the Production of Electricity from Alternative Energy Sources. Law of Ukraine No. 2712-VIII of April 25, 2019]

²⁴ Pro alternatyvni dzherela enerhii. Zakon Ukrainy № 555-IV vid 20 liutoho 2003 roku, [On alternative energy sources. Law of Ukraine No. 555-IV of February 20, 2003]

Therefore, the legislator outlined the following features of the energy cooperative as an independent entity in the legal field of Ukraine:

<i>Legal status</i>	- legal entity
<i>Organizational and legal form</i>	- is defined by the Law of Ukraine "On Cooperation" ²⁵ or the Law of Ukraine «On Consumer Cooperation» ²⁶
<i>Purpose of creation</i>	Economic activity for: <ul style="list-style-type: none"> - meeting the needs of its members or territorial community - gaining proceeds
<i>Type of activity</i>	- production, procurement or transportation of fuel and energy resources and energy storage <ul style="list-style-type: none"> - providing other services

It is evident that establishing the definition of "energy cooperative" at the legal level is a positive development. Nevertheless, it is vital that this legal definition complies with the provisions of the IMED and RED-II Directives and facilitates the establishment and functioning of this type of cooperatives in the country.

The legislative definition of energy cooperatives contains several inconsistent, contradictory, mutually exclusive provisions, and some of the features inherent in this category of entities in the EU sense are missing. It is essential to address and resolve critical issues, such as identifying the category of energy community to which the energy cooperative is affiliated, defining its purpose, and determining the organizational and legal structure that can impact the entities permitted to establish cooperatives.

The legislator broadly interpreted the definition of "energy cooperatives," which results in it containing features of two types of energy communities: CECs and RECs. The Law of Ukraine, "On Alternative Energy Sources," recognizes the concept of "energy cooperatives." However, it does not specify the connection between the cooperative's activities and the "technology" it uses, such as renewable energy sources mandated by the RED-II Directive. In addition, the legislator notes that an energy cooperative can engage in economic activities such as producing, procuring, or transporting fuel, energy resources, and energy storage. Nevertheless, fuel and energy resources are natural and converted types of fuel and energy, which possess all kinds of fuel and energy used in the national economy, including natural gas, coal, oil, petroleum products, liquefied gas, renewable energy sources, thermal energy, electric energy and any other forms of energy.²⁷

Clarity is needed in the provisions that define the activities for which an energy cooperative is established. Legislators note that these are the production, procurement, or transportation of fuel, energy resources, and energy storage. At the same time, both EU directives specify and determine the activities that CECs and RECs can engage in, including production, consumption, storage, sale, supply, distribution, and energy aggregation. National legislation also provides for the provision of "other services" by energy cooperatives, but this concept is too broad, as it does not indicate the energy nature of such services. The IMED Directive only addresses ener-

²⁵ Pro kooperatsiiu. Zakon Ukrainy № 1087-IV vid 10 lypnia 2003 roku, [On cooperation. Law of Ukraine No. 1087-IV of July 10, 2003]

²⁶ Pro spozhyvchu kooperatsiiu. Zakon Ukrainy № 2265-XII vid 10 kvitnia 1992 roku, [On consumer cooperation. Law of Ukraine No. 2265-XII of April 10, 1992]

²⁷ Punkty 19 ta 10 Zakonu Ukrainy «Pro enerhetychnu efektyvnist», № 1818-IX vid 21 zhovtnia 2021 roku, [Clauses 19 and 10 of the Law of Ukraine "On Energy Efficiency", No. 1818-IX of October 21, 2021]

gy services, providing an indicative and open list of energy efficiency services, electric vehicle charging, and other energy services. Establishing a broad interpretation of services that energy cooperatives in Ukraine can provide devalues the latter as special entities in the energy market.

The purpose of the energy cooperatives activity has also been expanded. In fact, the law establishes two equal goals: meeting the needs of its members or territorial community and gaining proceeds. Both EU directives emphasize the importance of the goal, which involves satisfying the environmental, economic, and social needs, benefits, and interests of members, shareholders, or local residents, as well as the secondary nature of energy communities' financial profits. The directives do not deny the energy communities receiving financial proceeds, but this goal must be derivative [not equivalent to] the primary goal. The consequence of non-observance of the primary purpose of energy communities' activity will be the latter's loss of their special status and the advantages granted to them.

