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STUDY

Developing energy communities in Ukraine

An opportunity for a resilient energy system, a just transition and a cohesive society

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Executive summary

The war-related destruction of Ukraine offers a unique window of opportunity to pursue a new and more sustainable development path. In this regard, energy communities can and should play a significant role in the reconstruction and transformation of the energy and housing sectors in line with the 'build-back-better' approach.

We want to raise awareness about the benefits of energy communities and empower relevant stakeholders in Ukraine and globally in order to support their development. The study aims at mapping the status quo as well as analysing and improving the development prospects of energy communities in Ukraine by answering the following overarching questions:

- What are energy communities and what are their potential contributions to the energy system and the energy transition in Ukraine?
- Which activities and business models are particularly promising in the current context?
- Who are the key stakeholders for creating and enabling energy communities in Ukraine? What roles are they playing?
- What are the relevant regulations for energy communities in Ukraine and how do they fare in comparison to current and future EU requirements? What are the relevant funding options?

To answer these questions, we conducted a field analysis, comprised of a public opinion survey with over 500 respondents and interviews with relevant stakeholders and experts from Ukraine, as well as additional desktop research on regulatory and socio-economic aspects, drawing on lessons learned and best practices from other countries.

Status quo: an emerging phenomenon with great potential

Energy communities are already a reality in Ukraine. Varied initiatives and players can be found under this umbrella term. And since 2019, policymakers have introduced a definition for 'energy cooperative' in Ukrainian legislation and significantly improved financing conditions for energy from renewable energy sources (RES) and self-consumption, which are highly relevant to the development of energy communities.

However, creating and operating energy communities under current regulatory conditions remains an unnecessarily complex and uncertain endeavour. Certain activities, like selling or distributing energy locally, are legally or economically not feasible for energy communities. These players also face disproportionate obstacles to access the grid or external financing. Implementing the EU legislation on energy communities will be a key success factor for their further development. Fortunately, policymakers are currently taking first steps in this direction.

Moreover, awareness and knowledge about energy communities is low among the population. Around forty percent of survey respondents were hearing of the concept for the first time and only seven percent admitted to understanding the concept well.

Nonetheless, our survey results show that there is a great potential to untap:

- Over eighty percent of respondents would embrace the creation of an energy community in their region
- Over sixty percent of respondents would be interested in learning more about energy communities or would like to be involved in an energy community by volunteering, participating in decision-making and/or providing a financial contribution

Activities and potential benefits of energy communities in Ukraine

Energy communities are associations of players not traditionally involved in the energy sector except as consumers: citizens, local authorities and businesses other than energy utilities. Broadening the participation in the energy sector to accommodate these players can unlock new sources of capital and increases acceptance of the energy transition. Besides, energy communities can provide many socio-economic and environmental benefits to their members or region where they are located, as well as indirectly to the energy system.

Two-thirds of our survey respondents would like to direct the energy produced from RES towards common public infrastructures (schools, daycare centres, hospitals) and prioritise this over other energy uses. Therefore, supporting the development of energy communities, which are characterised by collective investment and democratic decision-making, can ensure that local and common needs are prioritised when developing energy projects.

In the current context of reconstruction, the most promising activities and business models for energy communities relate to the generation, collective-self consumption/energy sharing and (local) supply of RES as well as activities improving energy-efficiency through behavioural change and building reconstruction and renovation. In turn, this contributes to restoring electric and heating generation and distribution capacities as well as promoting the emergence of alternative supplies and thus players' diversity and market competition in the energy sector. Moreover, and maybe even more importantly than in other countries, energy communities can also play a unique role in strengthening the social fabric. By implementing actions addressing energy poverty or targeting the participation of certain categories of the population (veterans, refugees, internally displaced people), they can ensure that many Ukrainians are not rebuilding or returning to just a house, but to a home and a cohesive and forward-looking community.

To this end, we recommend that the development of energy communities should be addressed under different policy areas and reconstruction priorities (energy, housing but also decentralisation and regional policy, rebuilding human capital, etc.).

Improving the policy and financing framework

The development of energy communities is contingent on adopting regulatory adaptions and enabling provisions due to their inherent characteristics putting them at a disadvantage compared to large commercial players. This is likely to be an iterative process, as it was in other countries. In this regard, a first step is to introduce a legal and robust definition of energy communities addressing incoherencies with the existing definition on energy cooperatives and elaborating on criteria provided by the EU. Based on this, policymakers should

- establish a pilot programme, which would enable them to provide targeted financial support and technical assistance as well as test possible regulatory and administrative adaptations

- establish a monitoring, reporting and compliance framework in order to ensure that support goes to the intended players and their development can be monitored
- develop a roadmap to provide some additional guiding perspectives, build trust and transparency regarding the adoption of further enabling measures and mainstream energy communities beyond an energy policymaking circle

Beyond these three key measures, policymakers should also support enabling organisations (local authorities, NGOs, relevant state agencies) through capacity-building as well as raise awareness and improve access to information, including on financing programmes available to energy communities.

Supporting the development of energy communities is not merely a requirement to comply with the EU legislation. It is also a necessity to ensure that the energy transition and the reconstruction aligns with the needs and contribution potential of citizens, businesses and public authorities and that the benefits of these transformation processes can be fairly distributed among them. The recovery and reconstruction of Ukraine opens a window of opportunity for the development of energy communities that should not be missed considering the many benefits they can provide.

'Give a man a fish, and you feed him for a day. Teach a man to fish, and you feed him for a lifetime'

Ancient proverb of unknown origin

'Now that the enemy has set itself the goal of destroying us, of destroying our energy sector, we set ourselves the goal of becoming a leader in transforming our energy sector to counter any threats, any challenges, whether military, political, economic or even those related to climate change. *We have to become a leader in building a modern green energy sector – and we will do so because we are left with no other choice. This will allow us to create a decentralised energy system that cannot be destroyed by anything, not even missile strikes.'*

Volodimir Zelenskyy, President of Ukraine,
address to the Ukrainian Parliament, 28/12/2022

1 Introduction

'As we now plan to slowly go back to work and to invest billions of euros to restart our economy, we should avoid falling back in old, polluting habits. Instead, we should bounce back better from this pandemic [...] The European Green Deal is an agenda for transforming our economies to make it more competitive and improve our quality of life. We will now also make it our motor for the recovery. By using the European Green Deal as our compass, we can turn the crisis of this pandemic into an opportunity to rebuild our economies differently and make them more resilient.'

Ursula von der Leyen, President of the European Commission, video statement, 20/4/2020

'Therefore, everything that has now been rebuilt, repaired and protected in Ukraine will have an effect on several levels: it will serve Ukraine and Europe, it will serve as a basis for the energy supply for the next decades, and it will also prove that Russia's arsenal will not be able to weaponise blackouts in future. Ukraine has all the natural resources for a modern energy system. But without your loans and investments, we will not be able to achieve this. […] and we also need your expertise and hands-on experience.'

Volodimir Zelenskyy, President of Ukraine, speech at the Ukraine Recovery Conference 2024, 11/6/2024

Policymakers have used crises and wars as an impetus for breaking path dependencies, introducing socio-economic reforms and investing in infrastructure projects many times before, the New Deal, and the Marshall Plan being prime examples of this. By logically combining short-term actions with long-term measures and visions, policymakers can provide ideas for positive structural change. As exemplified by the first quote cited above, the COVID-19 pandemic and the impact it had were used by European policymakers as an opportunity to further advance their European Green Deal policy agenda. This 'bounce back better' approach means reconnecting with growth and prosperity while accelerating the long-term decarbonisation of the energy system.

In Ukraine, the recovery, both post-conflict and during the war itself, offers a similar opportunity to provide positive prospects and empower civil society, also, among others, by accelerating the transformation of its energy system and speeding up the accession process as the country strives to join the European Union (EU). The government and its citizens largely support this 'build back better' approach.

So what tools and which actors can contribute to this process and how? This study asserts that (renewable) energy communities can and should play a significant role in the reconstruction and in the energy transition in Ukraine. Supporting the development of energy communities in Ukraine is not merely a requirement to build back energy infrastructures and to align national laws with EU legislation. It is also necessary in order to ensure that the energy transition and reconstruction take into account the needs and potential contributions of the Ukrainian people and the communities they live in.

The following introductory chapter provides a basic definition of what energy communities are and why they are relevant. It then goes on to address the specific context of this study and presents the study's goals, approach and scope. Finally, the last section explains what efforts we have taken to make the study more accessible to readers, so that anyone can quickly skim through the document or take a deeper dive to explore the various aspects and points covered in it.

1.1 What are energy communities?

Energy communities[1] are actors in the energy system who enable multi-stakeholder and/or citizen-driven actions. They are commonly understood as an entity producing, consuming and, in some cases, selling the renewable energy it generates. One might ask: Are they not simply energy cooperatives under a different name? The answer is twofold: Yes, energy cooperatives are the most commonly known form of energy community and exist under Ukrainian law. But, no, they are not synonymous with each other. An energy cooperative is a specific legal form to implement the concept of energy community, which is an umbrella term.

Energy communities can make a significant contribution towards transforming the energy system and reaching energy and climate policy goals. A study estimated that 37 per cent of renewable electricity could be produced by energy communities in the EU by 2050 (CE Delft, 2016). However, the potential for citizens and other actors, such as local self-governments (LSG) s as well as small and medium-sized enterprises (SMEs), to contribute to the energy system is not limited to producing, consuming and selling (renewable) energy. Overall, various other activities, such as engaging with the topic of demand flexibility, offering mobility services or renovating buildings, can be developed for and by energy communities.

[1] An energy community should not be confused with the Energy Community. The latter is an international organisation supporting the collaboration of the EU with non-European countries, including Ukraine, to extend the implementation of a common internal energy market. It is a key organisation in accompanying Ukraine's accession process to the EU, which includes transposing policies supporting the development of energy communities. To avoid confusion, we will use the plural as much as possible.

Policymakers, especially from EU institutions, increasingly see energy communities as agents of change to accelerate the energy transition and safeguards to ensure its acceptance and competitiveness on the energy market.

On one hand, the development of energy communities is associated with unleashing untapped economic potential and innovations in the energy sector. Energy communities form an alternative and challenge the business model of profit-driven, large-scale commercial actors in the energy sector. However, collaborating with those traditional market actors also opens up new business opportunities for them. On the other hand, because energy communities enable participation and aim to reap economic, social and environmental benefits for their members or a broader group of beneficiaries, they contribute to the creation of added value (e.g., on a social and environmental level and for the local economy) and to the democratisation of the energy system.

Specifically, policymakers see increasing actor diversity in the market and a broadening ownership structure as a means to address social aspects of the energy transition, such as social justice. The development of energy communities and the activation of consumers encompass other technical benefits, such as the cost-efficient integration of renewable energy sources (RES) in the overall energy system. Subsequently, for policymakers, promoting energy communities becomes a means to effectively reach many other policy goals, such as market competition, local acceptance and improved governance in the energy transition.

The topic of energy communities has attracted a lot of attention in the academic and policymaking spaces in recent years. The idea behind energy communities is not new and it is quite intuitive, but its mainstreaming in many countries is fairly recent. And while the general awareness about energy communities, as well as the number of energy communities and organisations supporting them, is rapidly growing in Europe, it is still a concept unknown to many stakeholders who could create, support or collaborate with energy communities. Furthermore, in many countries, energy communities still lack the favourable conditions they need to thrive. There are still many obstacles impeding energy communities from reaching their full potential in terms of contributing to the energy transition.

This also holds true for Ukraine. Beyond a small group of energy experts, many actors lack awareness and a deep understanding of what energy communities are and how to create and support them. However, there are a few promising areas that show that the development of and support for energy communities is beginning to take place, as we will show in this study. In the next section, we provide background information to help the reader understand why the development of energy communities in Ukraine is politically relevant.

1.2 Status quo and current drivers of energy transition in Ukraine

The development of energy communities is dependent on the transformation of the energy system and energy markets and vice versa. The development of distributed technologies and the regulation of monopolies to allow third-party access were key elements in the emergence of energy communities in European countries. Along with that, the emergence of energy communities in turn influenced the transformation of the energy system and market structure.

The Ukrainian energy transition is deeply rooted in pre-existing factors linked to geopolitics and energy security, which have gained significantly in importance since 2022, including the beginning of the Russian war of aggression against Ukraine. Ukraine has been heavily reliant on fossil fuel imports and has been a major transit country for natural gas between the EU and Russia. Today, energy independence, the reconstruction of the energy

system and the EU accession process are prominently mentioned as political priorities and are strongly interlinked. They are likely to remain strong drivers of Ukraine's energy transition in the years to come. The commitment to a decentralised energy system and energy efficiency is key to achieve independence and resilience. This commitment is likely to have a positive influence on the development of energy communities.

1.2.1 War and reconstruction

The war sheds a new light on how to rethink and accelerate the transformation of Ukraine's energy system. This need for transformation and resilience becomes more pressing every day because energy installations are deliberately targeted by the Russian armed forces. Every part of the energy system is affected. e.g., nuclear plants have been occupied, while other power and heat generation plants, as well as transmission and distribution lines and substations, have been destroyed. Since spring 2024, Russia has increasingly focused its air strikes on thermal generation facilities and supply infrastructure. As a result, widespread power outages have become a daily occurrence for the population. Over half of generation capacity was destroyed in 2023 (United Nations Development Program 2023), while attacks also grew in intensity in 2024.

Those regrettable facts show how the extensive physical destruction also impacts the social fabric, with millions of civilians hit by poverty and homelessness. In this context, reconstruction will be as much about rebuilding the physical infrastructure as it will be about rebuilding society. Energy communities can, inter alia, play an important role by strengthening social cohesion and addressing energy-related poverty, as we will show in this study.

Background data* on the impact of the war, focused on the energy and housing sector

Overall, the third Rapid Damage and Needs Assessment (RDNA3), published in February 2024 and covering damage and losses up to the end of year 2023, estimates the cost of rebuilding Ukraine's economy at USD 486 billion (EUR 452,8 billion), or 2.8 times the nominal GDP forecast for Ukraine in 2023 (World Bank, 2024).

Further data shows that:

- The housing and energy sectors are among the sectors most affected by damage and destruction, representing 37 per cent and 7 per cent of total damage and 17 per cent and ten per cent of recovery and reconstruction needs, respectively. This does not account for needs which have been already met by way of governmental and international support.
- More than two million homes were damaged or destroyed, representing around 10 per cent of the housing stock.
- Around 3.7 million people are internally displaced and almost six million have sought refuge in neighbouring countries.
- Poverty has increased fivefold in 2022. Since the start of the war, at least 1.8 million people have fallen below the poverty line, bringing the total to over nine million Ukrainians living in poverty (total current population: 33-41 million, depending on whether the population of Russian-occupied territories is included in the statistics).

The Kyiv School of Economics (2024) estimates that, as of May 2024, the energy sector suffered USD 16 billion in damage and over USD 40 billion in losses since the start of the military conflict in February 2022 needs over USD 50 billion to offset damage and losses in line with the 'build back better' approach, i.e.,

policies that align with EU energy policies and the green transition, both of which are also crucial to attracting external support.

**Data may now be outdated and underestimate actual losses and damage, given that the situation is highly dynamic and that data from occupied territories may in cases be missing. If you are interested in learning more about the damage/losses and reconstruction needs of the energy sector, please refer to the aforementioned sources which are regularly updated.*

Besides that, the war has deeply and lastingly shaped the perceptions of the Ukrainian people and its government with regards to the transformation of the energy system.

Until recently, large parts of the Ukrainian population and the government viewed energy supply primarily as a task of the state, with no option for individual or collective action. Maintaining a centralised and affordable energy supply from the point of view of end customers and being able to efficiently manage it from the point of view of state actors were the primary goals. However, attacks on energy plants destroyed the existing infrastructure and therefore altered the core pillars of the state's role in ensuring security of supply. Those attacks showed the vulnerability of a centralised energy system, but also underlined the ability of individuals to act. Moreover, it showed the resilience of the Ukrainian society as a networked system. Therefore, the development of decentralised and decarbonised energy sources is seen by many as a short-term priority to restore generation capacities quickly, and to ensure a secure and sustainable energy supply in the longer term.

A representative survey conducted by Ecoaction (2022) reports large-scale support amongst respondents for the development of renewable (78 per cent) and distributed energy sources (84 per cent). It also suggests that the local installation of RESs would be widely accepted as it is believed to be closely correlated with increasing security of supply at the individual (92 per cent) and community (86 per cent) level. Over two thirds of households are considering installing RES installations, provided they receive support in terms of equipment or subsidies.

Municipalities, citizens and the government are aware that decentralised RESs are an excellent alternative for securing their own energy supply and contribute to local value creation. The government defines energy recovery as 'repairing, rebuilding, constructing, reconstructing and creating reliable safeguards to protect power generation and distribution facilities' as well as 'energy efficiency and economical energy consumption'. On one hand, this means an energy system less reliant on imports achieved by boosting domestic production. On the other hand, this means increasing the autonomy and self-reliance of local communities by reducing dependence on centralised energy infrastructures, which can be at risk of attack. The central role of local communities in the energy recovery is also reflected in governmental structures, albeit with some changes having been made to the composition of the portfolio in the past year.

In summary, energy communities can contribute to reconstruction needs in several ways. Through their participatory approach, they can play a decisive role by ensuring that reconstruction projects are in line with local needs, are accepted on a local level and can provide benefits to the local population. They can also help mobilise private capital to ensure that a range of sources are drawn on to finance reconstruction efforts.

Ukraine's energy transition and the development of energy communities are also strongly linked to another political process: EU accession.

1.2.2 EU accession

The EU accession process is an important driver for market integration and decarbonisation of the energy system in Ukraine. EU policymakers are currently discussing a potential EU enlargement by 2030, which could include Ukraine, pending sufficient reforms. The war has accelerated the process of accession to the European Union (EU) for Ukraine. Just four days after the invasion, the government applied for membership. All in all, three different milestones (being granted candidate status, the decision to open accession negotiations and the official launch of negotiations) were achieved between June 2022 and June 2024.

However, the integration efforts of Ukraine, including in the energy sector, largely predate the war. In 2011, Ukraine joined the Energy Community, which aims at extending the EU internal energy market to participating countries. Contracting parties commit to implementing EU legislation in relation to energy markets and integration, security of supply and infrastructure, decarbonising the energy sector, environmental standards and the capacity of relevant public authorities. As part of this step, the Ukrainian energy system is increasingly embracing the cornerstones of the EU energy and climate policy to become more liberalised, decentralised and decarbonised.

According to the latest implementation report (Energy Community Secretariat, 2023), Ukraine can make the most progress in decarbonising its energy sector compared to other policy areas, e.g., by improving governance and implementing support instruments for the deployment of RES and for energy efficiency. However, the Energy Community Secretariat considers the implementation framework for self-consumption and energy communities quite advanced compared to other areas. Ukraine took a huge step forward on 25 June 2024, when the Ukrainian cabinet of ministers adopted its National Energy and Climate Plan 2025–3030. This includes reducing greenhouse gas (GHG) emissions by 65 per cent compared to 1990 and reaching a 27 per cent share of RESs in total final energy consumption. The development of energy communities will be directly connected to the implementation of EU legislation (acquis), as the EU has adopted many rules itself since the late 2010s.

To support those reform and investment efforts, the EU provides assistance to Ukraine in several forms. For example, the Ukraine Facility is a support mechanism which provides direct and indirect financial assistance as well as technical support. The green transition is one of three cross-cutting areas, while the energy sector is one of the seven key priority sectors to receive funding. It is conceivable that financial and technical support could be provided to develop energy communities under this facility. Against this backdrop, Ukraine has the possibility to learn from other countries and catch up with them quickly. Reconstruction could even be an opportunity to leapfrog other candidate countries or Member States in reaching climate neutrality.

All in all, this shows that the EU integration process will be, in all likelihood, a major driver of the energy transformation in Ukraine through regulatory changes but also by channelling public funding to support this transformation. Moreover, Ukraine has also an opportunity to shape the integration process by using the war de facto as an opportunity to enact social change.

1.3 Goals, scope and approach of the study

The development potential of energy communities in Ukraine is large and politically relevant. Energy communities can play an important role in reconstructing and transforming the energy system. And even more so than in other countries, they can play a unique role in strengthening the social fabric, so that many Ukrainians are not just rebuilding or returning to a house, but going back to a home and a cohesive, forward-looking community. We want to empower Ukrainian citizens and stakeholders with solutions to address the post-war recovery, the energy transition and the EU accession process.

1.3.1 Goals and target audience

This study analyses the status quo and development prospects of energy communities in Ukraine. It aims at raising awareness and strengthening knowledge about energy communities, their relevance and their contribution for Ukraine and providing recommendations on how to support their development. Firstly, it provides details on how energy communities are perceived, regulated and supported in Ukraine. Secondly, it summarises general information on energy communities pertinent to the Ukrainian context by referencing other resources to raise and strengthen the level of knowledge on energy communities among the target groups. This encompasses background information on areas of application, relevant actors and case studies. All in all, the study maps action levers for energy communities and other stakeholders in Ukraine and will contribute to the existing knowledge on energy communities in Europe and the world.

We primarily aim to address relevant Ukrainian actors who can play a role in supporting, regulating or even creating energy communities in Ukraine. This means public authorities, e.g., ministries, regional administrations and local self-governments, which also involves regulating or empowering these bodies, and non-governmental organisations (NGOs). The results should also be of interest to public actors, networks or advocacy organisations outside of Ukraine, and more particularly in the EU, and financial institutions at the international and European level, seeking to support the development of energy communities as well as the reconstruction and integration of Ukraine, in order, for example, to provide information on how recovery funds could be made available or directed towards energy communities.

1.3.2 Approach and scope of the study

Given the goals of the study, that being to describe the status quo and the development perspectives of energy communities in Ukraine, it aims at answering the following overarching questions:

- What are energy communities and what are their potential contributions to the energy system and the energy transition in Ukraine?
- Which activities and business models are particularly promising in the current context?
- Who are the key stakeholders for creating and enabling energy communities in Ukraine? What roles are they playing?
- What are the relevant regulations for energy communities in Ukraine and how do they fare in comparison to current and future EU requirements? What are the relevant funding options?

To answer these questions, we worked with multiple sources and methods.
First, we conducted a field analysis with the support of two Ukrainian NGOs: the Luhansk Oblast Human Rights Centre ‘Alternativa’ and the Centre for Environmental Initiatives ‘Ecoaction’. The field analysis is comprised of a survey and interviews with relevant Ukrainian stakeholders.

- The **representative survey** was conducted in February–March 2024 on a representative target sample size of 507 respondents over the age of 18 through telephone interviews. The aim was to gain insights on the level of awareness and knowledge on energy communities among the public and their willingness to participate in such initiatives.
- Around 20 **semi-structured interviews** were conducted between February and May 2024 with representatives of local authorities and local energy initiatives (around half of the interviews), as well as experts (officials from ministries, international organisations, NGOs or legal experts). Here, the aim was also to obtain

information on the level of awareness and knowledge and an overview of how relevant actors perceived energy communities, which benefits they associate with their development and which obstacles impede their creation.

- Through **additional desktop research**, we have also gathered information on existing initiatives in Ukraine and the current legal framework to assess the status quo.

Besides the field analysis, we integrated **scientific and practice-oriented resources** to present enabling and hindering factors, best practices and case studies. In this regard, it is important to note that the available resources on energy communities have grown exponentially in recent years. We summarised and referenced other resources wherever possible, whereby we acknowledge that we did not examine or only briefly explored some aspects, publications or examples. Therefore, this study does not claim to be exhaustive and we encourage our readers to explore the existing literature.

Analysing energy communities and their development is a truly inspiring but also challenging endeavour. Due to their specific characteristics and links to numerous aspects of the energy transition, we could have explored many different relevant topics in-depth. However, this becomes even more challenging in a context like in Ukraine, where their development may depend on many more external factors. It is therefore necessary to define a clear and reasonable scope for this study.

- Assessing the potential development of energy communities

We do not intend to provide a quantified assessment of the potential of energy communities in Ukraine, i.e., how much they could contribute to RES generation and to the achievement of certain policy goals. However, this could be an interesting topic for a follow-up modelling study.

- Field of activities and applications

This study provides an overview of the full range of benefits and activities energy communities could deliver in Ukraine. At the same time, for the purpose of this study, we will focus on applications relating to renewable generation and self-consumption in the power and heating sector as well as several examples in the field of building renovation. This is being done because it corresponds to the more immediate needs of policymakers and stakeholders in relation to the damage and losses described above. This is however not to say that other activities, such as providing decarbonised and shared mobility services or demand-flexibility services, are not relevant. Network management and congestion will become a hot topic sooner rather than later as the share of variable renewable energy increases in the system, especially if it takes a long time to rebuild the transmission and distribution network.

- Range of factors influencing the development of energy communities

Which leads us to another important point. The development of energy communities depends on a broad range of factors and actors. It relies on the specific support they may receive to overcome certain barriers. That said, certain factors may also be tied to more general framework conditions impacting every (RES) project developer and investor, e.g., support schemes for RES, high insurance rates or corruption at some public administrations. The war is an aggravating factor but certainly not the only one. Consequently, it is important to understand that the development of energy communities is anchored in a broader context. We will not be able to go into in-depth detail on every aspect impacting the development of energy communities. The most important point we want to highlight is that supporting the development of energy communities will involve a combination of specific measures and mainstreaming them into other policies as well as reconstruction financing instruments.

Finally, we would like to present the assumptions underpinning this study and its potential limits. We assume that the following will be key for the development of energy communities

- strong, continuous and consensual support to the EU accession process
- a strong commitment from policymakers and other stakeholders to implement green deal policies
- the necessity for policymakers to adapt the existing regulatory framework as well as to adopt specific support mechanisms

While some energy communities may still emerge without these preconditions being met, they are likely to remain exceptions otherwise.

We would also like to point out some of the limits of our field analysis. We do not claim our interview sample to be representative. The sample size is too small, and we were not able to include some relevant stakeholders (regional actors, i.e. public administration (oblast) and distribution system operators (oblenergo), energy agency, regulator), which would have added a further dimension to our analysis. Therefore, the interview quotes we use are meant to illustrate and make our arguments more concrete. We would in particular recommend focusing on the role of distribution system operator (DSO).

1.4 How is our study structured and how to read it?

The study is structured in chapters, sections and subsections. It includes five main chapters, in addition to the introduction (chapter 1) and the conclusion (chapter 7). Chapter 2 defines energy communities and presents their historical development. Chapter 3 presents their goals, benefits and activities as well as existing examples of energy communities in Ukraine. Chapter 4 zooms in on relevant stakeholders and their role in the creation or support of energy communities. Chapter 5 focuses on the role of policymaking in developing a regulatory and enabling framework in line with the EU requirements. Chapter 6 deals with financial support mechanisms for energy communities. Finally, this study includes an annex. It collects case studies and best practices referred to in other chapters.

Each chapter can be read on its own, though they include cross-references to other chapters.

To aid readability, each of the five main chapters include a short presentation of the chapter in a grey box at the beginning, which sets out what different stakeholders in our target audience can learn in this chapter, as illustrated below. Each chapter ends with a second grey box that references relevant resources regarding the topics covered in the chapter.

What you will find in this chapter

Ressources: where to start

We also include additional information, which you'll find in orange boxes, that focuses on a particular aspect or example.

Focus: Example/best practice XYZ

Recommendations are also shown in orange.

- xxxxxxxxxxxxxxxx

The concept of energy community is so powerful because it lives and breathes from the engagement of experts and citizens. But exploring their development in a study, especially one focused on regulatory, technical and financial aspects, can become overly abstract. To counter this, we use anonymised quotes from the interviews we conducted for the purpose of this study to illustrate our points. Quotes will be presented in the following format:

> *'xxxxxxxxxxxxxxxxxxxxx' Interview x, representative of xxx*

We hope you enjoy reading the study.

2 What are energy communities?

'The revolution is that before you could buy electricity only as a unit of a product or service, and now you can buy a means of producing electricity.' Interview 11, representative from an NGO

'And we should have an alternative. That is, there should be an energy community for major investors who have a lot of financial resources and can implement large projects at once. And there should be a community where there are many small investors who can meet the needs in a low-cost and fast way. Major investors will not look at a small initiative or a single building when they invest. They are more interested in coming and investing in large projects that cover a large area, to have a big impact. And the public should have the opportunity to choose between these alternatives, select the best way to get involved, because if there is a project, with one investor, then resources and decision-making will be centralised. If there are a lot of small investors, they will compete with each other, and the bureaucratic process will be very long, with everyone pulling the strings, and it will take a lot of time. And time is a very scarce resource. Therefore, it would be good if there were alternatives for different strata, groups and populations.' Interview 6, representative of a LSG

What you will find in this chapter

This chapter is targeted towards any stakeholder who wants to gain a deeper conceptual, historical and empirical understanding of what energy communities are and how they relate to other closely related term. It also provides empirical examples of how energy communities have developed in pioneering countries and how the development of energy communities and the energy transition were interlinked there.

If you already have an idea of what energy communities are and would be more interested in learning about how the legal definition(s) of energy communities is operationalised in Ukrainian and EU law, please refer to section 5.3.2.

The development of energy communities stems from a simple and ancient idea: citizens and communities can provide for their own energy needs. However, its implementation in our modern world and in an evolving energy system is not as straightforward.

The first section defines the concept and discusses how it relates to other concepts often associated with it. The second section focuses on the historical development of energy communities in relation to an evolving energy system. This chapter is complementary to chapter 3, which will focus on presenting the benefits and potential drawbacks of energy communities and how they operate, and chapter 5, which focuses on the legal implementation of this concept.

2.1 Defining energy communities

> *'And do you need [a definition] that is in line with the legal framework of the European Union? Or is my own understanding of what an [energy] community in Ukraine sufficient?' Interview 20, representative from an NGO*

This quote exemplifies the challenge of defining energy communities. It hints at the existence of multiple interpretations and how they can vary depending on the context and purpose of the definition.

It also reflects the dilemma which we were confronted with in choosing a definition for the purpose of this study and the tensions in our objectives. On one hand, we want to provide robust knowledge to actors so that they can be empowered to develop energy communities by and for themselves. We believe it is the best possible foundation for successful implementation. On the other hand, we want to focus on how this concept can be quickly introduced into Ukrainian policy as this relates to the EU definition that underlies the definition of the term. Therefore, we decided to seek a middle ground between these two approaches by exploring the definition of energy communities in two different chapters. If you are interested in learning about the legal definition(s) of energy communities in Ukrainian and EU law, please refer to chapter 5.

To uncover the richness and complexity of the concept of energy communities, it is important to understand why multiple meanings exist side by side, to recognise the building blocks of this concept and understand how it relates to others. In that way, it becomes possible for stakeholders to become aware of the advantages and limits of certain definitions and their use.

2.1.1 Being aware that multiple definitions exist

In this subsection, we want to show why there are multiple definitions of energy communities, what are the potential implications, what are the advantages and limits of the different definitions of energy community that exist and why it is important to acknowledge this.

One of the challenges in defining energy communities is to understand that definitions have different starting points and are used in different contexts. An intuitive and simple understanding often exists alongside more specific notions, leading to certain tensions.

This is illustrated by the results of our field analysis. Before answering questions from our survey, we provided a simple definition of energy communities to our respondents and then asked if they were familiar with the concept (Figure 1). The results of our survey suggest that around 60 per cent of our respondents have heard of the concept before, yet only seven per cent feel confident in explaining it to others. This means that a majority of the Ukrainian population has some kind of intuitive understanding about the meaning of the

concept. For around 40 per cent of respondents, this is the first time they have heard about energy communities, underlining the importance of an information and awareness campaign.

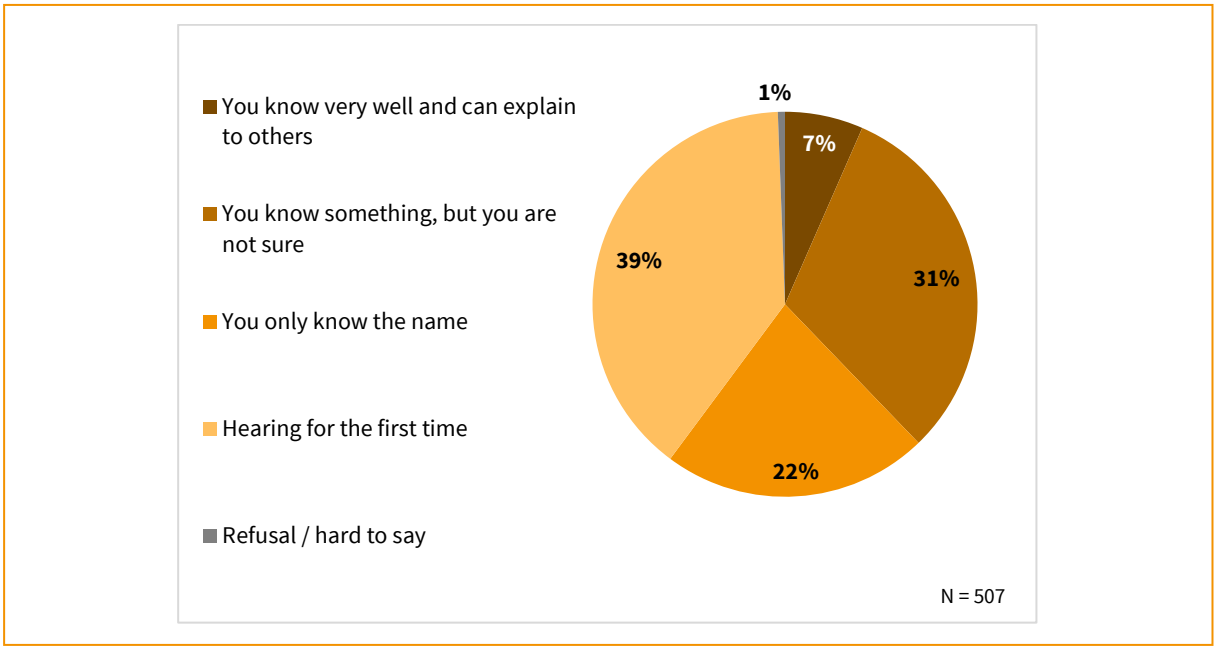


Figure 1 Survey results: How familiar are you with the concept of 'energy community'

We also conducted 20 interviews with Ukrainian representatives from local self-governments and energy experts and got an equal number of definitions, characterised by different levels of complexity and specificity. Some definitions were so different that they seemed to refer to very different concepts, yet still seemed to be a plausible understanding of what an 'energy community' could mean. The following quotes show how the concept is interpreted in widely different ways.

> *'a group of like-minded people, more global, i.e., at the state level, who are united by the idea of climate equality, energy sector development, and they are united to promote all these ideas and initiatives because it is cheaper, they can share, diversify their risks, diversify their finances and build trust' Interview 6, representative of a LSG*

> *'a group of citizens of a lower-level community that has its own initiative and its own issues. They work together with participants from local authorities as well as potential investors who are united by the idea of climate neutrality and the transition to a decarbonised world, analyse EU directives and are ready to invest in all these energy projects' Interview 6, representative of a LSG*

> *'an association of consumers who seek to meet their own energy needs, usually on a local basis.' Interview 13, legal expert*

Why do different interpretations co-exist and compete with each other? Because energy and community are two different words that can have different and expansive meanings. Depending on the context (time, space), the set of interests, the analytical focus, the objectives attached to the initiative or the activities conducted and technologies implemented, the meaning of energy communities can vary greatly (Bauwens et al., 2022).

Some of our interviewees are aware of this and acknowledge the issue by providing different definitions or by pointing towards the implications of using unclear terminology in the real world.

> *'At the moment, we have a mix of terms. There are terms like community energy independence, energy cooperatives and energy communities, which are not suitable. And all of them are used in combination without any clear structure. […] All the definitions need to be carefully applied so that they do not undermine future business models.' Interview 12, representative from an NGO*

In conclusion, we argue that the full potential of energy communities can be reached if actors can navigate between a narrow and broad definition of energy communities and know when to use them effectively. While broad and somewhat vague terminology can be used in most cases, it may be necessary to operationalise the definition in certain cases to avoid confusion and ambiguity.

2.1.2 Understanding the building blocks of a definition

The aim of the following conceptual presentation is to underline where the different interpretations of energy communities stem from. Based on the definitions provided in the interviews, a review of the scientific literature and our knowledge about energy communities, we argue that the definition of energy communities is based on different building blocks. The variations in understanding and definitions emerge according to the number of building blocks indicated or their level of specificity. The building blocks are:

- A form of collective organisation
- A shared purpose
- A common denominator
- The type of participants
- The use case (scope of activities, technologies employed and applicable sectors)

a. Form of collective organisation

An energy community should first and foremost be understood as a collective self-governing actor. To reflect this characteristic, interviewees used nouns (group, set, association) and verbs (to gather, to come together, to unite). But more specific terms such as cooperative or cluster were also used. A community has an intermediary position between individual citizens and elected governments at the local, regional or national level. It is also a space for social interaction and implies a participatory process of decision-making. Depending on how formalised this process is, energy communities can be an actor, to which the ability to act or decide on behalf of its members is conferred, or refers to more loosely structured networks.

This is where most interpretations differ and why it is important to understand for which purpose a definition is needed. While there is a certain amount of flexibility in how a community is described in a social context, providing a clear policy framework requires some degree of formalisation. This is why in terms of policymaking, the legal definition of an energy community is tied to a legal mechanism, e.g., a legal persona or a legal agreement which formalises its existence. The legal recognition of those actors is a prerequisite to govern and regulate them, i.e., in order to formalise certain rights, obligations or derogations. For communities not (yet) meeting this legal requirement, the term 'quasi energy communities' or 'emerging energy communities' could be used instead.

Against this backdrop, an energy community could have no legal form or take any legal form. However, the most common forms are associations, non-for-profit organisations, partnerships, limited liability companies and cooperatives. As such, an energy cooperative is a legally defined organisational form that formalises the implementation of an energy community. These legal forms exist under Ukrainian law.

b. Purpose/goal(s)

Energy communities are assumed to have a purpose, i.e., a decision-making mechanism aimed at achieving a potential outcome. Implicitly, they are created to solve an issue, whereby collective action is preferred to individual action or relying on actions by other actors (e.g., elected bodies, energy companies).

Again, definitions diverge regarding the level of specificity and the characterisation of this purpose. Some definitions provided by our interviewees were quite abstract and suggests that the purpose should not be predetermined. However, many believe that their purpose is to transform the status quo for the better.

> *'any institution that has united to solve this problem.' Interview 2, representative of a LSG*
>
> *'to create something that can improve life in some way on the planet.' Interview 5, representative of a LSG 'whose goal is to achieve a defined goal in the energy sector' Interview 1, representative of a LSG*

More specifically, energy communities are often associated (1) with the idea of self-sufficiency ('meet their own (energy) needs', 'meet the needs of the population and enterprises') and (2) with the transformation of the energy sector, in particular in terms of decarbonisation. This shows how some actors may leave room open for energy communities to determine their purpose themselves, whereas other actors, based on certain assumptions or in order to pursue their own interests, associate energy communities with specific contributions.

The purpose of energy communities is also understood differently depending on who you ask. Energy communities provide specific contributions to their members or to the local area where they are established. But they can also provide benefits to other actors and the energy system or market as a whole. This is why we can distinguish between two ideas. First, we have the goals of energy communities, i.e., a purpose they define themselves. such as building an energy community to secure energy supply locally and reducing energy costs. Second, we have the goals for energy communities, i.e., a purpose which other actors ascribe to energy communities, such as local acceptance for an RES installation or contributions to creating an optimised system or network management.

However, in general, there is a certain degree of consensus between energy communities and other actors that the purpose of energy communities is what distinguishes them from traditional energy companies. Energy communities primarily seek to reap economic, social and environmental benefits for their members or a broader community. We will be providing more details on which goals and benefits energy communities pursue in section 3.1.

c. Common denominator

The word 'community' implies a group of people with something in common. This could be having a common goal, though other considerations could also be taken into account. From our six building blocks, this is perhaps the one area where where misconceptions and misunderstandings can happen.

First, members of a community can share values, beliefs, interests, a common background or certain socio-economic characteristics, examples of this being a community of women or a community sharing the common goal of promoting the energy transition. Second, a community can also be tied to a specific place or a common infrastructure. This is why we can use the terms of 'communities of interests', 'communities of place' and 'communities of interests and place' when we speak of energy communities (Baigorrotegui and Lowitzsch, 2019; Bauwens et al., 2022).

Ukrainian has two different words for the term, which distinguish between communities of place and communities of interest.

> *'Hromada and spilnota, which can both be translated as community, mean very different things. Hromada is always linked to a specific location and institutionally defined by the relevant legislation. Spilnota is something that is self-organised. […] That is, the community may not always be limited to a single place or location.' Interview 12, representative from an NGO*

This shows that the Ukrainian word 'hromada' (територіальна громада, EN: territorial community) is an administrative unit, comparable to a municipality, introduced by an administrative reform in 2020 to strengthen local self-governance. Spilnota (Спільно́та) refers to a group of like-minded people or a group sharing a common understanding.

This has important implications. Depending on the translation, we could understand energy community (hromada) as projects developed in a municipality or by a municipality. A community (spilnota) could still be organised locally, though this is not necessary. It is quite clear that, as part of reconstruction efforts, many energy projects will be implemented locally and/or by local authorities. However, hromada may be too narrow an interpretation of energy communities, which can undertake activities outside of a single municipality or without the support of a municipality.

d. Participants

The term 'community' implies that there is more than one participant. However, it does not specify the characteristics of the participants. Our interviewees mentioned different types of participants who could be involved in energy communities: individuals (citizens, residents), urban or rural public authorities (municipal authorities, village communities) and companies. While many of those interviewed stressed the importance of collaboration between different types of actors, this seems to be more of a preference than a requirement to qualify as a community. In short, it might mean that energy communities can be composed of a single type of participants, e.g., members of the public, or different types of participants, e.g., public authorities and private organisations as well.

There is also no information available on what constitutes participation. It could be ownership and investment, decision-making, contributing other types of resources (time/labour, expertise, etc.). Not every participant may contribute in the same way.

e. Scope of activities, technologies employed and applicable sectors

Energy communities are mostly associated with the electricity sector and renewable technologies, wind, solar or biomass. However, some of our interviewees also mentioned applications in the heating and cooling as well as the transport sector.

While some definitions do not include specific activities, many interviewees associate the purpose of energy communities with self-sufficiency, meaning consuming the energy they produce themselves. Thus, generation and consumption are the two key activities associated with energy communities. Some also added that energy communities can sell surplus energy they do not consume themselves, store it or supply other consumers, including public institutions such as schools or hospitals.

An important distinction between communities and individuals is that acting as a community opens up more possibilities, as mentioned by one of our interviewees.

> *'I believe that the energy community will have more resources than a single consumer. This opens up the possibility of implementing other technologies. […] In other words, the concept of energy communities opens up greater opportunities for the use of a wider range of technologies.' Interview 17, representative from the Ministry of Energy (MinEnergo)*

In short, a community can (1) acquire more resources to scale up investments and install more efficient technologies and (2) combine multiple and complementary technologies, e.g., storage. In so doing, an energy community would be able to implement a more efficient and integrated supply and consumption concept locally than a large group of individual households. Overall, the focus on those activities, primarily generation and consumption, is quite common but reveals some of the blind spots still existing regarding the potential of energy communities. Energy communities can also implement energy-efficiency measures, support building renovations and provide flexibility services. They can also offer other types of services to other energy communities, e.g., education and capacity-building.