The organizational and legal form defined by the law has introduced a limited understanding of energy communities in Ukraine. The legislator immediately determined the form of a legal entity – a cooperative. Thus, other possible forms were left out of consideration (for example, public organizations and other non-profit organizational and legal forms of legal entities). The legislator does not specify all other characteristics of the energy communities concept outlined in the directives (regarding voluntariness, founders, participants, their entry and exit, participation in governance, etc.) but refers to the two laws "On Cooperation" and "On Consumer Cooperation." Consequently, the laws mentioned above also do not answer these questions and aggravate the issue of choosing the type of cooperative under which the energy cooperative should be organized. The Law of Ukraine, "On Consumer Cooperation," does not use the term "cooperative" but considers its main subject to be a consumer community created only by natural persons and connected with their residence or work. These features do not comply with the provisions of EU directives.

The Law of Ukraine "On Cooperation" does not resolve legal inconsistencies and contains other provisions that cause legal uncertainty in the establishment and functioning of energy cooperatives. The law classifies three types of cooperatives: production, service, and consumer, depending on their tasks and the nature of their activities. Regardless, this classification is not appropriate for energy cooperatives, as they can simultaneously engage in different activities (production, service, or consumption), which are key features of this classification. Furthermore, the approaches to the entities empowered to create these types of cooperatives are different from the EU approaches to those empowered to create energy communities. In some cases, the law narrows the circle of authorized entities compared to the provisions of the directives. Thus, production cooperatives in Ukraine are created only by natural persons, not by any, but based on their mandatory labour participation in cooperative activities. On the other hand, the legislator expanded the range of authorized entities. For instance, service and consumer cooperatives can be established by both physical and legal entities, and the legislator does not set restrictions or requirements for legal entities that can establish such cooperatives. Instead, the EU directives established a narrower range of legal entities that can create energy communities, which is also related to the primary purpose of their creation and activity.

An equally important aspect is stimulating the creation, activity, and development of energy cooperatives in Ukraine. The Law of Ukraine, "On Alternative Energy Sources," introduces a "green" tariff to incentivize electricity production from alternative energy sources. This tariff has also been established for energy cooperatives. The mechanism of its provision is provided by law,

and specification is carried out in by-law regulatory acts²⁸. The legislator has set specific requirements for obtaining a "green" tariff by an energy cooperative:

- *purpose of generating plants* – production of electrical energy from solar energy and/or wind energy, from biomass, biogas, hydropower, and geothermal energy;
- *capacity of generating plants* – the installed capacity should not exceed 150 kW;
- *additional conditions for certain types of generating plants* – solar generating plants must be located on the rooftops and/or facades of buildings and other capital structures;
- *introduction of a corrective coefficient* that affects the amount of the "green" tariff. The coefficient applies until 31.12.2029. Gradually, the corrective coefficient decreases, except for the production of electricity from biogas and biomass, for which the factor remains unchanged;
- *establishing requirements for the minimum number of energy cooperative members and share contributions* – the members of such an energy cooperative must be at least ten natural persons whose share contributions comprise at least 75% of the share fund or a communal enterprise whose share contribution is at least 25%.

The law assures energy cooperatives that the "green" tariff will be paid until January 1, 2030. Additionally, the law ensures the transfer of the fixed minimum tariff amount in euros, based on the official exchange rate of the National Bank of Ukraine as of January 1, 2009. Furthermore, no surcharge is added to the "green" tariff for electric energy produced by power plants (generating plants) of energy cooperatives for compliance with the level of use of Ukrainian-made equipment.

Substantial changes were made to several laws in June 2023,²⁹ which also affected the activities of energy cooperatives. Among other:

- recognition by energy cooperatives of the active consumer status if: (a) the installed capacity should not exceed 150 kW, (b) the generating plants are intended for the production of electric energy from solar energy and/or wind energy, from biomass, biogas, hydropower, and geothermal energy and (c) produced energy is sold by the "green" tariff;
- the possibility of energy cooperatives using the self-production mechanism (according to the criteria of consumers and their generating plants) if an active consumer purchases the entire amount of electricity produced by their generating plants;
- Implementation of the sale by energy cooperatives that have established a "green" tariff of electricity produced at a "green" tariff to a guaranteed buyer. The obligation of the guaranteed buyer to purchase electric energy produced by the energy cooperatives generating plants, the installed capacity of which does not exceed 150 kW, at a "green" tariff in an amount exceeding the monthly consumption of electric energy.