The point of this conceptual presentation was to underline where the different interpretations of energy communities stem from. In summary, they come about based on the following:

- How social interactions are formalised
- How the purpose of energy communities is determined and by whom
- What is the common denominator and what is it based on
- Who can participate and how
- What activities are possible
- In which sectors and with which technologies do energy communities work

The diversity and flexibility of definitions bring certain advantages, drawbacks and therefore trade-offs. On one hand, it allows one to integrate a variety of understandings and realities under one umbrella term. Moreover, its intuitive understanding contributed to its popularisation. On the other hand, using a term that is so unclear and vague can lead to confusion and ambiguity, especially if this is also reflected in the law. This has important implications in terms of developing energy communities. Certain actors will ignore or exploit the lack of clarity, while others might be inhibited by the lack of transparency and guidance. In this regard, policymakers have discretionary power in deciding to reduce ambiguity and uncertainty regarding the development of energy communities as well as to address tensions between actors in the energy system by introducing a clear legal definition.

Against this backdrop, it is important to understand that the term 'energy community' has two meanings. For one, it is an umbrella term that is expansive and covers a broad range of aspects. But it is also a specialised term introduced under EU legislation. And while the definition of the legal term is broad in scope, it still operationalises some of these building blocks to reach certain policy goals (see subsection 5.3.2).

Since energy communities existed in some countries before a legal definition or a special framework was introduced for them, some forms may continue to co-exist alongside ones that comply with the EU criteria. Firstly, we want to emphasise that the development prospects of community-related initiatives can go beyond the

mere transposition of the EU legislation. And secondly, that energy communities recognised under the EU definition, other types of community initiatives and other actors can carry out the same energy-related activities. The key thing needed in this regard is to create terminology that can reduce uncertainty.

Focus: Energy clusters in Poland (klastry energii)

In 2016, before the introduction of energy communities in EU legislation, Poland adopted the concept of energy clusters in its legislation. The law was amended in 2023, which means that the concept is still evolving. While bearing a strong similarity with them, energy clusters are not energy communities as defined under the EU definition. However, they still benefit from recognition and support under national law.

Energy clusters are civil law agreements between different participants in an operational area, which cannot exceed one county or five municipalities. This agreement covers cooperation in the field of generation, storage, demand balancing, distribution and trading in electricity, fuel or heat. The purpose of energy clusters is to provide benefits to the parties to the agreement or increase the flexibility of the electricity system. From the perspective of the National Energy System, energy clusters are limited areas that strive for self-balancing and thus contribute to reducing network congestion. Participants can also agree to take on other tasks, such as educational outreach and capacity-building. Compared to the EU's definition of energy communities and energy cooperatives recognised under Polish law, energy clusters are more business- and technology-oriented. Their members are associated with having a strong entrepreneurial and innovative mindset.

The cluster does not have a separate legal entity, but is instead represented by a coordinator. Participants include citizens, local government, research institutes as well as small, medium and large public transport companies or other entities operating in the area covered by the cluster. With the amendments adopted in 2023, the participation of a local self-government, a municipal utility or a capital company, which owns a majority stake in the municipal utility, is mandatory. Existing clusters do not have to change their composition to comply with this new requirement, unless they want to benefit from the newly introduced support schemes. At the date of publication, only two clusters have been included in the national registry managed by the regulatory authority.

According to recent estimates, there are around 180 energy clusters in Poland, though less than a third of them are actually in operation.

We can say in summary that energy clusters are less citizen-based and more business- and technology-oriented. Depending on one's point of view, this might be perceived negatively or positively as two organisational forms that compete against or complement each other.

There were legal discussions to determine whether energy clusters qualify as energy communities according to the EU definition, and if they do not, whether they should remain an independent community-based concept independent from the EU legislation. Exploring this topic would go beyond the scope of this study and is not relevant to the points we are looking to make, namely that governments can go beyond the transposition of the EU directives to help foster the development of a broad range of energy community approaches: energy communities and quasi energy communities, i.e., models that complies in large measure with the EU definition, although it does not qualify as an energy community under this definition. This is also a point mentioned by the EU which states that the legal provisions specifying the definition of an energy community under EU law do not prevent other types of initiatives from existing.

This however does not mean that energy community is interchangeable with other related concepts.

2.1.3 Energy communities – how they differ from other related concepts

Energy communities are often discussed in relation to other concepts and conflated with them. Here, we want to emphasise and explain how energy communities differ from those other concepts or are related to them. In short, energy communities are collective actors whereby it is necessary to draw a distinction between them and the following:

- individual actors
- the activities they pursue and the corresponding market role they perform
- the installations they develop and operate

This distinction is important in regard to developing other legal definitions and regulatory frameworks.

- **Prosumer**: The term is a combination of the words 'producer' and 'consumer' and refers to an actor, individual or collective which produces and consumes energy. In this regard, energy communities can be a type of collective prosumer, though the term is also too narrow to properly describe them. The EU has not introduced a legal definition of prosumers, but there are many equivalent definitions available (see below).
- **(Jointly acting) renewables self-consumer,** as defined in the Article 2(14)(15) and regulated under Article 21 of the EU directive on the promotion of the use of energy from renewable sources (2018/2001) (2001), is a consumer or a group of jointly acting consumers (natural person/citizens/households or legal person/private or public organisations) located within the same building or multi-apartment block generating renewable electricity for its own consumption, which may store or sell this energy, provided it is not its primary commercial or professional activity. The difference to an energy community according to the EU legislation is that energy community have a legal persona, and that their activities can go beyond self-consumption.
- **(Jointly acting) active customer**, as defined in the Article 2(8) and regulated under Article 15 of the EU directive on common rules for the internal market for electricity 2019/944 (2019), means a final customer, or a group of jointly acting final customers, who consumes or stores electricity generated within its premises located within confined boundaries or self-generated or shared electricity within other premises, or who sells self-generated electricity or participates in flexibility or energy efficiency schemes, provided that those activities do not constitute its (their) primary commercial or professional activity;
- **Energy sharing**, as defined in the Article 2(10)(a) and regulated under Article 15(a) of the EU directive 2019/944 (2019), means the self-consumption by active customers of renewable energy either: (a) generated or stored offsite or on sites between them by a facility they own, lease or rent in whole or in part; or (b) the right to which has been transferred to them by another active customer for a price or free of charge. Energy sharing is an activity, which can be undertaken by energy communities or other market actors.
- **Peer-to-peer trading**, as defined in the Article 2(18) of the EU directive 2018/2001), refers to the sale of renewable energy between market participants, either directly or through an aggregator, by means of a contract with pre-determined conditions without prejudice to the rights and obligations of the parties involved as final customers, producers, suppliers or aggregators. Peer-to-peer trading could be an activity conducted by energy communities.
- **Small installations or small distribution systems** refer to installations or distribution system which benefit from regulatory exemptions because of their size, i.e., they are subject to simplified registration processes, reduced fees, alternative support schemes, etc. Energy communities are not small installations or distribution systems but can operate them.

In conclusion, the concept of energy communities is expansive because of its inherent ambivalence, being simple yet difficult to understand. The aim of this section was to explain why different definitions of energy communities exist side by side and on which basis. However, it was also to provide clear definitional criteria which help reduce ambiguities and draw a clear distinction between the various concepts that come up often in discussions regarding energy communities.

2.2 Historical development path of energy communities

> *'Let me say it again. Based on the experience of our Western partners and what they went through 20 or 50 years ago, that is what awaits us. That is what we can look forward to. We are just slightly behind the times.' ' Interview 1, representative of a LSG*

Although it may be presented as a revolutionary concept, the idea of energy communities refers to a concept that has been around for a long time. Some of our interviewees mentioned how energy communities developed in Scandinavia and in countries such as the US, Germany and Austria

The aim of this section is to contextualise the development of energy communities within a greater historical context to provide actors with a nuanced understanding of what energy communities are.

2.2.1 Origins of energy communities

Local communities have always met their own energy needs. They harvested the power of wind, water and fire to heat, cook and produce food, tools and other goods. However, the industrial revolution and, later on, electrification coincided with the emergence of large energy corporations and the development of technologies supporting a centralised energy system to meet an increasing energy demand and needs beyond the local level. Still, even then, the creation of energy cooperatives was also instrumental to the development of the energy sector in many countries, especially for rural electrification. Thus, citizens and other local actors collectively organising to produce, distribute and consume energy is by no means a new idea. In this context, community energy is strongly linked to a narrative of self-sufficiency and autonomy.

Focus: Energy communities and rural electrification

Some European countries, such as Germany, Italy and Denmark, have strong cooperative traditions in the energy sector dating back to the beginning of 20th century. In Germany, over 6,000 electric cooperatives were set up between 1895 and 1934 to support efforts to electrify rural areas (Holstenkamp and Müller, 2013).

Similarly, in the US, energy cooperatives were instrumental to rural electrification in the 1930s and supported by the New Deal. In the mid-1930s, 90 per cent of rural households did not have access to electricity, whereas 90 per cent of households in urban area did. By 1939, the Rural Electric Administration, a federal agency set up for this purpose, had supported the creation of 417 rural electric cooperatives, supplying 288,000 households since it was established in 1936. In combination with other support mechanisms, the share of rural population supplied with electricity, rose from 10 to 25 per cent in the span of a few years. (National Rural Electric Cooperative Association, 2023). This growth continued after the end of World War Two.

With the deployment of distributed energy sources, mostly wind farms and the growing power of grass-roots movements around the seventies and eighties, the idea of energy community gained prominence. It became strongly associated with the current energy transition, that is, a transformative process working towards decarbonisation, decentralisation and democratisation of the energy system.

2.2.2 Modern developments since 1990s in some European countries

Notable improvements in general financial and regulatory conditions for RES investment in the 1990s and early 2000s are linked to the take-off of RES and energy communities in countries such as Germany and Denmark. In short, the development of energy communities during that period was linked to attractive and secure remuneration of RES investments, and indirectly largely favourable investment terms for a certain category of actors (citizens, not-for-profit actors in comparison to commercial enterprises). Policies were not directly addressing energy communities as distinctive actors, which were not legally defined at the time. In conclusion, the deployment of RES and the creation of energy communities were closely intertwined and mutually dependent in those countries.

In both Denmark and Germany, individual and collective ownership of RES installations in the electricity and heating sector by private individuals (households or farmers) became an important driver and part of the narrative in the energy transition in both countries, which were considered frontrunners at that time. These examples show that the attitudes of citizens in the energy transition can go from NIMBYism and acts of protest to active involvement and YIMBYism[2], provided certain tools are put in place.

The Danish case is interesting as it combines the possibility of community-led models on one hand and citizen or community participation in large-scale professional projects on the other hand. This did not lead to a decline of citizen ownership but a transformation of it through the expansion of models. This could be particularly relevant for the reconstruction of energy infrastructures in Ukraine. It is likely that large commercial projects will attract donor funds easily and can be built fast. The government could introduce a similar regulation for large commercial projects to offer shares to citizens, locally or across Ukraine, ensuring (local) acceptance of RESs among the general public[3]. In combination with smaller community-based projects, this has the potential to increase resilience and local acceptance and put Ukraine on a path to rebuild its energy system on a sustainable basis.

Focus: The German and Danish energy transition and the development of energy communities

- Germany

In 1991, Germany introduced the world's first RES electricity feed-in law. Since grid access for actors producing renewable energy was denied or made difficult by more established actors, the law forced grid operators to purchase the electricity from RES producers against guaranteed minimum payments. Priority grid access and attractive feed-in tariffs (FiTs) were maintained with the introduction of the Renewable Energy Sources Act (EEG, Erneuerbare–Energie-Gesetz). The introduction of a levy, imposed on all electricity consumers, ensured that these tariffs were guaranteed, reducing uncertainties linked to budgetary changes. This mechanism shifted the financial burden from the government and tax payers to electricity consumers, which is why the German scheme is not considered a subsidy under EU competition law. As RESs became more competitive (i.e., having decreasing levelised costs of electricity – LCOE), the

[2] Not In My Backyard (NIMBY) and Yes In My Backyard (YIMBY)
[3] Also see the presentation of Case EC 3: Le Mené in Annex 1

FiTs became increasingly lucrative. This led to exponential growth in RES capacities but also rising energy prices for consumers, prompting the government to intervene in order to mitigate the surge in electricity prices. Therefore, amendments to the law in the 2010s progressively reduced the level of FiTs or introduced feed-in premiums awarded through tenders. As of 2023, the levy on consumers was abandoned and replaced with subsidies paid out of the energy and climate fund.

With high energy prices and competitive technologies, there was growing interest among final consumers, especially households, in investing in RESs for self-consumption purposes. However, many individuals and communities faced organisational and regulatory barriers preventing even stronger community and RES development.

Energy communities are very sensitive to regulatory changes and their growth and development is far from linear. According to Kahla et al., (2017), the number of citizens' energy companies grew steadily between 2003 and 2008, followed by an exponential growth during the period 2009-2012. After 2014 and the introduction of tenders to allocate RES financial support, the growth of energy communities slowed down significantly, the main reason being that energy communities have less capacity and knowledge to apply successfully to tenders and are less able to diversify or cover the risks associated with participation in an (unsuccessful) auction.

For that reason, the German law introduced a legal definition of citizens' energy companies in 2017 (Bürgerenergiegesellschaften, currently Article 3(15) of the Act amendment the Renewable Energy Sources Act (2023)) and granted exemptions in auctions for those actors to compete more easily and promote the diversity of actors in the energy market. However, this led to unintended effects, namely that almost every tender was won by citizens' energy companies. This led to many questions and insights on a policy front. In short, it has been suggested that the legal definition was not correctly calibrated and failed to meet its objectives. The participating citizens' energy companies were in reality commercial RES developers in most cases that had adapted their business strategy and made adjustments to their projects to meet the community criteria and be eligible for the benefits available from the exemptions being granted (Tews, 2018). Since then, the RES scheme has been amended further and energy communities in Germany and in the EU are generally exempted from participating in tenders under certain conditions.

Another important trend in the development of energy communities in Germany is that they are increasingly scrutinised under the lens of social justice. On one hand, households involved with self-consumption (individually or collectively) benefited from an exemption or reduction of fees, taxes and levies, which are passed on to other consumers, thus increasing the energy price for them. On the other hand, the member structure of energy cooperatives in Germany pointed towards an underrepresentation of certain categories within the population, notably women-led and low-income households (Yildiz et al., 2015; Hanke and Guyet, 2023). Both of those factors point to a recurring criticism of energy communities as a niche and elitist concept, i.e., one that is open to members of the public who are already 'privileged'.

- Denmark

In Denmark, tax exemptions were offered to households investing in nearby renewable projects to produce and consume their own electricity (local residence criterion). Ownership was limited proportionally to their consumption level (consumption criterion). For example, the Middelgrunden wind farm, the world's largest offshore facility of its kind at the time it went into service in 2001, is owned by 10,000 Danish households acting jointly as a cooperative and by the local utility, with each owning a 50 per cent stake in the facility that supplies four per cent of Copenhagen's electricity. The local residence and consumption

criteria were progressively loosened and abolished to allow for scaling up turbine sizes and capital investments, that is, it allow for the deployment of more efficient technologies. This also means that a wider variety of projects involving citizen participation were able to get off the ground beyond local communities and cooperative models. Many energy communities are thus not necessarily headed up by citizens but instead involve citizen participation in commercial projects. This is the case with the aforementioned Middelgrunden wind park, whose members are spread out across Denmark. Still, to increase local acceptance, policymakers introduced an obligation in 2009 to offer local residents a 20 per cent stake in such projects.

Collective ownership is not limited to the electricity sector. In Denmark, 64 per cent of all households are supplied with district heating in 2016. Overall, 341 out of 407 district heating companies were consumer cooperatives, covering 36 per cent of demand for district heating, mostly in rural areas (Gorrono-Albizu et al., 2019). The remaining demand is almost exclusively met by municipal companies, with only four per cent of the market supplied by commercial actors. For district heating, the prohibition on profit-making (non-profit rule) made ownership of district heating comparatively less attractive for commercial actors.

2.3 Conclusion and recommendations

Energy community is an umbrella term referring to a collective form of organisation in the energy system, irrespective of the energy sector, activities or technologies deployed where they operate. In this context, it is important to distinguish energy communities from other actors, as well as from their business models or activities.

Energy community is a powerful and ambivalent notion. Its strength and weakness lie in its flexible interpretation and the diversity of cases it represents. It is important to recognise that depending on certain contextual factors, there may be a need to break down the concept of energy communities into subcategories. This chapter discussed how different meanings and forms of energy communities co-exist and/or compete with each other. We also presented the historic development path of energy communities in pioneering countries and presented concrete examples of (quasi) energy communities in Ukraine.

Recommendations

- Clarify the term ‘energy community’ in Ukraine, for example by distinguishing between purely municipal projects and other types of community projects (multi-stakeholder or purely citizen-based)
- Raise awareness by launching a public campaign and highlight existing cases
- Do not ignore the development of quasi energy communities or other community-based models, which do not meet EU criteria but still provide specific benefits and help Ukraine meet its policy goals
- Introduce a provision to enable citizens or municipalities to acquire shares in large commercial RES projects developed during the reconstruction phase to ensure multiple means to distribute benefits to the local community and local acceptance

Ressources: where to start

- Community energy – A practical guide to reclaiming power by the Community Power coalition (Link)
- Handbook Energy cooperatives: How to edited by wechange eG (Link)

3 What do energy communities do?

'If, at the minimum, thanks to the work of such an energy cooperative, the energy needs of at least a small portion of consumers will be satisfied, this will ease the strain on the energy system as a whole. And if it also makes it possible to solve the problems of someone nearby, then so much the better. Therefore, this form of energy community is important for the energy system and Ukraine as a whole.' Interview 14, representative of a LSG

'You know, we have points of inviolability, but we need to make cities of inviolability or communities of inviolability, that is, orient communities as much as possible towards maximum self-sufficiency. Of course, it is impossible to cover the energy needs of a power-hungry industrial hub using internal and local resources, but it is possible and necessary to supply at minimum the power needed to maintain critical infrastructure and guarantee a certain amount of energy is available in the event that power sources are out of service and not available via the transmission system.' Interview 15, energy expert

'If energy communities emerge, they will take part of the money generated by natural monopolies and entities affiliated with them on adjacent markets. Conversely, energy communities can definitely play a role in a decentralised energy system. They can make the energy supply more reliable, play a positive role for consumers and can become the basis for new business models.' Interview 13, legal expert

What you will find in this chapter

This chapter is aimed at all stakeholders. Here you will find an overview of what energy communities do, i.e., the goals they pursue, the benefits they deliver and the activities they undertake. We discuss which types have the most potential in the current context in Ukraine. We also provide examples of existing energy communities in Ukraine.

More specifically, you will find the following:

- For policymakers: how to operationalise benefits in a monitoring framework
- For energy communities: how to understand activities and subtype, examples of existing energy communities

After introducing the concept of energy communities in chapter 1, chapter 2 goes into greater detail. To understand energy communities, it is important to understand the goals they pursue, the benefits they offer, the potential drawbacks that come with them and how they operate.

3.1 Goals, potential benefits/drawbacks of energy communities

> *'[Local authorities] need to understand how important it is, how much it will help them save money and how much they can learn by interacting with energy communities.' Interview 3, representative of a LSG*
>
> *'In other words, this bolsters local self-government and helps bring local communities closer together, which is a good argument in favour of energy communities. Firstly, the money generated will not be concentrated in one place and will not go to the oligarchs who run large companies. Instead, it will be distributed proportionally among communities. And such decentralised cluster will, of course, be virtually impossible to destroy if the power grid is shut down.' Interview 17, representative from MinEnergo*

For energy communities to reach their potential, it is important to raise awareness about their goals, potential benefits and drawbacks among participants and other stakeholders. Lack of awareness is one of the main potential obstacles for their implementation, which is a point often mentioned by the people we interviewed.

Since they are already many resources available that explain the goals, benefits and drawbacks of energy communities, we will summarise and link them to the results of our field analysis as well as highlight their relevance for Ukraine more specifically.

3.1.1 Types of goals, benefits and drawbacks

Goals pursued by energy communities are often grouped into three categories:

- economic objectives: providing financial or economic benefits for the members of the community or the area where it operates
- environmental objectives: contributing to climate and environment protection
- social objectives: strengthening social cohesion in the community

To which the following categories are sometimes added:

- political objectives: shifting existing power balances and inequalities in the energy system
- objectives related to the energy system: becoming more independent from actors external to the community or contributing to improving the energy system's reliability

Bauwens et al. (2022), which reviewed definitions of energy communities in the scientific literature, show that energy communities are most commonly associated with environmental objectives first, economic ones second, political objectives and social objectives third, with objectives related to the energy system (autonomy, infrastructure) coming last. However they also note that there is a discrepancy between this result and empirical studies, which shows that energy communities prioritise social cohesion and economic development over environmental considerations.

Against this backdrop and as explained in subsection 2.1.2, it is important to distinguish between

- the goals of/for energy communities, i.e., whether the objectives of energy communities are defined internally or proscribed by other actors
- the level of impact to which the goals, benefits or drawbacks refer (individual/micro, community/meso, system/macro)
- the overarching objectives and subgoals, whereby a subgoal (e.g., implementing an RES project) can contribute to achieving multiple overarching objectives

This has important implications for policymakers if they want to promote the development of energy communities. To gain an understanding of which objectives energy communities pursue, what impact they have and how this can relate to overarching policy objectives, policymakers could develop a set of indicators and a matrix as part of a monitoring framework (also see subsection 5.3.3), transposing the EU enabling framework and the comparative study 'Best practices for energy communities in Germany and Poland' (dena, 2022a); for examples of a matrix and a policy tracker, see table 4 and table 9). This could assist in the creation of evidence-based policies.