As can be seen, Ukraine is making progress in establishing the legal basis for energy communities' activities. Despite this, the legal field of energy communities' activities remains uncertain.

²⁸ [Poriadok vstanovlennia, perehliadu ta prypynennia dii «zelenoho» taryfu na elektrychnu enerhiiu dlia subiektiv hospodarskoi diialnosti, spozhyvachiv elektrychnoi enerhii, u tomu chysli enerhetychnykh kooperatyviv, ta pryvatnykh domohospodarstv, heneruiuchi ustanovky yakykh vyrobliaiut elektrychnu enerhiiu z alternatyvnykh dzherel enerhii. Zatverdzheno postanovoiu NKREKP vid 30 serpnia 2019 r. № 1817, \[Procedure for establishing, reviewing and terminating the "green" tariff for electricity for business entities, electricity consumers, including energy cooperatives, and private households whose generating units produce electricity from alternative energy sources. Approved by the NEURC Resolution No. 1817 dated August 30, 2019\]](#)

²⁹ [Pro vnesennia zmin do deiakykh zakoniv Ukrainy shchodo vidnovlennia ta «zelenoi» transformatsii enerhetychnoi systemy Ukrainy. Zakon Ukrainy № 3220-IX vid 30 chervnia 2023 roku, \[On Amendments to Certain Laws of Ukraine on Restoration and Green Transformation of the Energy System of Ukraine. Law of Ukraine No. 3220-IX of June 30, 2023\]](#)

Potential ways to improve the situation include developing special national legislation that establishes clear rules for the activity of energy communities – citizen and renewable energy communities.

Leaving the status quo makes it difficult to function both at the stage of creation and in their further activities. Legal certainty must be ensured at the national level. For Ukraine, such changes should be made at the law/s level (as separate laws or additions to existing laws, particularly individual sections and chapters). Regardless of the chosen approach, the concept of citizen and renewable energy communities, their legal and organizational form, legal status (encompassing a set of rights and obligations), and the procedure for acquiring such status by communities should be established at the legislative level.

It is crucial to ensure the establishment and operation of energy communities by legally determining their status and the authorities' willingness to encourage and back their endeavours. That requires establishing, at the level of laws, a set of benefits and preferences that will contribute to the achievement of energy communities' primary goal – ensuring environmental, economic, or social benefits for their members and local communities by providing a self-sufficient model of economic activity of citizens in the energy sector. The new legislation must be consistent with the EU acquis and meet Ukraine's renewable energy development needs.

CHAPTER IV. PROBLEMS AND OPPORTUNITIES FOR THE DEVELOPMENT OF ENERGY COMMUNITIES IN UKRAINE

In this chapter, we tried to reveal the main problems and opportunities for developing energy communities in Ukraine based on the analysis of the results of an expert focus group study conducted in 2023 by the Ukrainian Center for Public Opinion Research "Socioinform" and other public sources. The critical elements of challenges and opportunities include the regulatory framework, capacity, and financial resources.

It should be noted that focus group participants use the concept of "energy communities" without distinguishing between the types of such communities according to European legislation and practice. Most opinions and comments on content are related to energy communities and RES use.

Barriers and problems

The interviewed experts single out several **regulatory** problems related to the regulation of the energy sector, local self-government, and Oblenergo's (Oblast level (regional) electricity distribution company) work. It is about:

- The possibility of budgetary co-financing of solar plants in wartime;
- Balance-sheet ownership of RES sources of communal enterprises;
- Admissibility of installing solar plants in the first sanitary zone and others;
- Complicated procedures for distributing funds for the maintenance of RES installations and discarding outdated equipment;
- Absence of an alternative to selling electricity into the general network;
- A significant amount of required permit documentation;
- Oblenergo opposition;
- Land legislation, in particular, prohibits the installation of SPPs on land.

Oblenergo's opposition concerns its monopoly position and insufficient regulation and control of its activities, which create problems at the stages of establishment and functioning of energy communities. Thus, Oblenergo's resistance creates difficulties already at the stage of forming permits and further connection to the grid.

«The transparency and openness of these institutions are simply zero. It seems that it is not beneficial for them to create such cooperatives, that it is not beneficial for them to have energy autonomy, and that it is not beneficial for them for people to have information, access, and the ability to do something».

Experts complain that Oblenergo creates artificial and sometimes corrupt obstacles to the connection of a built object installation of equipment that monitors flows:

«Some of our Oblenergos are owned by russians. It is difficult to find interaction with them not only in terms of energy sharing but also to install equipment that would monitor flows and limit generation in their substation. They immediately set us conditions that cannot be met».

The same problem is mentioned in the context of the only operating energy cooperative in the country, "Solar City":

«Slavutych, Solar City, right? Where people jointly invested money. The problem arose precisely with Oblenergo when they could not be connected to the network for several years».

Some of the regulatory problems expressed by experts were resolved by the adoption in 2023 of Law of Ukraine 3220-IX, "On Amendments to Certain Laws of Ukraine Regarding the Restoration and "Green" Transformation of the Energy System of Ukraine." The law mainly concerns part of the definition of energy cooperatives, their possibilities as active consumers, distributed generation, and small distribution systems³⁰. In general, the interviewed experts expected the adoption of this law to be quite progressive.

A significant part of the experts' opinions concerns the tariff and price policy in the electricity market, including the green tariff. We consider these issues in the context of finance.

Perhaps **capacity** is one of the main factors slowing down the development of energy communities in Ukraine. Interestingly, experts consider community capacity when evaluating potential participants in energy communities and their capacity to create them. Experts often refer to "communities" as territorial communities and homeowners associations (HOA).

Experts find assessing community interest in creating energy cooperatives or energy communities difficult. After all, **communities in Ukraine are non-uniform** in their potential (material and human). This inequality is exacerbated by war – communities closer to the front line are less capable than those behind the line. To a large extent, communities' activity in this direction **depends on the personal characteristics of the leaders and the assets of each community**. That is why specific communities proactively create energy communities/cooperatives: they initiate projects independently and look for funds and contractors. Others are not interested in this issue at all. In today's circumstances, there are few active communities, but interest in projects is gradually increasing.

According to experts, only some communities can organize energy communities today. Communities in large cities are in a better position. They are generally provided with human resources (project managers, technical personnel) and broader opportunities to attract finances (particularly grant and credit funds). Village communities are mostly significantly limited in their capacity.

First, the communities have insufficient human resources: project managers and technical specialists. The communities lack the competencies to form commercial and technical projects. The problem is particularly significant in village communities, where providing competitive wages to experts who can develop high-quality projects is hard. If such specialists are available, they tend to relocate to bigger cities.

«The projects sent to us are unfinished. Communities have an idea (for example, converting a hospital to clean energy), but everything stops when it is necessary to work more thoroughly to provide numbers and calculations».

The lack of awareness about energy communities is highlighted separately. Thus, communities are usually unaware of the available opportunities to receive grant funding from donors to

³⁰ [Novi pravyla na rynku "zelenoi" enerhetyky v Ukraini, \[New rules on the green energy market in Ukraine\], \(2023\)](#)

implement projects related to creating energy communities. They do not have project managers who would monitor the opportunities and know how to apply for a grant correctly. Community representatives (officials, heads of HOA) are often uninformed about state support for creating energy communities.

The consequences of low awareness are misunderstandings in the algorithm for creating energy communities. Among the reasons are the inability to search for information, useful contacts (for example, between the heads of communal institutions and the public sector), and lack of information measures to popularize the energy transition among the broad masses of the population. In turn, this sometimes leads to an adverse reaction of community residents to the authorities' intentions.

The lack of ability to choose an appropriate model (project) and calculate its economic feasibility due to an absence of financial literacy is highlighted separately.

The impact of Russian aggression is peculiarly manifested in the context of the region's capacity. Since the start of the Russian Federation's full-scale invasion, experts have observed another notable trend: a large-scale movement of educated and progressive individuals from Kyiv to the regions. This movement is encouraging the development of energy communities in these regions.

Finally, an important element of community capacity is leadership. The absence of personal leadership exacerbates the lack of knowledge and regulatory imperfection: the process becomes too complex and burdensome. "There must be that person, that leader who will follow this matter through," experts say. There is a shortage of such people locally, and attempts to create energy cooperatives fail when an initiative person, for some reason, withdraws from work.

Moreover, according to business representatives, public organizations, and scientists, the communities should demonstrate institutional leadership. After all, the state cannot simultaneously work with hundreds of communities nationwide. Instead, the local government/community asset better understands local needs and opportunities.