3.1.2 Potential goals and benefits mentioned in the field analysis

In the Ukrainian context, we expect security of supply to rank particularly high among the objectives pursued, whereby security of supply can be seen as a political objective and/or as an objective related to the energy system. And it certainly appeared prominently both in the responses obtained during the interviews and in the survey results. A total of 81 per cent of respondents to our survey believe that energy communities can increase the resilience of Ukraine's energy system, whereas only nine per cent believe they cannot.

But our results also provide more nuanced insights. Results from our survey show that respondents and interviewees recognise that energy communities are multi-faceted, i.e., they can provide many diverse and important benefits as shown in Figure 2, with no overarching objectives clearly dominating the findings. Rather a more nuanced approach is beneficial as different subgoals within an objective can be ranked very differently. For example, on economic grounds, energy savings is ranked significantly higher than job creation. In general, we can still say with confidence that, as expected, energy security and independence rank high, along with cheaper energy. Environmental considerations, such as reducing local air pollution and reducing greenhouse gas emissions, rank lower, which is consistent with other empirical evidence mentioned above.

There is a small discrepancy between results showing which benefits energy communities can provide and the priority challenges that need to be addressed in the energy sector as illustrated in Figure 3. Here, local air pollution ranks higher and energy security slightly lower. Also, respondents state that energy communities can significantly contribute to the development of renewable energy in their community and in the country as a whole. Yet, the concentration of energy facilities in the hand of a few people, while still important, is relatively speaking seen as a lesser challenge. In any case, we contend that the development of energy communities would contribute both to the development of renewable energy and to a more diffuse and decentralised distribution of energy resources while also addressing other challenges that are deemed to be higher priority.

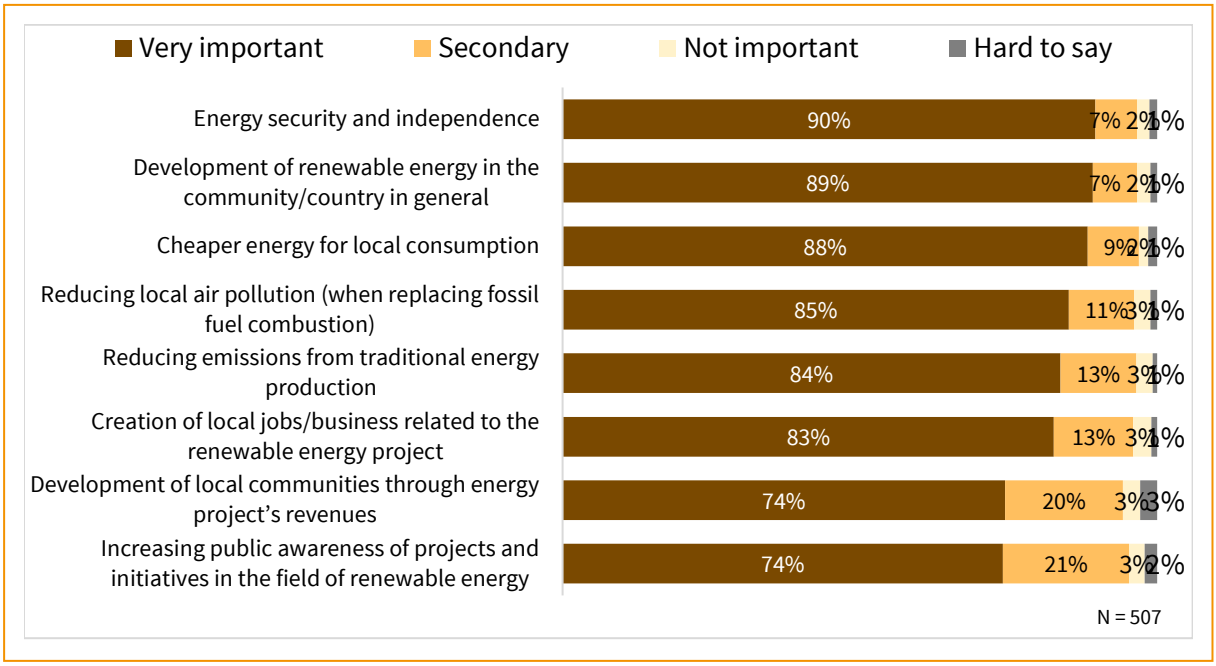


Figure 2 Survey results: Energy communities can provide many benefits. I'll read out a list of benefits, and you tell me whether this benefit is very important, of secondary importance or not important at all.

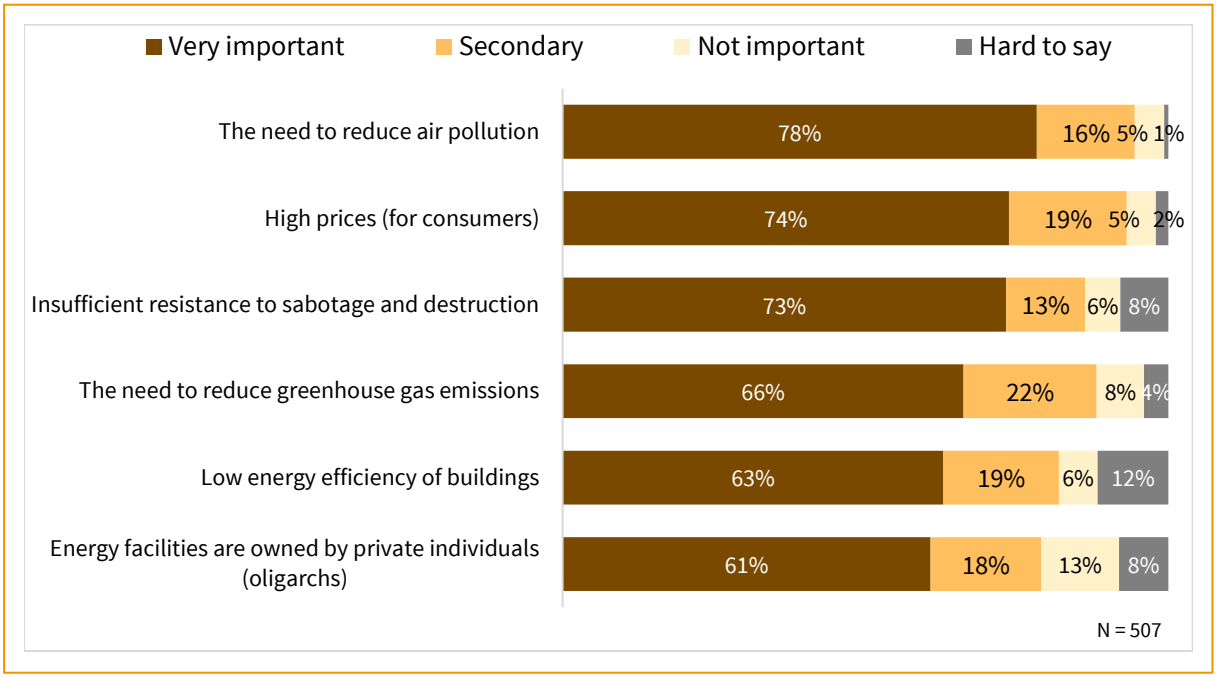


Figure 3 Survey results: Let's talk about energy, namely the production, distribution and consumption of energy for the power and heating sectors in Ukraine. I'll read out a list of problems and challenges faced by these sectors, and you will tell me whether that problem is a priority, a secondary issue or not important at all.

In the following, we will illustrate the potential benefits of energy communities with quotes from the interviews we conducted. First, we focus on energy dependence, which can be interpreted in two ways: security of supply (considerations related to the energy system – example 1) and independent from other market actors (political considerations – example 2).

- Energy independence

Example 1: Energy independence – resilience through decentralisation and guaranteed supply

> *'The main, negative aspect that made our energy sector so vulnerable is that it is very centralised. […] I think that these energy communities will be actively developing, that small-scale electricity generation will grow and that each city, in my opinion, will try to become energy independent. In other words, every community leader will try to provide energy resources for their community in their community and will therefore promote the development of small-scale energy installations.' Interview 4, representative of a LSG*

One of our key findings shows that the survey respondents prioritise the use of RES energy that is produced to supply communal and collective infrastructure. As mentioned above and as confirmed by Figure 4, there is a strong understanding that decentralised RESs and energy communities contribute to increased energy security and independence by covering the consumption of local critical infrastructures first.

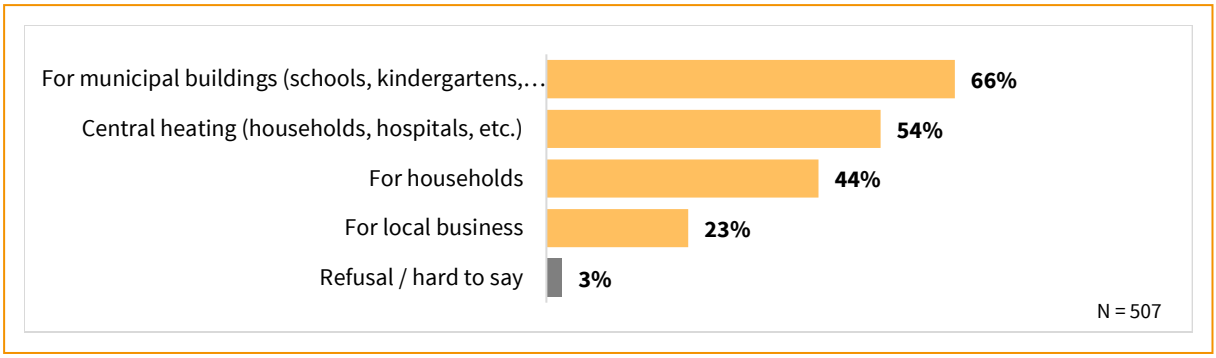


Figure 4 Survey results (multiple choice): Imagine that a RES plant is installed in your community. In which sector would it be best to deploy the energy it generates?

Example 2: Energy independence – Challenging the status quo (traditional actors, concentration of ownership) and promoting alternatives to consumers

This can take different forms or have different meanings. For some the development of energy communities means more choice and increased market competition as energy communities become alternative suppliers and grid operators. This could become increasingly relevant particularly in the context of reconstruction, as certain communities may decide they can or have to take on this role, such as, for example, if other actors (the government, traditional companies) do not prioritise them during reconstruction.

> *'We, as Ukrainian consumers, should have an interest in the development of energy communities, in more competition. And the regulator now, at long last, officially recognises municipal grid operators as one type of energy community.' Interview 20, representative from an NGO*

> *'The system is the way it is because of the laws in place. For example, some people write that if you are unhappy with your energy provider, you have the right to switch to another one. But how? What if there is no alternative? You have only one supplier. Who can I turn to for assistance? Who else can I buy power from? You have only one provider. You have a monopoly. In theory, I have the right to switch to another provider, at least that's what the law says. But there are no other companies for me to choose from. […] It's just like the Internet. In Ukraine, you can choose an Internet provider. Why don't I have the right to choose the energy supplier that suits me best? There is only one in the region.' Interview 8, representative of a LSG*

> ‘Am I free to choose my provider? Yes, I am. I will not be tied to DTEK. I will have two options. We all understand that competition is not just a bad thing; it is also good, quite good actually. Everyone understands that [in participating in energy communities] I have a part of, let's say, energy consumption that I don't ask any energy company for.’ Interview 2, *representative of a LSG*

> *‘Energy communities first emerged [in the United States] in the 1930s. […] These were initially small cooperatives, and they were not set up as profit-seeking or income-generating enterprises. They were set up because circumstances demanded that this step be taken because large companies did not want to lay lines to connect certain villages, realising that only five hundred people live there.’ Interview 1, representative of a LSG*

Besides energy independence, interviewees recognise the potential that energy communities can bring in terms of economic and social benefits to a local community. And this is particularly the case for communities facing specific challenges (war, coal transition) or with regards to more general challenges (lack of expertise and capacity). In the context of reconstruction, the development and involvement of energy communities can ensure that reconstruction can be done in a way that aligns with local interests.

Example 3: Economic benefits – Local value creation through jobs, revenues and taxes

> *‘If jobs are created, then people will stay in the community. If they stay in the community, they will earn money in the community, they will pay taxes there, and this will stay in the community. It all goes towards development, towards municipal infrastructure.’ Interview 7, representative of a LSG*

> *‘The main goal of the energy community is to build for the future. You see, the community will be able to properly distribute energy resources, save money and even earn cash. This saves the city money, which can then be spent on roads, landscaping, just about anything.’ Interview 9, representative of a LSG*

> *‘I believe that it is necessary to consider questions like this [local authorities initiating or supporting the creation of an energy community], taking into account the fact that the city will most likely be rebuilt from the ground up, that is, everything is destroyed there. And this is a great opportunity to create a completely new and different city using the latest new technologies. In terms of the energy and water supply, you need to look at how we would like the community to live, i.e., in a completely different way.’ Interview 2, representative of a LSG*

> *‘Given the current situation we face, maybe security [is the main factor for creating energy communities]. This would be the primary issue. But for the average Ukrainian consumer, the main thing is to make money. Of course, they have to understand that they will benefit from this if they sell at a fixed price and make a profit or generate energy for their own consumption. By then, the tariff will have risen and they will have saved money – and that is the number one priority.’ Interview 17, representative from MinEnergo*

“There are approximately 30 to 35 households that have installed solar panels. For us, as a community (hromada), this is good because we keep the profit from this. In other words, it costs us nothing. We don't have to invest any money ourselves. And the companies, organisations and households that have installed solar panels receive money for supplying electricity to the state and pay taxes. And we also receive some of this. Take, for example, 2023. Last year, we received about four hundred and eighty thousand hryvnias (over ten thousand euros) that went towards the municipal budget. This is great for us.’ Interview 5, representative of a LSG

Example 4: Social benefits – social cohesion, effective problem-solving and decision-making, democratic control and anti-corruption

‘It contributes to social cohesion within the community. This is possible when community residents have a common goal and when local governments show the residents that we have to join forces to work towards a shared goal, I think this is the most important thing. There are also the social considerations, like jobs creation, which also leads to social cohesion within the community.’ Interview 4, representative of a LSG

‘If, for example, there is a problem and several people work together to solve it, they will find a solution. The same is true for an energy community. If it starts a number of new projects, if it installs solar panels in certain areas, not to mention its other contributions in and around energy and power generation, I think it will have an impact going forward and will be a net positive for the energy sector, for the country, for everyone in general.’ Interview 5, representative of a LSG

‘Communities will gain more because they bring together different parties that need to be involved in this process in one way or another. Why? Because if, say, you build a partnership which includes all the people and organisations on which the fate of the project rests, the process will be easier and faster: That’s because there is a certain consistency and level of consensus. […} I know from my own experience that when you build partnerships with communities, especially ones that are highly motivated, and explain everything in detail, […], it reduces the time it takes to implement a project. The advantages of this approach include shorter project times, a clear understanding of who is doing what and being able to establish the conditions needed for free and open competition. All in all, the project is completed faster and more efficiently. That is the number one advantage.’ Interview 16, representative from an NGO

‘With regards to monitoring and control, it is better to have several different parties who can oversee the process, so that there is no negative impact, no risk of corruption, no other related negative outcomes.’ Interview 5, representative of a LSG

‘Decisions should be made by a community of sorts involving many players. Even then, as I understand it, any major decision should be made collectively. There should be some kind of collegial body that can make decisions and submit them to the management team. The co-owners can entrust this task [managing of installations]to the municipality and elected officials. There are many different options available here. I think that you need to approach each individual case separately and take a look at the situation. That said, there are many options available.’ Interview 10, representative of a LSG

3.1.3 Potential drawbacks

The potential drawbacks of energy communities are far less commonly discussed that their potential benefits. However, the existing literature and the results of our field analysis focus on three aspects. Those drawbacks refer mainly to how the development of energy communities impacts the macro level, i.e., society and the energy system. As a disclaimer, we would like to point out that the discussion of pros and cons sometimes refer not to energy communities directly but to the development of decentralised generation and self-consumption models (see for example Schill et al., (2019) on solar prosumage).

- Governability: One recurring argument against the development of energy communities and small-scale installations compared to having a few large actors and centralised capacities is that their development will contribute to the fragmentation of the market and system, thus hampering its governability.

> *'It is irrational to expect the state to [be responsible for the development of energy communities]. Because the state always gives rise to a monopoly, because it is easier for the state to regulate several large monopolists, there are fewer people to deal with, and fewer administrative costs.' Interview 12, representative from an NGO*

Even though this argument holds up to a certain extent, we would say that there's a paradigm shift in this regard. Fragmentation and decentralisation are increasingly perceived as a positive aspect. What may be lost in terms of governability is gained inter alia in terms of competition, resilience and transparency.

- Network and system contribution: While participants in energy communities may benefit from lower energy costs, the development of energy communities may increase system costs. In short, the development of small installations and flexibility options in a local area (compared to a wider area) translates into efficiency loss and the need for redundant generation capacities. Furthermore, and as discussed in subsection 2.2.2 regarding Germany, grid charges and levies may be calculated in a way which produces intended distributional effects, i.e., charges are distributed among fewer consumers and utilities suffer important revenue losses. However, we could argue here that this effect has been empirically demonstrated to be marginal so far. And in any case, it can be corrected for by adapting current price setting methodologies.
- Social justice and inclusion/energy justice: As indicated in subsection 2.2.2, despite the assumption that energy communities can contribute to social cohesion and reduce social inequalities, empirical evidence so far, at least in Germany, suggests the contrary. The typical membership base shows a low diversity and is quite elitist (Yildiz et al., 2015, Radtke and Ohlhorst, 2021). This is because certain social mechanisms unintentionally exclude certain social groups (Drewing and Glanz, 2020). There is a strong discrepancy between the potential energy communities can have to enhance different type of justice (procedural, distributional, recognitional) and energy democracy (Jenkins, 2019), and their effective contribution (Hanke and Guyet 2023). This discrepancy tends to be smaller, the larger the community is. Larger and more developed communities have more resources to dedicate to stakeholder engagement. This discrepancy could be corrected through policy instruments. If small and emerging communities can receive support to develop their projects, regardless of specific tools to engage broadly, they would already have more resources to include more broadly.

In conclusion, we can say that the potential drawbacks outlined above pertain to considerations relating to social and political aspects, as well as relating to the energy system. We can also say that those drawbacks should not be ignored, yet are not so significant that they tip the balance in favour of fundamentally questioning the logic of promoting of energy communities. All potential drawbacks can be addressed through adequate policy instruments and political willingness to disrupt the status quo to support the energy transition.

3.2 Areas of applications: activities and business models

> *'You know, each case should be taken separately. It's impossible to paint everyone with the same brush. Everything should be viewed on a case-by-case basis.' Interview 7, representative of a LSG*

> *'In any case, there is no such thing as a panacea, a pill to cure all diseases. The more options you have, the easier it is to choose the right solution.' Interview 1, representative of a LSG*

As described in subsection 2.1.2, energy communities exist in various forms, and they are not restricted to a particular activity, a specific sector or a specific technology. This section aims at further explore this topic by presenting different areas of applications and business models for energy communities. It refers to specific case studies, which are presented in the Annex and in section 3.3.

3.2.1 Activities

We present the typical activities which energy communities can undertake and what their potential is in the Ukrainian context:

- **Generation**: Use or ownership of generation plants, regardless of the technology, sector or application (power, heating, cooling). There can then be three uses for energy generated (feed it into the grid, sell it to energy suppliers or traders or customers, consume it within the community). Furthermore, in rural areas, a strong development push comes from waste heat from biomass plants and from the production of heating material from biowaste.

In regards to the current level of damage to the energy system, energy communities can play a pivotal role in restoring generation capacities by mobilising private capital. Current support conditions for RES generation have improved (see subsection 5.3.1). Collective investment in generation and attractive payment terms means that energy communities can easily turn a profit from their investment, which can then be reinvested in additional generation capacities, spent on developing activities in other areas or distributed among members.

- **Supply/sale**: Sale of energy (produced or bought) to customers as well as participating in specific market activities through aggregation, demand flexibility activities and trading

Besides feeding energy into the grid and selling it to the guaranteed buyer, we see less immediate potential for those activities. Energy communities usually, and specifically in the current context, seek to cover their own consumption first rather than supply energy to other customers. Furthermore, supplying and trading is associated with additional administrative costs. Provided those costs are lowered, purely citizens-based energy communities could however supply their local municipality. With a rising share of RESs, energy communities could play an increasingly important role in providing demand flexibility services to help balance the grid.

- **Consumption and sharing**: The energy produced is distributed and consumed among the community members. This is a key activity of energy communities and what is commonly assumed to be their main activity. In the current context, self-consumption improves local resilience. In particular, if municipalities are part of an energy community, sharing the energy could help maintain critical collective infrastructures.

- **Distribution**: Owning and operating distribution grids for electricity, heating and cooling or gas. With regards to generation, energy communities could play a pivotal role in restoring distribution infrastructures. In general, the role of energy communities as distribution system operators in the power sector is limited in many European countries, as it is in Ukraine. However, there is the potential to develop microgrids, which could be operated independently of the overall energy system to increase energy security. It is, however, different in the heating sector as heat is a local commodity, not easily transported over long distances. Therefore, in some countries, such as Denmark, ownership and operation of district heating networks by energy communities is more common as heat is a local commodity. In Ukraine, many municipal utilities are also involved in district heating. However, this sector is highly inefficient and requires regulatory attention. Third-party access policies will be critical to enable energy communities to be active in distribution. The building of district heating systems from scratch is a very capital-intensive undertaking with non-negligible risks. The capacity of the public sector often plays a crucial role or enables it in the first place to secure economically viable projects. The high risk associated with heat grid projects further increases the financing costs of projects. Therefore, heating communities need to have a sufficient equity basis to qualify for a bank loan. Therefore, shareholders need to contribute enough equity (20–50 per cent in the case of infrastructure projects). Other options are the issuance of subordinated loans at a prearranged interest rate, which can be offered to local stakeholders (citizens, SMEs or even public institutions).
- **Electromobility**: Providing car sharing or operating charging stations. This will not be of immediate relevance in Ukraine.
- **Energy services**: Offering other services to reduce or monitor energy consumption as well as additional services (flexibility, storage, grid) to their participants or to other communities and customers. Considering the lack of generation capacities, improving energy efficiency and optimising the use of energy are critical to improve independence. Energy communities can play a critical role, provided certain framework conditions are in place (smart meter roll-out, access to data). These types of energy services will also become increasingly important with the development of sector coupling.
- **Renovation**: Specific type of energy service, where energy communities provide services and advice to citizens to conduct home renovations. Like many other post-Soviet states, Ukraine has a high rate of homeownership. The housing situation however varies significantly among internally displaced people (IDP), returnees and non-displaced people. Furthermore, the sector is also well organised around homeowners' associations and construction and housing cooperatives. Therefore, Ukraine has excellent conditions in place to develop energy communities focused on providing services for citizen-led renovation. (see OSS Case 1 – OSS Asen in Asenovgrad, Bulgaria; Annex).
- **Other services**: Services related to the development of energy communities, such as campaigning, addressing energy poverty, seed capital, etc. As energy communities are not yet well developed and addressing social considerations is critical to reconstruction efforts, energy communities can play an instrumental role in providing services, leveraging synergies with the 'build back better' approach. (see Cases EC5, EC6, EC7 and EC8; Annex).

'We have another problem that may hinder the development of municipal energy communities. The smaller the community, the lower the income, and almost everyone there receives subsidies. To be quite frank, this is a very open question for me, and I do not have an answer today to how much the number of subsidised customers will increase when we switch to a full market tariff. And this is the next task. Municipal energy should be regulated. Anything of public interest should be regulated by the state. […] If we are talking about municipal energy, the city should take care of its consumers who are energy poor. And these are the programmes that we have talked about here more than once, about the need to have a reserve fund in communities, metal-plastic windows with the highest energy efficiency class, solar panels, light bulbs and so on. These local programmes are part of the local policy to overcome energy poverty.' Interview 20, representative from an NGO

'At the moment, we are focusing specifically on the prosuming model, that is, generation for own consumption, and we are trying to develop models that would first of all allow businesses to meet their own needs, or to meet basic social needs, that is, schools, kindergartens and hospitals. These two areas are our priority, because the first allows us to maintain economic stability.' Interview 18, representative of a LSG

'I don't know if it fits the definition of energy communities, but if the members of condominium associations finance the insulation of buildings, then this will probably be the most energy and climate-friendly activity of the energy community in Ukraine for a long time to come. If you look at the Energy Efficiency Fund's reports, building insulation cuts heat consumption by half.' Interview 11, representative from an NGO

Because of its importance in the development of energy communities and for Ukraine communities in becoming more resilient, we provide more detailed information on self-consumption and energy sharing.

Focus: Self-consumption and energy sharing

The desire to produce and consume the energy resulting from collective investment rather than consumer energy from the grid or sell energy produced derives from an economic arbitrage between

- the generation costs (levelised cost of electricity or energy, LCOE)
- the price of energy from the grid, which also includes grid fees, taxes and levies
- the price at which energy can be sold to the grid, which can include support schemes such as the green tariff
- the price at which you can sell to other customers, which also depends on additional administrative costs and requirements, e.g., for licensing, contracting, billing

Considering that the LCOE of RESs is less or equal to the costs of electricity from the grid (grid parity), it is generally more profitable for energy communities (and other actors) to produce power with RESs. Then, for organisations with limited expertise and organisational capacity, like energy communities, supplying other customers outside of the community comes at a non-negligible cost. Finally, also considering that the support schemes for RESs becomes less attractive as more of these installations are deployed, self-consumption progressively becomes more attractive. This also why Ukraine has introduced a net billing system (see subsection 5.3.1). This means that energy communities can feed in the surplus energy they generate and can draw it from the grid at another point in time at favourable conditions. It also means that

self-consumption is generally an attractive option. And while this is not an issue for individual prosumers, collective self-consumption within a community may require the use of the distribution grid. Once the public grid is used, all grid fees, taxes and levies apply, resulting in uncompetitive prices. This leads to an existing barrier for real energy sharing within the energy communities and a collective self-consumption of the electricity they produce. Consequently, the current proto-energy sharing concepts remain limited to very small properties behind the meter. In the residential sector a similar system emerged with tenant electricity models. Here, a more complex stakeholder situation is possible as the electricity produced can be marketed to different tenants directly. A reconfiguration of the meters is often needed, which reduces the profitability of the projects without creating any added value. All in all, it can be stated that the self-consumption starting from single buildings only slowly extended to multi-party houses but not to spatially linked buildings (if a private grid is not available, which is usually the case).

Therefore, in many countries, energy sharing, the distribution of energy within a community for self-consumption purposes in the immediate area, in the district and in a wider region is not established yet. It requires regulatory changes to make it de facto possible and attractive. Many associations and interest groups have been calling for exemptions for energy communities to enable self-consumption in more complex scenarios. To make it economically viable the cost structures need to be adjusted by either exempting self-consumed electricity within an energy community from certain taxes, levies and grid fees.

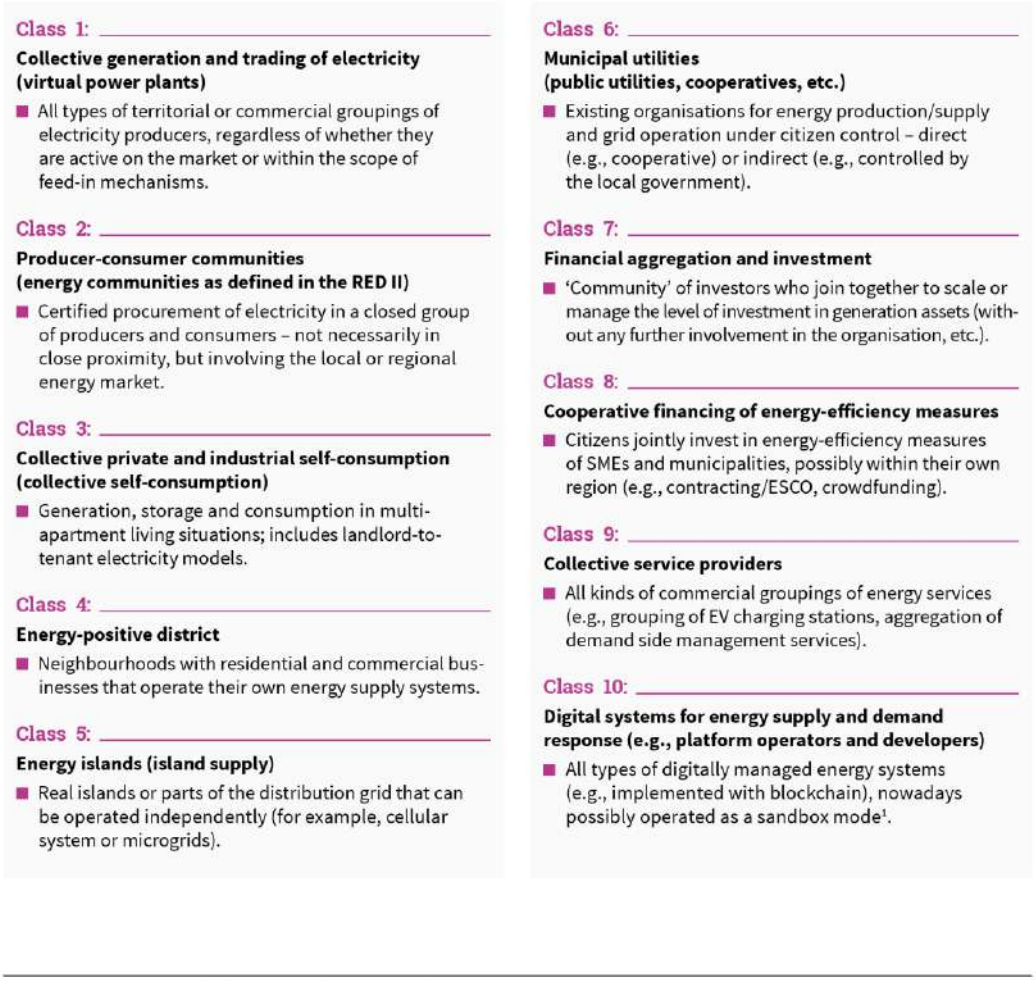
A few European countries or regions (Austria, Italy, Brussels, Denmark) have introduced energy sharing. In summer 2024, Germany published a draft law on the topic. The EU has introduced a definition and a right to energy sharing in the amendments to the Electricity Market Directive (EMD) in 2024. Under the amended law, energy sharing means self-consumption of active customers, which also includes energy communities.

It is important to note that energy sharing is an activity which can be conducted by energy communities on their own or by other actors on behalf of energy communities.

For more information on the legal and technical implementation of energy sharing, please refer to subsection 5.3.3 as well as dena (2024), Energy Communities Repository (2024c).

3.2.2 Business models and types of energy communities

As described in chapter 2, energy community is an umbrella term which encompasses many subtypes. There has been attempt to classify energy communities according to typical business models, combining the activities and actors involved (dena, 2022b). Those are summarised in Figure 5.



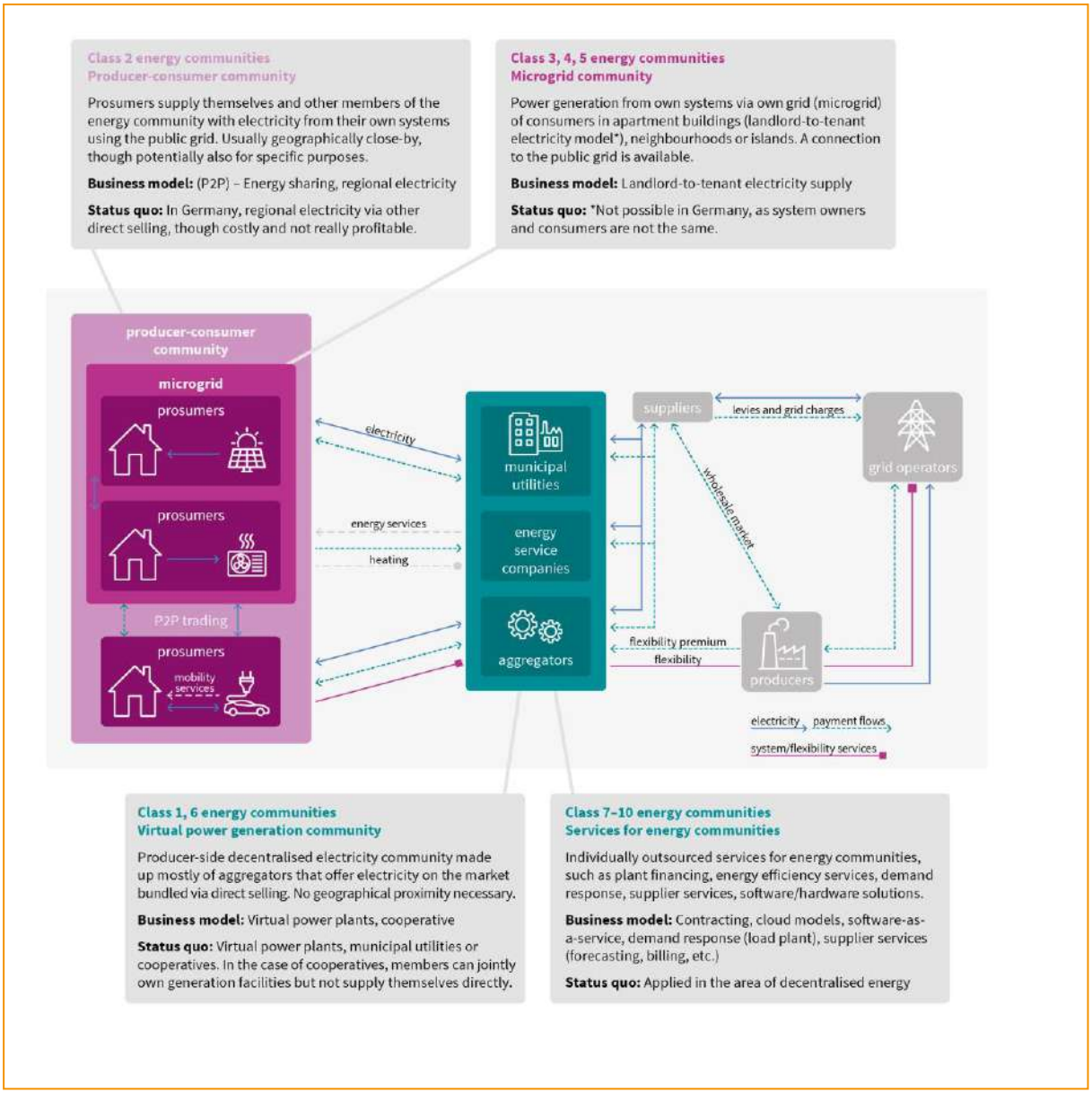


Figure 5 Classification of energy communities (Source: own illustration from dena (2022b) based on ERA-Net (2021) and Brown et al. (2020)

Under this classification, we can see the variety of forms energy communities can take. We would like to highlight the importance of class 5 (islands supply) in the context of war and reconstruction for creating points of invincibility and increasing resilience.

Other typologies also exist. For example, the REScoop 20-20-20 project (Rijpens et al., 2013, p.16–17) distinguishes between six models depending on the dynamic of creation, the governance and organisational structures (legal entity, type of members, geographical anchorage, distribution of power at the general assembly, number of employees and volunteers), which activities are performed, i.e., goods and services are provided, and how it is financed:

- Local group of citizens: typical grassroots initiative, small in size, with limited resources and a single stakeholder (only citizens)
- Regional/national energy communities: scaling up from the former business model or organisation created under the impulse of an outside party (e.g. NGO) more diverse activities and financial sources
- Fully-integrated energy communities: larger organisation with a long development history, potentially undertaking all activities, including distribution
- Network of energy communities: an energy community developing or incubating other local energy communities, which can benefit from economies of scale and other efficiency gains
- Multi-stakeholder governance model: every relevant stakeholders is united under a complex governance structure
- Non-energy-focused organisation: the energy community is a side project of an existing entity (e.g., farmers' cooperative, homeowners' association)

According to this typology, we can see great potential for the development of local groups of citizens, networks of energy communities and non-energy-focused organisations in the short term in Ukraine.

3.3 Examples of energy community projects in Ukraine

One of the main obstacles to the emergence of energy communities is the lack of awareness of and knowledge about them. Additionally, there is growing mistrust of cooperative models in many post-socialist countries. However, Ukraine has a strong and historic cooperative movement which predates the Soviet era. It has also demonstrated the strength, resilience and mobilisation of its communities and other civil society organisations during the war. While the development of energy communities in Ukraine holds great potential, the movement is just beginning to emerge.

In the following, we will be presenting examples of (quasi) energy communities that already exist in Ukraine and organisations that support energy communities in Ukraine.

Energy communities first developed as a by-product of agriculture. Ukraine has a strong agricultural sector and a large, untapped potential to develop biomass. Many agricultural cooperatives are also energy communities in that they recycle their biomass waste to produce energy for the cooperative or for others, often in the form of heating fuels.

Focus: The agricultural cooperative Oberig-Agro

Established in 2019 and located in the region of Mykolaiv (Domanivka hromada), the cooperative originally had four greenhouses which were destroyed following the Russian invasion. Now, its 25 members produce organic fruits and vegetables in 14 greenhouses. Their energy needs are covered by a 30 kW solar power plant. The cooperative also produces fuel briquettes from waste biomass to heat the greenhouse and sell it to heat three schools and a hospital in the community. The cooperative is bigger, stronger and more sustainable than before.

How did this happen? The cooperative has received support from a business trade association (the 'business network of rural women') as part of the CASE project and financial support from Oxfam GB to rebuild and scale-up its business with the installation of the 14 new greenhouses. The cooperative has also received technical assistance and a grant from the USAID (Economic Resilience Activity project) to power those greenhouses with renewable energy.

In addition, this cooperative was set up with the aim of providing families of soldiers with income as well as offer job opportunities to returning veterans in the rural community they come from. The cooperative provides economic and social benefits to its members.

This energy community can be classified as a non-energy-focused organisation and a traditional producer-consumer community.

Besides these cooperatives, many municipalities also own utility companies, e.g. to own and manage district heating networks (teplokomunenergo). Initiatives in the electric sector are emerging too. One of the most famous examples of an existing energy community in Ukraine is the 'Solar Town/City' cooperative in Slavutych, which has garnered attention both in and outside of Ukraine.

Focus: Solar Town (Сонячне Місто) in Slavutych

The idea of creating an energy cooperative which would install solar panels on the roofs of municipal buildings in Slavutych was initiated by citizens and an energy expert in the summer of 2018. This quickly gained support from the mayor and other local leaders, as the city had tried to install solar panels previously, at which time it failed to secure a grant. The consumer cooperative was registered in the same year and all three solar power plants were installed on municipal roofs by December 2019. In early 2020, it was granted a licence.

To finance the investment of around €175,000, the cooperative sold shares through a crowdfunding campaign in August 2019, prioritising Slavutych inhabitants first, after which it was then opened up to other investors. It raised around €145,000 in four months. To join the cooperative, potential members had to pay a fee of UAH 50 and purchase at least one share. (Each share was priced at UAH 15,000 (around €500) at that time.) Around 20 per cent of the shares are owned by the residents of Slavutych.

The project also benefits from revenues generated by feeding all the energy the cooperative produces into the grid and selling it under the Ukrainian feed-in tariff (valid until 2030). Under the business plan, the project developers project a 13 per cent ROI and amortisation of the initial investment within seven years. Yearly dividends are paid to the members and five per cent of profits are reinvested in sustainable energy projects in Slavutych, as agreed in the statutes. Revenues post-2030 will depend on future support schemes for RESs. This cooperative can be classified as a local group of citizens and a producer-consumer community.

The support of the municipality was key to the success of the cooperative. Besides political support, the city is represented by the Agency of Regional Development and rents the roofs, where the solar installations are located. Another key to the success of the project according to its manager is transparency, which fosters trust. To aid in these efforts, the website includes a Q&A as well as links to the business plan.

In our interviews, the people involved in the projects also described the challenges they encountered, such as the lack of incentives to sell the energy to the city or the obstacles that prevented this, the corruption of certain state governments or the challenge of designing effective voting procedures, including e-voting.

In 2020, the town received a prize for this project from the Ministry of Community and Territorial development in acknowledgement of sound practices in local self-government.

This example also has an important symbolic value. The town was built following the Chernobyl disaster to house displaced people, mostly workers from the nuclear plant, which makes Slavutych unique. Many inhabitants are electrical engineers and have knowledge that proved useful in carrying out a project like this.

There are other, more recent examples in several other cities. In Odessa, Lviv, Kyiv and Vinniytsia, solar panels have been installed on the roofs of condominium buildings to supply residents with power.

Focus: Supporting the installation of solar panels on residential buildings

- In Odesa, thanks to the financial support of investors, the roof of a nine-story building was retrofitted to install solar panels at a total cost of two million hryvnias (around €45,000). The electricity they generate is consumed by residents in the condominium building, with surplus power being fed into the grid under the applicable grid tariffs. Residents receive 25 per cent of the profits, while investors receive the rest. Residents were not required to put up any funds, yet they still receive benefits in the form of a secure supply of energy. In addition to this, they save money and receive a share of the profits generated by the solar panels. It is unclear whether the project was implemented by the homeowners' association, and thus an energy community, or by a commercial actor on behalf of a community. In any case, this model could have great potential with regards to the development of RESs and in terms of providing benefits to communities.
- In Vinnytsia, the city has announced the adoption of a programme financing 40 per cent of the cost of solar panels, which will be installed on high-rise buildings by condominium associations or management companies. The same programme will also partially reimburse the cost of equipment (batteries, inverters) purchased by socially vulnerable citizens. Finally, the city provides preferential loans out of the Municipal Investment Fund.
- The GreenDIM programme run by the energy efficiency fund covers up to 70 per cent of equipment and certification costs incurred by association of owners of multi-apartment buildings and housing and building cooperatives for the installation of solar plants and heat pumps.

Depending on how the project is implemented, i.e. who owns and manages the installations, these models could, strictly speaking, qualify as energy communities, as quasi energy communities or as activities for energy communities. In any case, they are energy communities in a broader sense and might qualify as a local group of citizens as well as a microgrid or producer-consumer community according to the classification presented in subsection 3.2.2.

Many of the people we interviewed highlighted the potential of such models as well as some of their current limitations.

'It is necessary to develop regulations that would make it possible to rent the roofs of apartment buildings. I know that in Germany, for example, there are many such models that work with their distribution systems, and accordingly, people are connected to a green tariff and have lower energy tariffs. These models work. The only thing is that they need to be adapted and, accordingly, the barriers between regional power companies and consumers have to be reduced.' Interview 18, representative from an NGO

'At the beginning, we had experience doing work like this in our community. It was an association of apartment buildings that was already ready to work on the project, for example. This involved the installation of solar panels on the roofs of buildings, and in return, the business would provide them with services not only related to the electricity generated and the installation of these solar panels, but also regarding maintenance of the roof structures. But we also see that at the state level, funding supports were uncertain and state authorities were unable to provide clear answers on whether these funds would be reinstituted. That's why this project was never implemented.' Interview 3, representative of a LSG

In addition to the examples of (quasi) energy communities, we also want to present initiatives and organisations which support the development of energy communities in Ukraine.