Nevertheless, experts also point out that the communities expect the state to lead by creating a special program that would provide a comprehensive approach to developing energy communities in Ukraine.

Developers can become leaders in creating energy communities (as a tool for creating new energy-independent complexes or buildings), but the conditions for this have not been established yet.

Financial barriers can be considered complex and independent problems, but their impact is closely related to others (regulatory barriers, capacity, cultural and other obstacles).

Credit funds are too expensive for communities. Own funds and their use are significantly limited, especially in small communities and during martial law. Communities often lack access to grant funds or do not have the resources to attract them. In general, only large communities have the experience and capacity to attract financial resources, including state support.

Communities are afraid to invest in RES-related projects because they have a long payback period. Low electricity prices for the population and HOAs do not contribute to the economic feasibility of any projects in the field of RES. Finally, large communities with more significant financial resources face high land costs in such communities.

It should be noted that experts practically do not talk about attracting funds from the population or creating energy communities as business projects.

Other barriers include corruption, oligarchic influence, and socio-cultural factors. Some experts have repeatedly stated that oligarchs have a significant impact, as they are not interest-

ed in developing a decentralized generation and are unwilling to lose consumers. Corruption factors are not specific to energy communities (cooperatives); they are associated with many corruption mechanisms typical for electricity (technical conditions, connection to networks, accounting, etc.). This issue is especially acute at the level of individual units of Oblenergo.

Separately, it is worth analyzing the **socio-cultural factors** that experts often note. These factors include:

- **The inertia** of the population and community leaders' thinking, lack of interest in innovations, reluctance to understand a new topic, and inability to put effort into changes.
- **Individualism** of Ukrainians (inability to negotiate and balance interests).
- Lack of social capital (**trust**).
- Lack of **leadership** in communities, proactive people can mobilize the population around changes.
- A low level of **political capitalization** in the energy communities' creation and implementation of RES projects for authorities' representatives.
- Absence of **living according to the rules** habit.

«People did not trust each other, and now it is very difficult because you have to contribute materially, people do not trust even if you are from the same community. The second is a matter of leadership because there must be a person, that leader, who will follow this matter through to the end».

Social capital, as a resource for the creation of energy communities, is currently absent in Ukraine. The population is not interested in creating cooperatives. However, they do not object to the local authorities' implementation of such projects. First, because the population does not know much about such a phenomenon as energy communities. In addition, Ukrainians show extreme individualism, which makes it challenging to create communities where negotiation and balance are necessary.

An example of such behaviour is the HOAs experience, where residents are not inclined to participate actively, balancing interests and dialogue. These socio-cultural features can significantly impact the creation of energy communities to solve security challenges (uninterrupted supply). Although residents personally understand the challenges, they tend to provide themselves individually (generator, charging station, etc.), even when many effective solutions can only be implemented as a group or community (elevator operation, keeping warm/cooling, food storage, etc.).

According to experts, the population with funds is more inclined to participate in such projects, considering them an investment in their own energy independence and reliable energy supply. At the same time, this significantly limits the application of the concept of energy communities since potential beneficiaries are likely to be other individuals (not community members, for example, residents of the same house). Since participation in the community is voluntary, creating such a community (cooperative) immediately faces the problem of a wide range of users of the services of such a community. It can be solved technically (which makes the project significantly more expensive) or economically – by providing paid services to all users, which will require a special financial model for such a cooperative.

Prerequisites and possibilities

As mentioned above, the main components of the problems are also the opportunities that can and should be sought in the regulatory environment, capacity, finance, and socio-cultural factors.

Although the current state of **legal regulation** of energy communities (cooperatives) in Ukraine does not fully meet the requirements of European legislation, this can be considered a stimulating factor. This conclusion is supported by the following considerations:

- The superficial regulation of this phenomenon (social relations) means that the energy communities are not regulated. In many spheres, there is a long-standing practice of excessive regulation when the state, for specific reasons, decides to establish requirements for implementing a particular type of activity and “regulate” such activity with laws and numerous by-laws. That, in turn, can significantly complicate and slow down the development of any initiatives. Moreover, some experts believe that the state’s intervention for now (in particular, introducing the concept of “energy cooperative”) was unnecessary. Therefore, insufficient regulation of energy communities can be considered a factor facilitating their creation and functioning in Ukraine.
- Further directions for improving the legal regulation of energy communities are clear. In the coming years, all such changes will aim to implement the provisions of the relevant directives. This is related to Ukraine’s process of joining the EU, which will be accelerated by the expected opening of negotiations in June 2024 and official screening in the fall of 2024. This allows initiators of energy communities and their potential creditors, investors, and insurers to predict future changes reasonably. Furthermore, it will enable the energy communities to actively oppose any negative, “anti-European” changes in regulating their activities in the future.