Focus: Citizen Energy for Ukraine project (2023–2024)

The project was implemented by a Ukrainian NGO (the Synergy Sustainable Development Agency) and a German cooperative (weChange eG), with the financial support of the German Federal Foreign Office. The project aims at supporting the development of renewable energy projects in communities in Ukraine by:

- raising awareness by organising public dialogues
- providing training for energy community leaders, capacity-building
- publishing studies on the potential of and barriers to energy communities as well as an analysis aimed at improving legislative and regulatory conditions
- developing educational resources in Ukrainian, such as a manual to create Renewable Energy Communities (REC) in Ukraine or information on how to design and install solar panels

Focus: Khmelnytskyi Energy Cluster

The Khmelnytskyi Energy Cluster is an NGO which fosters collaboration between regional and local actors located in the Khmelnystkyi oblast, the regional state government, the regional economic development agency and a group of municipalities, the regional distribution system operator, as well as the State Agency for Energy Efficiency and Energy Saving of Ukraine, the national bioenergy association, an environmental NGO, an ethical bank, a university, a local TV channel and an RES project development company. The cluster has implemented different types of projects. It contributed on the topic of energy to the regional economic development strategy and to other energy-related regional programmes. It supported the development of the sustainable energy development and climate action plan, capacity building for energy management and supported the grant application of a municipality. It organises an array of informational events and campaigns, implements educational projects and publishes analyses related to the energy transition and climate change. Finally, the cluster did work in preparation for implementation of RES projects alongside an RES project developer.

3.4 Conclusion and recommendations

In conclusion, energy communities can deliver many different types of benefits to their members, to the local area where they are located and to the energy system and society as a whole. Potential drawbacks can and should be addressed by policymakers in order not to negate the positive impact they have. In the Ukrainian context, the development of energy communities can contribute to the rebuilding of the energy and building sector, not only by restoring generation capacities and infrastructure, but also by reducing and shifting energy consumption as well as contributing to social cohesion and education to achieve greater acceptance and boost literacy around the topic of the energy transition. The latter should not be downplayed, as these benefits are unlikely to be delivered at all or to the same extent by other actors.

Recommendations

- Focus support provided to energy communities contributing to RES investment in electricity and power, as well as those contributing to energy efficiency through behavioural change and building renovation
- Recognise that many energy communities already exist in Ukraine and highlight them in a public campaign
- Recognise the importance of organisations already supporting the development of energy communities in Ukraine

Ressources: Where to start

- Report on REScoop business models by REScoop 20-20-20 (Link)
- Business model ('canva') developed by strategyzer AG (Link)
- Energy solidarity toolkit by the CEES project (Link)

4 Which actors are involved in the development of energy communities and what role do they play?

'The general premise is that there are many common problems and challenges. It is better to join forces to overcome the problems faster.' Interview 16, representative from an NGO

'It seems to me that each player in this market will have its own interests.' Interview 4, representative of a LSG

'There is a lot that can come in useful here. I think that everyone should have a part to play in this type of initiatives, including local and state authorities as well as the executive branch. So should every member of the public and every enterprise. The more powerful enterprises, whether big or small, operate according to the same set of standards. […] That's why you can't say that there is just one person doing it all. Everyone has a role to perform. Everyone brings something to the table.' Interview 5, representative of a LSG

What you will find in this chapter

This chapter is addressed to any stakeholders and aims at mapping relevant stakeholders and their role in the development of energy communities.

You will learn:

- Who are the typical participants of energy communities and how they participate
- What are the attitudes of citizens in Ukraine towards the development of energy communities
- Who are the stakeholders which can support the development of energy communities and how

Many actors are involved in the development of energy communities in different but complementary roles. This is also why energy communities, their advocates and enablers have a responsibility to ensuring effective stakeholder engagement.

4.1 Actors and their role(s)

It is important to distinguish between the type of actors and their roles. One type of actor, for example a municipality, can take on very different roles in relation to energy communities.

> *'Local authorities also create additional preferences for the development of this sector in their domain. And they are also players themselves. They have opportunities to take an active part in the development of these energy communities through public-private partnerships.' Interview 4, representative of a LSG*

Here is a list of some of the relevant stakeholders (in and outside of Ukraine) for the development of energy communities:

- Members of the local and regional authorities, i.e., the hromadas and the oblast, economic development agencies
- State authorities, including the executive, legislative and judicial branches, as well as state agencies, e.g., the Ministry for Energy (MinEnergo), the Ministry of Infrastructure, the Ministry of Communities and Territories Development, as well as other ministries (social policy, veteran affairs),
- the National Commission for State Regulation of Energy and Public Utilities (NEURC), the State Agency for Energy Savings and Energy Efficiency (SAEE), the State Agency for Reconstruction and Infrastructure Development
- Utilities at a municipal, regional and national level, including generation, distribution and transmission (komunenergo, oblenergo, DTEK, etc.) and their business associations
- Other companies not active in the energy sector, including farmers' cooperatives, homeowners' associations, IT companies, project developers, installation technicians, local SMEs
- Non-governmental and civil society organisations, e.g., environmental NGOs, consumer protection associations and other advocacy groups
- Financial institutions, e.g., traditional banks, ethical or economic development banks, private funds, pension funds, international financial institutions, crowdfunding platforms, the Multi-agency Donor Coordination Platform

There are multiple ways to classify these actors. Figure 6 illustrates our approach, distinguishing between participants, empowering actors and service providers. The two last categories can also be classified as energy community enablers.

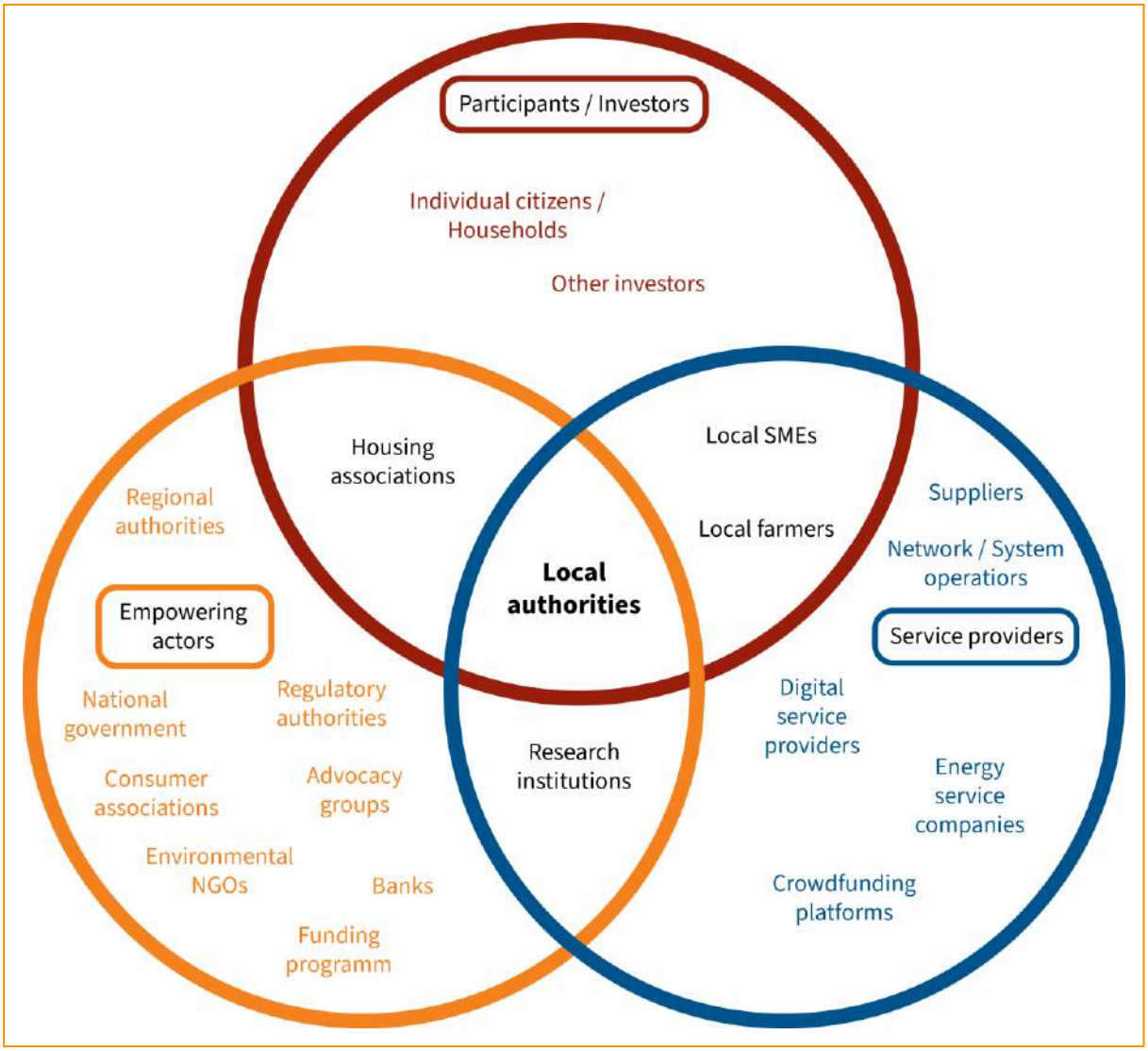


Figure 6 Diagram showing the actors involved in the development of energy communities and their role(s)

4.1.1 Participants

Please refer to subsection 2.1.2, which also explores this topic.

In theory, any individual or organisation can become a member in an energy community. A member is a natural or legal person who fulfils the conditions required to join an energy community, which often includes contributing capital by acquiring shares. However, depending on the legal form chosen, there might be some additional restrictions. Furthermore, the EU has introduced additional eligibility requirements (see subsection 5.3.2).

In case of housing associations, residents are the main or even sole participants.

> *'Well, first of all, in our city specifically, these are condominium associations. […]It is condominium associations, or the residents more specifically, who will be the ones interested in energy communities. To give one example, we offered to thermally modernise a building there, and everyone was on board with our proposal.' Interview 8, representative of a LSG*

Based on empirical evidence, however, energy communities are primarily made up of members of the individuals, which could include homeowners, local self-governments and businesses of any size. It is rarer for other types of actors to be members in energy communities.

> *'In addition, these communities are not just associations of citizens, so they might also include small businesses and local governments. It is the cooperation of different types of stakeholders, and each of them has to see and understand that they will benefit in some way.' Interview 17, representation from MinEnergo*

Energy communities can be based on the participation of a single type of actor or different types of actors. Regarding certain types of actors, such as municipalities or utilities, some of the people we interviewed stated that their participation might be helpful but would not be welcomed.

> *'Well, if we are talking about creating a separate community, then it is possible without the involvement of, for example, the local authorities themselves. It is totally possible. For example, if it is an association of several businesses that attract the other members, then this is not necessary. We would like the local authorities to be involved, but we understand that this is not always the case. Some people like it, others don't.' Interview 2, representative of a LSG*

> *'Utilities could potentially become the nuclei around which people unite. The problem with utilities is that they are very opaque and have a very bad reputation.' Interview 11, representative from an NGO*

Against this backdrop, certain actors could benefit from an image overhaul if they are able to regain the trust of other members of the energy community, first and foremost the public authorities. Furthermore, the potential risk of having local authorities as members is that it will make the governance of the community more dependent on political factors and hence more instable, such as during and around elections.

As previously described in subsection 2.1.2, membership can take the form of providing funds and taking an ownership stake, decision-making rights as well as other types of contributions, such as paid labour or voluntary work. In this regard, the results of our survey (Figure 7) show that a majority of people (two thirds of those surveyed) would become involved in setting up a local energy community. That said, this would primarily take the form of a time investment or by becoming involved in decision-making, but not in the form of providing capital. Interestingly, men are more likely to become involved, which supports empirical evidence on the typical characteristics of energy community members (Yildiz et al., 2015)

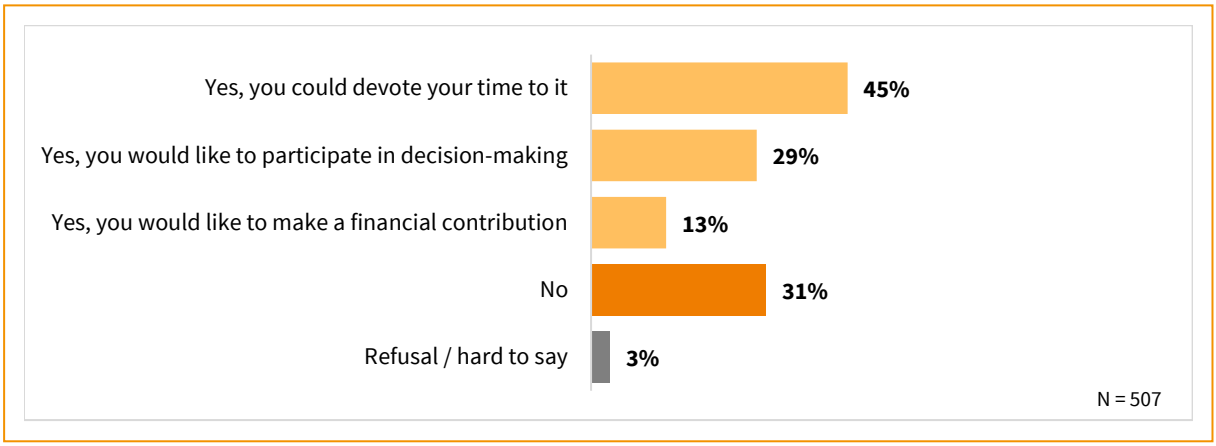


Figure 7 Survey results (multiple choice): If an energy community was created in your community, would you be willing to join the energy community?

On one hand, this is bad news, because energy communities often need equity to get off the ground in the first place and because unlocking private investment is crucial to meet the reconstruction needs. On the other hand, this is good news since many energy communities (or cooperatives) rely on the work of volunteers to get started, develop projects and run them. However, in a country with high unemployment, where post-war reintegration of the workforce and the retraining of workers from the energy sector (who previously were employed in the fossil fuel industry) will become a pressing issue, there is also an argument to be made, that energy communities are an effective way to provide employment and skills to many members of society.

Focus: Developing energy communities to reintegrate and retrain the workforce

> *'I don't see why in each of these energy communities there can't be at least one person, preferably three, who, firstly, is well versed in the subject, and secondly, is able to unite other people around him or her to make this community develop, and so on. We can potentially say, of course, that there are some veterans or others who could become such people. […] They have to be at least somewhat charismatic as a leader and technically and organisationally knowledgeable in all these energy communities and so on.' Interview 11, representative from an NGO*

Energy communities are organisations that usually lack the resources and capacities to grow and develop their projects. The Ukrainian government or international donors could institute a special programme (or mainstream this option in existing active labour market policies) to train, employ and remunerate individuals belonging to certain categories, such as veterans, IDPs or women, to help launch energy communities. This could be done either directly in a specific community or by creating an energy community providing services to other energy communities.

This programme could have positive effects for:

- individuals who can learn a vocation and benefit from an employment opportunity
- for communities (organisations) which could benefit from professional advice
- for communities (territories), where initiatives would be set up to maintain or build a community identity, especially in territories impacted by coal phase-out or where opportunities to help refugees and IDPs return are needed
- for the state in terms of reducing the cost of social policies

Alternatively, policymakers could allow individuals to receive their unemployment or other types of social benefits as a lump sum to set up or join a company or cooperative that could employ them or provide them with other types of benefits.

Regarding coal regions more specifically, the European Commission (2023a) has published a toolkit for enabling energy communities specifically targeted at transition regions.

In Figures 8 and 9, we show that a large majority of respondents would feel positive about the launch of energy communities in their area (83 per cent) and learn more about them (62 per cent). Interestingly, respondents from the north of Ukraine and from rural areas have a significantly more a very positive attitude towards the creation of energy communities (53 and 49 per cent, respectively). The share of respondents who do not want to learn more about energy communities is the same than those who do not want to learn more about RESs (approx. 25 per cent). As Figure 7 shows, around two thirds of respondents would be open to taking part in an energy community.

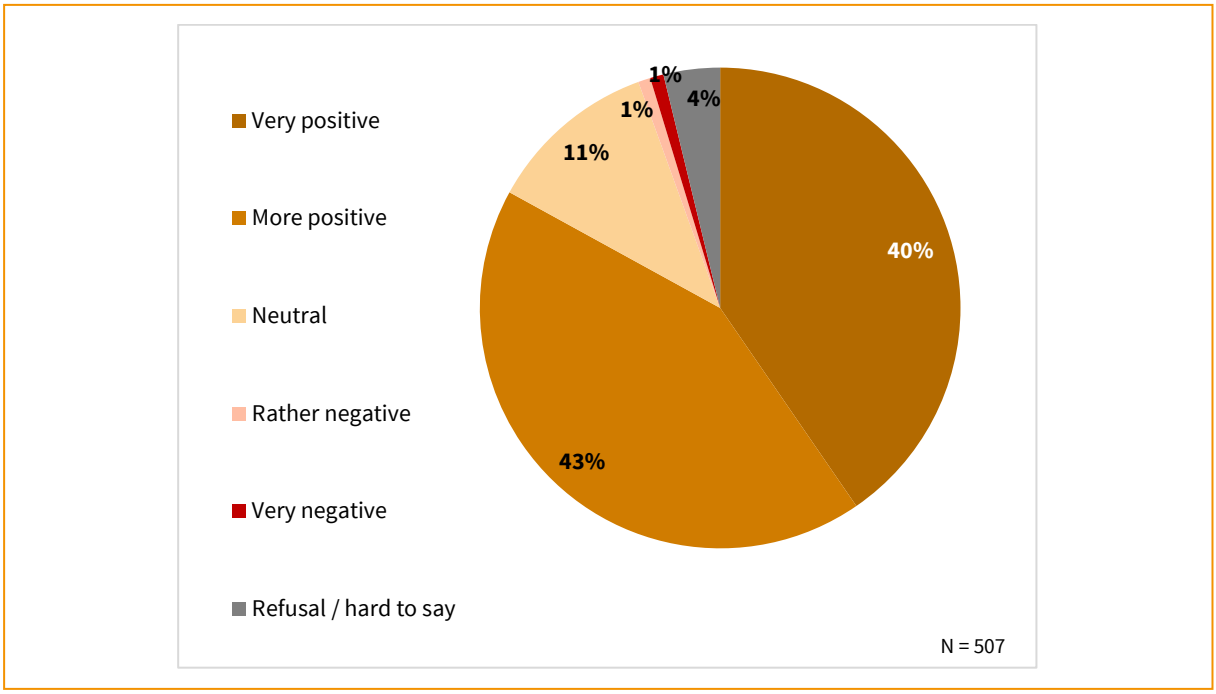


Figure 8 Survey results: If an energy community was set up in your community, how would you feel about this?

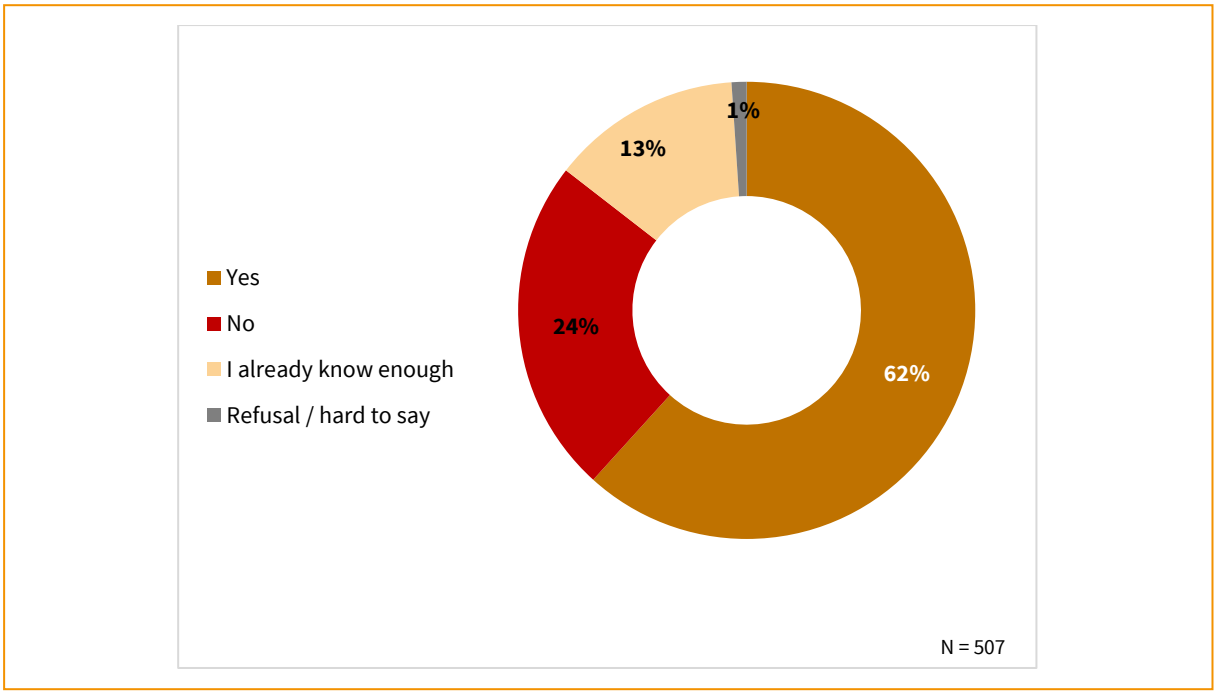


Figure 9 Survey results: Would you be interested in learning more about energy communities?

4.1.2 Empowering actors

Energy communities have limited expertise and capacities to develop RES projects and advocate for their needs. They are reliant on a range of other actors to help them. There are many different empowering actors and many different roles they can take on. Figure 10 provides a Venn diagram to illustrate how these actors can empower energy communities.

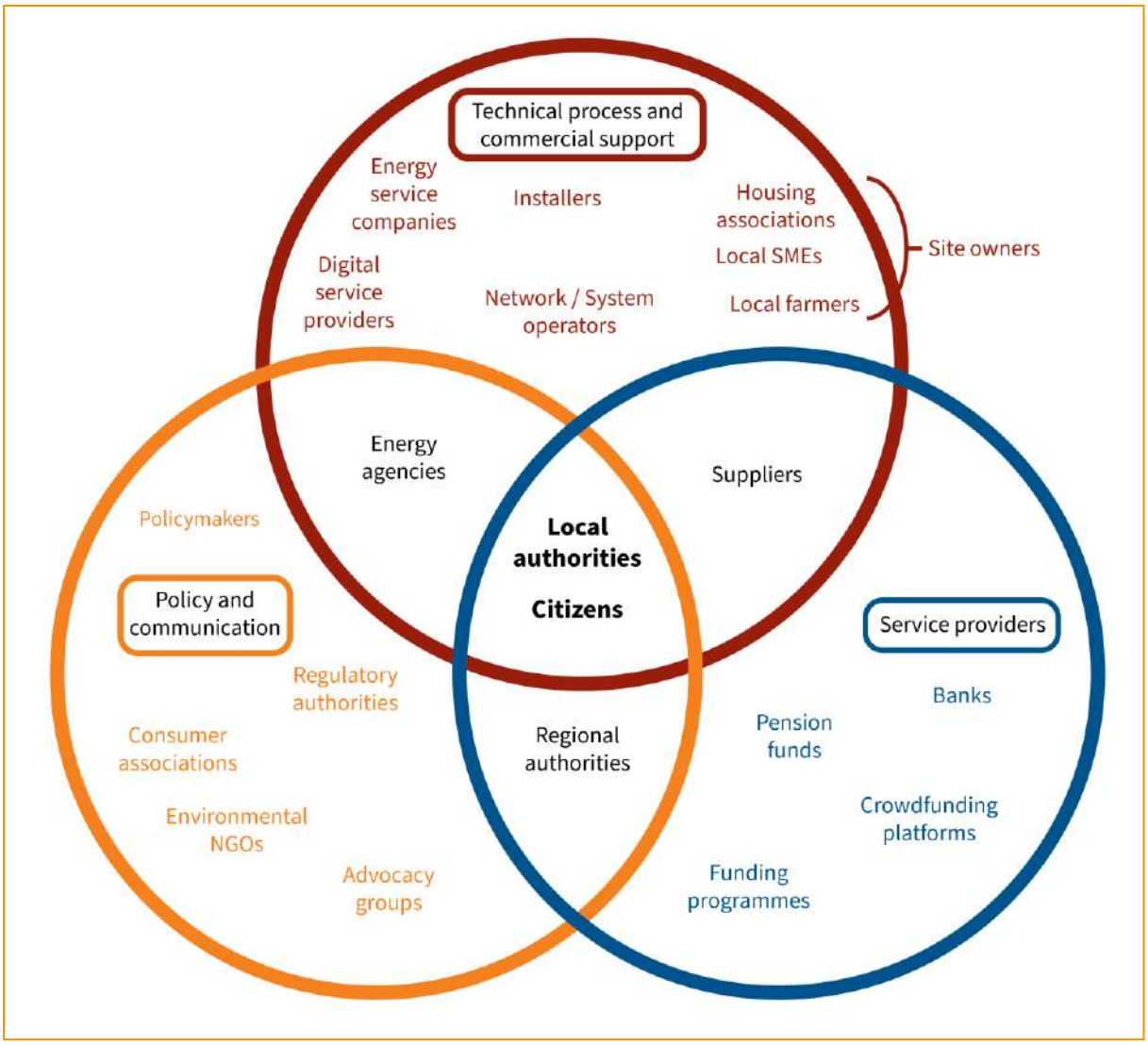


Figure 10 Diagram showing how actors can empower energy communities

First of all, policymakers, i.e., governments at a local, regional and national level, can support the development of energy communities by adopting strategies and targets for their development, adapting regulations and administrative processes, using public procurement to order specific studies or provide funding, launching public awareness campaigns and providing capacity support. Finally, public authorities can also introduce premiums for communities when certain services are put out to tender, one such example of this being the installation and management of RES installations on public buildings.

> *'These are local and regional authorities, the state, which should assist in every way possible in the implementation of energy communities and their activities, i.e., help solve issues that*

arise while these projects and ideas are being implemented. I think that this should include working together with the Association of Ukrainian Cities, the Association of Territorial Communities as well as other public communities that will help in finding donors to provide additional funds required to carry out these projects.' Interview 3, representative of a LSG

Our interviews with local authorities showed that they are aware of all the activities they can undertake to support the development of energy communities.

'People do not understand all these processes; they do not understand how it can be useful for their community. So I started with advocacy, with educating people, with disseminating related information and training assistants, perhaps managers in the community, who will continue to work on these issues. Because, unfortunately, today there is a real problem when it comes to these specialists.' Interview 3, representative of a LSG

'We are currently developing a community development strategy, in which we included a clause that stipulates that the community is for everyone.' Interview 6, representative of a LSG

'There may also be, for example, loans for members of the public, because not everyone can afford to install a 15, 20, 30, 40 kilowatt substation at home, which will cost ten, 20, 30 thousand dollars. And if, for example, you offer monthly instalment plans for certain items, I think that many more people would be interested.' Interview 5, representative of a LSG

'A lot depends on the specific situation. For example, in our community, we are ready to co-finance projects, including project that relates directly to solar power. Perhaps 50:50, 80:20, 90:10 are not viable options, but we are open to experiment and see how it goes in the future.' Interview 5, representative of a LSG

As such, state agencies have a pivotal role to play. The regulatory authorities produce more detailed rules based on legal provisions while also monitoring the development of energy communities (see subsection 5.3.3.) State energy agencies can also play a key role. A study published by the EnR (Oliveira et al., 2022), a voluntary network of national energy agencies, shows that they are involved to varying degrees with energy communities across Europe, though only to a very limited extent. For many, their contribution so far has been largely superficial and focused on communication and dissemination activities, e.g., producing promotional material, launching awareness raising campaigns, organising conferences and publishing information on regulatory and non-regulatory issues. In rarer cases, they take a more hands-on role by directly or indirectly managing funds which energy communities have access to (either tailored to them or where there are mainstreamed). They provide support during the permitting process, monitor the development of energy communities or provide assistance in the area of capacity building. By being involved in European projects, they often carry out pilot projects and share knowledge.

Another key type of empowering actor is non-governmental and civic organisations. Ukraine has a strong civil society. NGOs play a key role in putting the topic of energy community on the agenda and providing direct support to pilot projects (see subsection 3.3.). In other countries, they have been involved in the establishment of energy cooperatives.

Focus: NGOs and energy communities

In 1998, the German branch of Greenpeace launched an initiative called power shift. Consumers interested in switching suppliers to receive green electricity could register under this initiative. Owing to the success of the initiative, Greenpeace launched a call for bids to find an energy supplier which could fulfil a defined set of criteria. Acknowledging that there were no energy suppliers able to meet these criteria, Greenpeace Germany decided to establish the Greenpeace Energy cooperative the following year. Each founding member pledged to buy five shares priced at €55 each. The cooperative supplied energy nationwide and was supported by the Schwäbisch Hall municipal utility in certain domains (grid management, billing).

In 2021, the cooperative was renamed GreenPlanet Energy to mark its independence from Greenpeace, which helped to launch the cooperative but was not a member. As of 2024, GreenPlanet Energy has 200,000 customers for green electricity and gas and 40,000 cooperative members.

As described in Case EC 2 Hnuti DUHA, Annex, Friends of the Earth Czech Republic was also instrumental in creating the first Czech energy community under EU guidelines.

> *'The role of energy communities is highly dependent on legislation. It can play a major role depending on whether there is a group of organisations that can represent the interests of these associations.' Interview 11, representative from an NGO*

It is undeniable that Ukraine can count on a strong civil society, which will be instrumental to the reconstruction. It would be helpful if existing associations, which have no link to energy, can be mobilised to advance the energy transition as well.

> *'The thing I find most encouraging thing is that there are a large number of public associations. People who have come together to volunteer in various initiatives are commonly referred to as an army. They are clearly going through an identity crisis. If they are given the opportunity to develop in this way, then they can do so in theory.' Interview 11, representative of a LSG*

Finally, financial institutions are also key empowering actors for obvious reasons. We will explore this topic in greater detail in chapter 6.

4.1.3 Service providers

Service providers can support the development of energy communities. And in some cases, established or larger energy communities provide services to other smaller or newer energy communities. Energy communities need to rely on the expertise of other actors for advice or to delegate certain tasks such as project development, billing or maintenance.

> *'We need advice from individual specialists on, let's say, which strategy is better for a particular project.' Interview 9, representative of a LSG*

> *'If there is an energy company that […] checks all the processes during the procurement, installation and implementation phases of the project, this would be really fantastic.' Interview 5, representative of a LSG*

Ukraine has a strong IT sector that could also play an important role in supporting the development of energy communities, both as service providers and investors. For more information on how digital technologies can support the development of energy communities, please refer to the studies by dena (2022b) and the Energy Communities Repository (2023).

> *'There is another part of society that is also actually interested in energy communities to a certain extent who could invest in them, that being the IT sector. This includes IT firms that sell their products abroad and are interested in purchasing green electricity. They can invest in the deployment of renewable energy sources to obtain certificates and be able to specify in their contracts that they consume only green electricity. This is a competitive advantage for them.' Interview 11, representative from an NGO*

4.2 Stakeholder engagement and cooperation between actors

One of the strengths of energy communities is that they are a vehicle for cooperation between actors inside and outside of the community. Inside the community, it has the possibility to aggregate different type of stakeholders and citizens to solve common problems in a more or less democratic or consensual way.

> *'This provides more opportunities for coordination. In other words, everyone has their own interests. The municipality and local authorities have their own set of interests, as do community residents, as do small and medium-sized businesses. But we all understand that we are taking the same steps in terms of energy independence and have to do this.' Interview 1, representative of a LSG*

In this regard, many of the officials we interviewed from local self-governments stressed that multi-stakeholder and collegial decision-making should be a preferred way to implement energy communities in their territory.

> *'Strengthening trilateral relations between the government, the community and the business world can improve the results of the work we are doing.' Interview 6, representative of a LSG*

> *'If local authorities make decisions [about implementing an energy community], they act as a monopolist. How is this process democratic? How will decisions be made so that everyone is involved in the decision? This would then deliver benefits not just to one person or party, but to all stakeholders.' Interview 7, representative of a LSG*

But the lack of trust is one of the main issues facing former Soviet states, which can be found in local territories and between actors in general.

> *'What is the main obstacle? Unfortunately, people have learnt from history that it is bad to trust any attempt to bring people together, because sooner or later they will lose their money. And this has happened many times. So people are not inclined to come together in this way. I therefore think that if we are talking about an energy community, we need to somehow build this social capital among members of the public who are involved in it, so that they trust each other and can work towards a common goal.' Interview 10, representative of a LSG*

'People just don't trust each other, they don't trust the local government, which is why they are not willing to invest their money.' Interview 11, representative from an NGO

This is why community building activities are key to the success of energy communities, especially during the initial phase of the project.

4.3 Conclusion and recommendations

Stakeholders in Ukraine can capitalise on the positive perception of energy communities, the willingness to learn about them and participate in them from the general population, as shown in our survey results. Considering possible trust issues, community-building activities are crucial to the development of energy communities. Moreover, the development of energy communities is contingent on its support by other actors, in particular public authorities at all levels, as well as actors able to represent their interests and provide them with expertise and services (financial, operational).

Recommendations

- Create an organisation and/or an advocacy coalition to represent the interests of energy communities in policymaking
- Support the development of energy communities (or other actors) providing services to energy communities through reduced taxation and capacity-building by establishing specific programmes
- Support community-building activities aiming at creating energy communities, in particular if they address certain categories of the population (women, low-income households, veterans, IDPs and refugees)

Ressources: where to start

- Stakeholder Engagement guide published by the COMPILE project (Link)
- Inclusivity guide published by the SCCALE 20-30-50 project (Link)
- Comprehensive aspects of establishing energy communities in Ukraine: Financial, Technical, Legislative, Informational and Socio-Ecological Perspectives by the Citizen Energy in Ukraine project (Link)
- Handbook Creation of green energy communities in Ukraine by the Citizen Energy in Ukraine project (Link)

5 Policy framework for energy communities

'The state should have an interest in the establishment of energy communities. It drafts some of the rules that apply to everyone in this market and to energy communities as well, which are both clear and accessible.' Interview 4, representative of a LSG

'In general, of course, as with any initiative, it should most likely be the central government at the beginning. That's because we have thousands of different local governments, thousands of different opinions, and the concept will not gain traction without general feedback from the people. That is why the state, or rather the Ministry of Energy, should promote this concept so that the general public can learn more about it. After that, however, practical steps need to be taken by local governments and citizens.' Interview 17, representative from MinEnergo

'I continue to hope and believe that we have a strong state, and perhaps the main party responsible for [promoting the development of energy communities] should be the state, which will provide [market] access. To do this, it should make a number of legislative changes and then, if this market is in place, all the actors you specified in that bill, including local authorities and certain civic associations, will be able to take part. I think people will see that it is possible to do this and they will be very active in this field.' Interview 10, representative of a LSG

What you will find in this chapter

This chapter is aimed at policymakers and policy advocates for energy communities as it discusses regulatory and governance aspects. After reading this chapter, you should

- understand the spirit of the EU law: why it is necessary and justifiable to recognise, support and protect energy communities as unique actors in the legislation
- be aware of power dynamics and political risks associated with the development of energy communities and a dedicated policy framework, and how to prevent this be aware of the options available on how to transpose and flesh out this concept in Ukrainian legislation
- be able to develop detailed enabling measures
- be in a position where you are able to anticipate future legal changes

You will find in this chapter an overview on the EU policy framework for energy communities, the status quo regarding transposition efforts of Ukrainian policymakers as well as best practices from other countries on how to transpose EU regulations.

Disclaimer: The Ukrainian government is working on draft legislations at the time that this study was being finalised. This chapter has been revised to the best of our knowledge based on information provided in September 2024.

Many actors expect the state to play a leading role in the development of energy communities. Energy communities have been and can be set up in Ukraine under the current framework. However, without an appropriate policy framework, they will remain a niche phenomenon. Especially when one considers their potential contribution in relation to the rebuilding of energy assets and to the strengthening of social cohesion, urgent action is needed to support their development. We purposely chose to use the word 'policy' rather than 'regulatory framework' to underscore that the tools available to public authorities go well beyond the enacting of laws and regulations.

This support twill primarily take the form of adoption of a policy framework that is line with EU requirements and the leveraging of synergies with reconstruction efforts. With this in mind, we would like to start this chapter with a few preliminary remarks.

First, Ukrainian policymakers and policy advocates should be aware that supporting the development of energy communities through policies will be an iterative, long-term process. The experience of many EU countries so far has shown that there will be unintended consequences of policies as well as setbacks that occur. Therefore, policymakers as well as pioneering energy communities need to embrace a 'learning by doing' approach and build trust. Considering that the EU legislation on energy communities itself has been developed in two waves so far, and that the needs of energy communities may evolve as they become more established, policymakers need to account for monitoring, evaluation and revision cycles.

Second and as a result of this, this means that not every aspect can be addressed or addressed properly by policymakers in the short term. While we provide a full list of recommendations over the course of the chapter, we also opted to highlight three measures in the conclusion to prioritise efforts.

Third, Ukraine may be able to learn from other countries that are further along in the transposition of EU requirements. Knowledge transfer is key here. However, learning from others may not deliver the envisioned results, or this may not prove to be as important as one might have hoped. There are several reasons for this: (1) because, as we will show, Ukraine is not necessarily that far behind in this area; and (2) because the context is so specific that the transfer of certain best practices may not be as relevant. On the contrary, Ukraine may even have an opportunity to develop best practices and share them with other countries as equals.

Fourth, supporting the development of energy communities can be done within but also outside the EU framework. EU requirements unquestionably impose constraints but also act as a guide for national policymakers in certain areas. Still, policymakers are free to regulate or provide support to similar initiatives or actors that do not meet the EU criteria for energy communities but which could help Ukraine achieves its policy goals. Therefore, some of our policy recommendations may go beyond EU requirements.

This chapter first presents the reasons why policymakers need to pay close attention to energy communities from a policymaking perspective to enable them to further develop. It then provides an overview of the EU policy framework, distinguishing between the adoption of regulatory provisions and other supporting measures that the EU institutions have developed. This is followed by a brief introduction to the current situation as this relates to the Ukrainian policy framework. Finally, we explore the transposition process in-depth, providing recommendations in this area.

5.1 Why develop a policy framework specifically tailored to energy communities?

This section explains what the inherent reasons are for developing a policy framework adapted to the needs of energy communities in Ukraine, leaving aside the fact that there is a legal requirement for Ukraine to do so in order to join the EU. We will first focus on providing explanations, which can be found in the EU legislation, and then provide examples and reflections from secondary literature and our field analysis.

5.1.1 General justifications from the point of the view of EU policymakers

The relevant EU directives provide explanations on why the EU recognises energy communities as special actors requiring targeted support. Those are not legally binding provisions but instead explain the 'spirit' of the directive.

The first argument focuses on their specific characteristics that set them apart from other actors and also put them at a competitive disadvantage.

> *(71) […] The specific characteristics of local renewable energy communities in terms of size, ownership structure and the number of projects can hamper their competition on an equal footing with large-scale players, namely competitors with larger projects or portfolios. […] Measures to offset the disadvantages relating to the specific characteristics of local renewable energy […] include enabling renewable energy communities to operate in the energy system and easing their market integration.*
>
> *Directive 2018/2001 on the promotion of the use of energy from renewable sources*

> *(46) Citizen energy communities constitute a new type of entity due to their membership structure, governance requirements and purpose. They should be allowed to operate on the market on a level playing field without distorting competition, and the rights and obligations applicable to the other electricity undertakings on the market should be applied to citizen energy communities in a non-discriminatory and proportionate manner. […]*
>
> *Directive 2019/944 on common rules for the internal market for electricity*

> *(64) […] Energy communities, citizen-led initiatives and local authorities and energy agencies, while indispensable for delivering the Renovation Wave, face the same issues of lower administrative, financial and organisational capacities. This should not hamper the essential role of such entities and should be taken into account in the development of support and training programmes, with sufficient visibility and ease of access. Member States may actively support organisations with lower means with dedicated technical, financial and legal assistance.*
>
> *Directive 2024/1275 on the energy performance of buildings*

The EU, thus, argues that there is a need to 'level the playing field' or ensure that energy communities can compete 'on an equal footing'. This can be done by:

- clarifying when a different set of rules apply to energy communities (differentiation)
- reducing or simplifying certain standards or procedures for energy communities (simplification)

- providing alternative means of meeting the same obligations (flexibility)
- providing specific administrative, technical, organisational or financial support (capacity building)

In summary, the EU justifies public intervention by giving different actors the same chance of succeeding. Indirectly, the development of energy communities is also a means to an end for EU policymakers, that is, a means to achieve other policy priorities, such as increasing energy market competition.

The second argument is based on the additional benefits energy communities provide compared to other actors.

> *(118) […] Energy communities can help deliver long-term energy savings, particularly among households, and an increase in sustainable investments from citizens and small businesses. […]*
>
> *Directive 2023/955 on energy efficiency (EED)*

> *(43) […] Where they have been successfully operated such initiatives have delivered economic, social and environmental benefits to the community that go beyond the mere benefits derived from the provision of energy services. […]*
>
> *Directive 2019/944 on common rules for the internal market for electricity (EMD)*

> *(70) The participation of local citizens and local authorities in renewable energy projects through renewable energy communities has resulted in substantial added value in terms of local acceptance of renewable energy and access to additional private capital which results in local investment, more choice for consumers and greater participation by citizens in the energy transition. Such local involvement is all the more crucial in a context of increasing renewable energy capacity. Measures to allow renewable energy communities to compete on an equal footing with other producers also aim to increase the participation of local citizens in renewable energy projects and therefore increase acceptance of renewable energy.*
>
> *Directive 2018/2001 on the promotion of the use of energy from renewable sources (RED)*

Energy communities are able to unleash untapped potential, including in terms of saving energy, mobilising local private investment or developing innovation. The EU suggests that the benefits they provide should be measured in terms of outputs of their activities, but also in terms of outcomes, i.e., the specific effects resulting from the participative and collective decision-making process to deliver this output. Conversely and implicitly, it also means that other actors may not be able to untap this potential. Therefore, the EU justifies that the development of a policy framework for energy communities is needed to bring the energy transition to the next level.

Summarising these two arguments, the EU adopts a mixed and balanced approach. An adapted policy framework should address the needs of specific actors and the added value they provide while maintaining relevant obligations guaranteeing market functioning and the achievement of other policy goals.

Based on these two arguments, there is a third and final aspect to consider, which is not mentioned in legal texts but informs former and current policy debates. Since energy communities can benefit from specific provisions to enable them to compete on an equal footing, it is important to introduce monitoring and protective mechanisms: (1) to ensure that support remains proportionate and does not create new market dysfunctions; and (2) so that those favourable conditions are not abused by established actors. Otherwise, the whole point of providing an adapted policy framework becomes moot. Along with that, the effectiveness of policymaking can be called into question, as can the prospect of energy communities being able to deliver specific benefits. Thus, policymakers have a responsibility to ensure legal clarity and the proper enforcement of legal provisions.