A number of communities demonstrate sufficient **capacity and interest** in implementing energy projects, especially for social infrastructure purposes. They already have experience in implementing, raising funds, and, most importantly, evaluating the results of such projects. Under wartime conditions, some communities emerged, drastically increasing their capabilities and implementing various projects. Such communities can become reliable partners in piloting and appraising new energy community models in Ukraine through their work within the Sustainable Energy and Climate Action Plan (SECAP) framework.

The capability of the population also changed during the war. Many Ukrainians participate in or are aware of the advantages of association for solving complex or expensive tasks and financing them. The practice of banding together to solve problems arose immediately in the first days of the invasion. Collecting funds “on the jar” is common for hundreds of thousands of Ukrainians every day. Energetic communities can exist by choosing a successful social target model, such as population gathering. For example, an energy community can solve the energy supply problem to a social facility in a liberated settlement to help people or animals (hospital, ambulatory center, animal shelter, etc.).

In addition, in Ukraine, there are successful “spilnokosht” examples³¹, effective joint management, and the creation of communities in other areas: urban spaces³² (public restaurants), HOAs, housing, and construction cooperatives (over 800 of the latter in Kyiv alone³³). All this

³¹ [Z myru po nyttsi: Pokaznyky i tendentsii ukrainskoho kraudfandyngu – Khrystyna Rybachok, \[From the world by a thread: Indicators and trends of Ukrainian crowdfunding – Khrystyna Rybachok\], \(2017\)](#)

³² [Urbanspace](#)

³³ [Housing and building cooperative as a form of house management](#)

experience is valuable, in particular, because it builds a culture of joint creation, financing, and management.

Today, the country has **financial resources** that can be used to create energy communities. Large communities are not the only ones with significant financial resources. Communities affected by hostilities can also become potential sources of such funding through factors like enterprise relocation or military personnel paying personal income tax. The population possesses substantial funds, with over a trillion hryvnias in bank accounts. Given the limited investment options in other sectors, such as the increase in housing prices in the behind-the-line regions and energy supply challenges, there is an opportunity for the population to be involved in financing energy communities.

Today, Ukraine can attract a significant grant resource. Although establishing and operating energy communities cannot rely solely on grant funding, some ongoing projects funded by international partners could be structured as energy communities or cooperatives. At the very least, it will provide an opportunity to test various forms of such communities' social, economic, and legal models.

Experts currently consider the socio-cultural features of the population as an obstacle. Nonetheless, understanding such features, revealed by others' experience, enables proper consideration of that factor to avoid problems. Identifying the above-mentioned socio-cultural obstacles is a reason to look for other features of the "mentality" of citizens, which would contribute to developing appropriate models of energy communities.

For example, the correct positioning of energy communities (regardless of their legal form) is necessary in this context. In particular, depending on what will be chosen as the main interests for the satisfaction of which the community is created (security, income, etc.). Also, the terms regarding which a particular idea has already been formed among the population (for example, "cooperative") should be considered.

One of the essential cultural factors identified during the research is "the absence of living according to the rules habit." It is an important feature that should be considered when developing an energy community (cooperative) management model, where the actual involvement of participants (participation in meetings, voting, etc.) can become a serious obstacle to its functioning. This also means that following rules and procedures must have been a vital element of the management culture from the beginning of the community.

CHAPTER V. RECOMMENDATIONS FOR THE DEVELOPMENT OF ENERGY COMMUNITIES IN UKRAINE

These recommendations are developed considering the results and conclusions of this research. Considering this, the recommendations address those interested parties on whom the future development of energy communities in Ukraine depends the most: leaders, communities, public organizations, international donors, and the central government (Parliament and Government). These stakeholders are placed in the order that, in our opinion, best reflects their role and potential for implementing the concept of energy communities in Ukraine.

Currently, Ukraine still lacks an effective model of the energy community. At this point, it is the primary focus for leaders, communities, public organizations, international partners, and all those interested in advancing the energy communities in Ukraine. Obviously, there may be setbacks along the way. Further improvement of the legislative framework should be based exclusively on the (successful) experience of creating energy communities and their respective models.

The energy community model is a full-fledged business project with a dual purpose (financial and social), which should include:

- A clear definition of the creation goals (for example, provision of an alternative energy supply) and its appropriate positioning for potential participants (contributors).
- Detailed technical, economic, and financial planning, including:
 - Localization (why precisely this is a technical solution and why in this place);
 - Feasibility study;
 - Required resources;
 - Payback and profitability.
- Clear, transparent rules for the community's functioning.
- Maximum compliance with the principles of the European approach.

Any model should be attractive to potential participants, quick to implement, financially viable, environmentally feasible, and available regarding resources (technology, finance, people, etc.).

An urgent and promising direction for developing energy communities is providing uninterrupted and independent electricity and heat supply at the local (micro) level in conditions of armed aggression. The interviewed experts believe that the energy communities could implement dozens of available technical solutions in this direction (in particular, the development of microgrids, the use of urban infrastructure, the sharing of cooling systems, etc.).

To the leaders

- ✓ Be pragmatic (choosing a technical solution, financial model, payback, economic benefit, etc.) at the stage of formulating the idea of an energy community.
- ✓ Learn from others: to study previous experience with such communities and projects in Ukraine.

- ✓ Collaborate with others, especially the local community and businesses.
- ✓ Engage specialists (financiers, engineers, communicators, managers).
- ✓ Seek support from the community, the state, donors, and people.
- ✓ Demonstrate responsible leadership.
- ✓ Establish rules from the beginning to create a proper framework for the functioning of the energy community.

To communities (local authorities)

- ✓ Take leadership, especially in martial law conditions and the population's vulnerability during the war.
- ✓ Do not be afraid to be pioneers in creating communities, implementing technical solutions, and using available infrastructure opportunities (for example, contact networks for electric transport, buildings and roofs for communal facilities, etc.).
- ✓ Share experience with other communities.
- ✓ Form partnerships.
- ✓ Involve resources, including material and technical support.

To the public organizations

- ✓ Support communities in finding ideas and forming and promoting energy communities.
- ✓ Share one's experience implementing energy projects in communities, mainly technical and economic considerations and results.
- ✓ Develop and implement pilot initiatives to form a promising and effective model for energy communities.
- ✓ To be leaders in the search for effective models of energy communities, forming partnerships, and building social capital.

To international partners for development

- ✓ Support informational (educational) activities regarding energy communities as a new phenomenon for Ukraine via exchange of experience, training, information campaigns, etc.
- ✓ Form a program to support Ukraine's energy communities' development. The main goal should be to find effective models for such communities by supporting and implementing pilot models (projects) with various activities.
- ✓ Consider the potential of creating energy communities as one possible form of implementing future technical assistance projects in providing social infrastructure facilities with independent renewable energy sources.

To the Verkhovna Rada and Government

- ✓ Consider all available experience in creating energy cooperatives, including the peculiarities of their establishment and functioning, when discussing any initiatives regulating their activities.
- ✓ Implement the EU acquis gradually and transparently in this sphere, considering the peculiarities of the functioning of energy cooperatives and other forms of energy communities in Ukraine.

- ✓ Pay attention to the current legislative regulation of energy cooperatives, which contains some inconsistent, contradictory, mutually exclusive provisions and, in many respects, contradicts the requirements of the relevant EU directives.
- ✓ Actively involve all entities who are or could be members of energy communities (cooperatives), particularly representatives of communities, public organizations, and energy cooperatives.
- ✓ Eliminate existing legislative obstacles immediately, particularly in financing and property management of territorial communities, simplifying permit procedures and land issues.
- ✓ Take urgent measures to control Oblenergo.
- ✓ Ensure that the tariff (price) policy for energy resources contributes to the economic feasibility of energy communities.
- ✓ Contribute to the development of distributed generation, microgrids, and implementation.
- ✓ Do not create unnecessary regulatory barriers to establishing and functioning energy communities with the participation of various entities.
- ✓ Consider the creation and functioning of energy communities as part of solutions in the context of post-war green reconstruction and restoration of Ukraine.