Focus: Community washing and corporate capture

> *'It is beneficial for the residents themselves, because they receive these benefits. […] [The role of energy communities] is, first of all, that they are generators, they are sources of primary needs. That is, it will not be like today, I am very familiar with projects when they are implemented for the community, without the community.' Interview 6, representative of a LSG*

Transition processes are inherently marked by power struggles. In this context, two terms have emerged in policy and academic debates to describe the existential and political threat that traditional corporate actors can pose to (the development of) energy communities: community washing and corporate capture of energy communities.

- Community washing refers to marketing a corporate and commercial project as an energy community project, even though the community is not involved in any meaningful way, and control and decision-making is retained by the commercial actor. The goal is to make a purely commercial project more attractive and socially acceptable. (Cárdenas Álvarez et al., 2023)
- Corporate capture of energy communities is used similarly but also to describe influence strategies of private interests over policymaking. According to REScoop.eu, the European Federation of energy communities, this risk seems especially high regarding the creation and implementation of a regulatory framework for energy sharing.

It is important to make a clear distinction between regulatory provisions and supportive measures applicable to actors or to activities. There is a difference between projects implemented by energy communities and commercial projects implemented by corporate actors on behalf of citizens, a municipality or a community. Energy community policy advocates warn about the creation of loopholes, the adoption of vague regulatory provisions and the lack of enforcement in relation to certain regulatory provisions.

5.1.2 Examples of specific policy and governance challenges in Ukraine

Here, we want to complement the general arguments previously presented with concrete examples relating to the Ukrainian context. Aspects presented in this subsection can help in identifying current barriers to the development of energy communities, which can be addressed by legal, regulatory or administrative changes. Those aspects are quite coherent with regulatory barriers identified in various reports for energy communities in general or in Ukraine more specifically. In summary, policymakers need to pay attention to 1) the complexity and inconsistency of regulation, 2) how it can disproportionally impact small players such as energy communities and 3) the power dynamics and interdependency between energy communities and other actors (mainly network operators) in policymaking and in the implementation of projects.

Access to the network is a particularly telling example in this regard.

> *'I think that the main obstacle is the same one you will find in the majority of RES projects, namely access to the network. Because it is difficult to implement a completely autonomous project that does not depend on an external network, even from a technical point of view. There, most likely, the parameters of the power grid must be met, that being frequency, synchronisation and so on. Therefore, it is still necessary to have a physical connection with the external network. I did not study the ownership structure of distribution system operators in Ukraine, but our operators are mostly private businesses. Some of them have Russian ties, even some of them are nationalised.*

Most likely, the previous employers remained. That means the old mentality is still there, as in: we are at the centre of everything, and everyone else does the work for us. And, as such, it is difficult to do something if you have to work with this type of people. It's not even the people themselves; it's the attitude, where there is no desire to cooperate.' Interview 14, representative of a LSG

'If there were no problems with the connection, it would be super easy, because in fact, local distribution system operators, who are responsible for connecting small facilities, are monopolists, and they abuse their powers, meaning that you have to give a bribe to be heard, to do everything the way you want it done, or it is very expensive and time-consuming. There are many nuances.' Interview 16, representative from an NGO

First, energy community face concrete regulatory barriers due to the complexity or lack of legal provisions or policy incentives. Many interviewees observe how sharing or selling energy within a community to actors located in the area where it is produced, or selling to the grid, is not incentivised or downright impossible.

There is the concept of consumer cooperation, where we all join forces and grow something, but we grow it to meet our own needs and cannot sell it, for example, because the taxes are too high. And this is not interesting for commercial trade. That is why bioenergy companies often set up a consumer energy cooperative, grow raw materials and sell them not on behalf of a corporate entity, but on behalf of an individual, an entrepreneur, simply because there will be fewer taxes.' Interview 16, representative from an NGO

Let's use our kindergarten as an example. Ten years ago, we installed solar panels to heat the swimming pool. The kids don't go to the pool, but the kindergarten is running. But we cannot use the solar panels. That's why we are losing money. We could sell the surplus power to the system. But right now we do not operate them. We have the equipment, but we have zero sales. That is, the city did everything to implement energy-saving measures at the facility, an alternative heating system at this preschool, but the obstacles in the form of inconsistencies in the legal framework stopped us in our tracks. That is, we are getting some but not all of the potential benefits.' Interview 9, representative of a LSG

'Even if we installed very powerful panels and wanted to distribute energy among the main users, we would not be able to do it, because there is no mechanism in place for this. It is possible only within a specific industrial park or within one institution. If it is a hospital, it is possible, but if it is a hospital and a school, it is not.' Interview 6, representative of a LSG

'Well, there are examples today when, even in our city, condominium members say we will create a condominium association, not even realising that it is an energy community, and produce energy ourselves. We've bought solar panels, installed them on the roofs and have a surplus of electricity, but it is very difficult to sell it to the state in condominiums. If an individual there can generate power with solar panels rated at up to 30 kilowatts and finds it difficult to enter this market and sell to the state, it is almost impossible for condominiums. Here, a condominium can only distribute this electricity within its cooperative, let's say, in the condominium association, and it is almost impossible to enter the market and sell power, and we have already faced such situations.' Interview 10, representative of a LSG

'Solar City wanted to sell electricity to Slavutych, but it is almost impossible to do so. Although it is possible to sell electricity through an ESCO service, it is confusing and administratively regulated, so no one wants to do it. Perhaps the upcoming winter will see the resolution of institutional barriers to the development of distributed generation.' Interview11, representative from an NGO

The second aspect impeding the development of energy communities is the need to recognise that some regulatory aspects disproportionally impact them and put them at a disadvantage compared to other actors. The Energy Community Secretariat (2024, p.19) notes that energy communities face difficulties in gaining access to the electricity grid (in terms of costs, technical requirements and procedures) as 'so far, these requirements were tailored for large-scale utilities and often overlook the specific needs of smaller producers'. In regards to Ukraine, many interviewees made similar statements that current regulations are not adapted to small players. Even when a specific framework for small players has been put in place, stakeholders believe they have so far not stuck to their promises. By adding additional requirements, such as mandatory licensing, and restricting this legal framework to very specific cases (industrial parks), the legislation regulating small distribution systems and their operators failed to deliver a framework which could have been very useful in developing energy communities and the related activities they perform.

'What do you see as the energy community in Ukraine in terms of legislation? Well, first of all, it is well known that the literal translation of 'energy community' does not exist in the legislation at all. 'Small distribution system operator' fits very well here. […] Because, as I said, there are fewer consumers, less responsibility, less risk, and so on. Small distribution systems are poorly regulated, both in the main Law on the Electricity Market and in the bylaws. It is even worse in the codes, in the market rules, which were amended by the regulator last year in connection with the adoption of its draft law on the green transformation. They all provided for the expansion of these 'small distribution systems'. Only it specifies that they can be created only for industrial parks.' Interview 20, representative from an NGO

Furthermore, it is often not the content of the legislation itself but the quality of policymaking that impacts energy communities. Due to their unique characteristics, energy communities are less able to cope with regulatory uncertainties, which, in turn, pose increased investment risks and operational challenges. This aspect was confirmed during our interviews, as many described the regulation as 'complex', 'unreliable', 'inconsistent' or 'contradictory', and specifically mentioned the implementation of the 'Green Tariff' as an example of regulatory uncertainty[4] in Ukraine.

'Based on the research, we realised that there are many nuances in the legislation that make it difficult to set up an energy community, as there are many different legislative norms that often contradict each other. We have an initiative group that was formed as a result of a training seminar in Berlin for mentors focused on creating green energy communities. We are still in contact and try to move this topic forward. But when we and professional lawyers set out to figure out how to make it as easy as possible to communicate this to people, we found a lot of legislative hurdles.' Interview 18, representative from an NGO

[4] Detailed information on the difficulties in implementing the Green Tarriff in Ukraine is outside the scope of the study. If you want to learn more, you can find further information in the paper titled 'A solar Marshall plan for Ukraine' published by Berlin Economics (Bilek et al., 2024), under the auspices of Greenpeace Germany.

Finally, and as mentioned in the subsection above, a third aspect impeding the development of energy communities can be found in the asymmetry in power in relation to the incumbents. The risk of regulatory capture, real or not, and the existence of power struggles is well known, and sometimes translates into strong and antagonistic statements among the interviewed stakeholders.

> *'At the moment, our legislative norms are not clearly defined, which allows local energy supply companies to interpret the requirements and conditions as they see fit.' Interview 19, representative of a LSG*

> *'But on the other hand, we all see that our energy system, our energy market, is highly regulated, and probably not by the state itself, but by those electricity suppliers who are currently supplying electricity to the public. It is, roughly speaking, a kind of state within a state, which has its own regulations separate from the ones enacted by the state. It has its own permits that regulate the process of energy production and distribution. That is why I think they are trying their best to prevent other players from entering this market. That's why I think that we have communities that can organise themselves, they are competitors to some extent, and everything is done to keep competitors out of this market. I think that only the state can somehow help ensure that energy communities can legally join this market and create not only competition for these 'behemoths, so to speak, but also increase the energy independence of the state […] . But we need to make this market a bit more deregulated. I won't even say denationalization of power, because there is probably a small share of the state itself in this market, a very large share of oligarchs, and so on.' Interview 11, representative of a LSG*

In this regard, it seems that some stakeholders do not have a lot of faith in public authorities having an interest or the capacity to increase the number and diversity of actors in the energy system, and developing and enforcing provisions supporting that goal:

> *'There were problems in the energy sector even before the full-scale war began, significant problems because debts had been accumulated by various state-owned companies, because the strategies set out by the state are often not implemented. They are simply announced for populist reasons and everything stops there. We therefore have monopolies that have a negative impact on the sector. We have many problems that we inherited. In addition, we have new problems – the destruction of generation capacity, in particular balancing generation […].' Interview 16, representative from an NGO*

> *'In the energy sector, we still experience abusive practices on the energy markets. It is clear why, namely because prices are being manipulated all the time. I talk to various small operators of the same biogas plants that produce a product from biomass, sell it or process it into electricity which they go on to sell under a green tariff. And they complain that it's hard for them because they are small and the volumes of power they sell are affected by small moves in the price, which are chased back and forth, and they suffer significant losses, constant price fluctuations, and price fluctuation dynamics. Those who, of course, have more capacity and experience have their own companies within the holding, where they can collude and manipulate the price. The regulator does not really tackle this issue in a timely manner. And there is a chain reaction. Market players do not want to change their practices in any radical way. The regulator does not want to make changes or invent something new altogether before a new*

market model is rolled out. And who suffers from this? Small existing market players and potential market players. And when we talk about energy communities, this is the largest share of these potential players. Unfortunately, I don't see them being allowed to compete on a level of playing field with the existing players in the near future. Again, this is additional work for the regulator.' Interview 20, representative from an NGO

To correct potential power asymmetries, some interviewees rightly point towards the creation of an advocacy structure (also see subsection 4.1.2.)

5.1.3 Conclusion and recommendations

The aim of this section was to answer the question: why is there a need to develop a policy framework specific to energy communities? The argument we present rests on three pillars: 1) reducing their disadvantages compared to established actors while 2) highlighting and leveraging their benefits, as well as 3) protecting energy communities and their policy framework against influence, capture and crowding out strategies by incumbents. In this regard, policymakers need to pay attention to 1) the existence of concrete regulatory barriers, 2) the disproportionate impact of certain regulatory aspects on energy communities and 3) the existence of power struggles with incumbents.

In summary, policymakers and other public authorities (e.g., NEURC) have a responsibility to develop a clear policy framework adapted to energy communities to correct an unfair and detrimental situation, hindering the effective achievement of policy objectives. Policymakers must clearly distinguish between provisions applicable to an energy community as a specific actor from those applicable to them when undertaking certain activities, which in some cases can be adapted. They need to change the rules of the game. And in so doing, they change the power dynamics between market players.

Consequently, it is very important to understand that the responsibility of public authorities does not stop at purely legal and regulatory aspects but also includes shaping a new governance structure. Considering the asymmetries between energy communities and other actors, both in terms of market competition and in terms of resources available for advocacy, public authorities should take on a proactive and protective role. They should be aware of influence and manipulation tactics employed by incumbents during and after a policy framework is created. Being able to manage political interests and any potential backlash, being receptive to the needs and ensuring accessible are all necessary conditions. This aspect may also be scrutinised by EU institutions and international partners.

5.2 Overview of the EU policy framework for energy communities

In the mid-2010s, EU policymakers recognised the importance of energy communities in advancing the energy transition but also the wide variety of forms they take across Europe and the general difficulties they faced in developing in many countries. Consequently, in the late 2010s the EU adopted provisions clarifying what distinguishes energy communities from other actors, as well as which regulatory provisions are applicable to them or should be adapted to enable their development, which can be regulatory and non-regulatory in nature.

In the following subsections, we present the EU policy framework, but we also show that the EU has been practising what it preaches to Member States. Since the legislative breakthrough of the Clean Energy Package, the EU has shown continuous support to the development of energy communities by updating the regulatory framework, as well as by creating an EU-wide enabling framework.

5.2.1 The EU regulatory framework

The EU has adopted regulatory provisions for energy communities in two waves or generations as displayed in Figure 11. The core provisions of the first generation were retained while others were introduced.

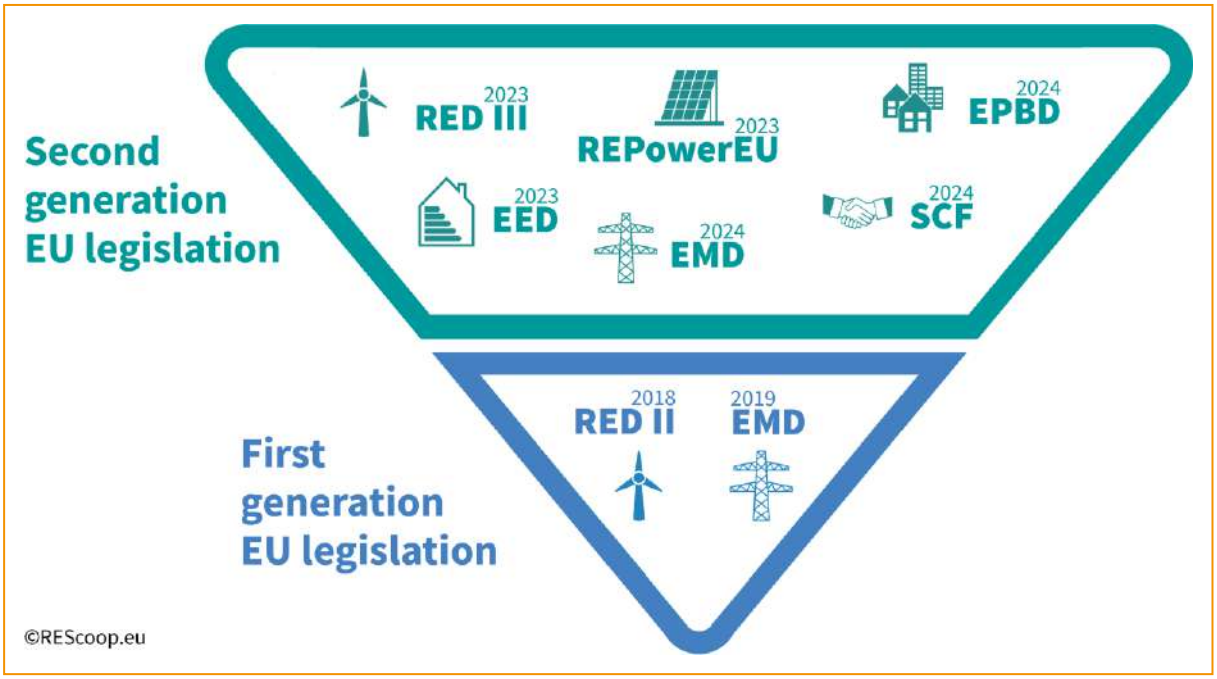


Figure 11: Overview of EU legislation on energy communities (own illustration, adapted from REScoop.eu)

The first generation of EU legislation laid the groundwork by introducing articles specific to energy communities and by identifying their specific characteristics and role in many energy-related activities. The Renewable Energy Directive (RED, Directive 2018/2001) focused on RES production and use and introduced the definition of renewable energy communities (RECs). While participation in the electricity sector is the focus of the Electricity Market Directive (EMD, Directive 2019/944), which introduces the concept of citizen energy community (CEC). It also includes a reporting framework to monitor the state of planning and implementation in EU countries. In this context, the European Commission underscored that many EU countries failed to provide details on supportive measures for RECs in its EU-wide assessment of the draft updated national energy and climate plans (NECPs), meaning that EU countries either have a low awareness of reporting requirements or have not sufficiently implemented relevant provisions (European Commission, 2023b).

In contrast, the second generation reaps the seeds sowed by the first generation of legislation. No new definitions or articles relating specifically to energy communities were introduced. The logic is to remind Member States to consider the potential contribution, specific needs and added value of energy communities at all times during the transposition of new provisions into national law. Energy communities are thus tied to many aspects prioritised under the Green Deal, such as the development of offshore wind, the introduction of renewables acceleration areas, the decarbonisation of the building as well as the heating and cooling sectors (through renewables and energy efficiency), the development of district heating or the fight against energy poverty. Similarly to the first wave of laws, the second generation of EU legislation acknowledges what a limited number of energy communities in a few countries are already doing to disseminate those approaches across Europe.

In short, the first generation supports the emergence of energy communities while the second generation mainstreams and broadens their scope. We will explore specific provisions in further detail in subsection 5.3.3.

5.2.2 The EU's support framework

The EU did not stop at supporting the development of energy communities by adopting legislation and monitoring its implementation. The Commission, in particular, managed to create its own EU-wide enabling support framework, complementing what Member States are doing or expected to do. We summarise this EU promotional environment under four aspects:

- improving and sharing (policy) knowledge across Europe,
- building on synergies with other policy topics and networks,
- providing assistance to energy communities,
- backing up a supportive network of advocates and enablers.

The following subsection uses examples to illustrate those aspects, with the dual aim of highlighting initiatives available to Ukraine stakeholders and identifying practices, that could be reproduced at other level of governments (national, regional, local) in Ukraine.

- **Creating specific EU-wide initiatives**

The European Commission has launched and funded several EU-wide initiatives specific to the development of energy communities or citizen-led projects. These initiatives are often coordinated by European stakeholders representing the interests of energy cooperatives along with local and regional authorities on behalf of the Commission. Therefore, they aim primarily at providing technical assistance to communities, building and maintaining a supportive network at EU level as well as improving policy knowledge. Indeed, they provide feedback to EU policymakers to further adapt legislation at EU level or provide additional guidance to Member States to address regulatory barriers.

These initiatives are relevant on three grounds for Ukraine. First, because they are a great place to gain initial access to resources available to all stakeholders. Second, because emerging and existing energy communities in Ukraine can apply for assistance under some of them. Third, because it could inspire public authorities to launch similar initiatives, managed by a consortium of actors or by a state agency.

Focus: EU initiatives supporting the development of energy communities

- Energy Communities Repository and the Rural Energy Communities Advisory Hub: During their two years in existence (2022-2024), both initiatives collected data and provided insights from policy, case studies and best practices. They also provided technical assistance to selected urban and rural communities. Although the projects are not running anymore, their websites and resources are still available and a great starting point for whomever wants a quick introduction to energy communities in Europe.
- European Energy Communities Facility: Launched in September 2024 and expected to run until 2027, the facility is the follow-up to both aforementioned initiatives. With a budget of over €10 million, it will provide direct support to emerging or existing energy communities. It will help provide technical assistance and capacity-building, e.g., by developing business plans and providing training as well as financial assistance (up to €7 million). It will rely on a network of national experts acting as middlemen and first line support to initiatives that apply. The first call for grant support is expected in 2025. The programme will be opened to Ukrainian beneficiaries.
- Support Service for Citizen-Led Renovation: Launched in April 2023, this initiative provides assistance and information to selected emerging or existing energy communities to engage citizens and provide services to them to renovate buildings. It provides an exchange and networking platform and several knowledge transfer formats. The resources could be particularly relevant for homeowners' associations in Ukraine.

- **Mainstreaming energy communities in existing public funds**

It is certainly useful to develop initiatives targeted to energy communities. However, it also important that energy community enablers and energy communities receive support through existing funds.

First, through its various funding programmes, the EU has directly financed many projects aimed at implementing pilot projects, developing services or building up knowledge on and for energy communities. It launches calls focused on specific aspects, such as providing access to capital, fighting energy poverty, accelerating energy-efficiency and renovation measures, setting-up one-stop shops or creating national coalitions in EU countries with less experience in energy community development. Energy communities are one of many applicants eligible. The lion's share is managed under the LIFE programme, the funding instrument for environment and climate action. As Ukraine has joined through a bilaterally negotiated association agreement in June 2022, Ukrainian organisations can submit proposals for any calls or calls targeting Ukraine specifically.

Second, the EU allocates part of its budget to national and regional authorities as part of energy and climate policy but also policies aimed at reducing economic disparities between Member States or specific regions. Thus, EU funds trickle down to support reforms and investment priorities determined by public authorities. Energy community advocates at EU level have assessed whether those EU public authorities use EU funds at their disposal to promote the development of energy communities. In summary, public funds are not yet leverage enough to promote the development of energy communities in the EU. Energy communities are barely mentioned in reforms and funding priorities announced by EU countries, and when they are, they are often not targeted specifically but addressed through broader policy objectives (e.g., promoting RESs). In this regard, there are certain parallels that can be drawn with the Ukrainian plan, which describes the reforms and investment priorities that will be funded by the EU-Ukraine facility. While some measures will be relevant for energy communities, they are not mentioned anywhere, with the exception of homeowners' associations for the purpose of building renovation.

Focus: Best practices on mainstreaming energy communities in existing funding programmes

- Spain's recovery and resilience fund channels €100 million into the deployment of energy communities within the dedicated national programme. Funds are transferred to and managed by regional authorities. Around half of the programmes for regional economic development include the establishment of dedicated funding instruments targeting energy communities or financial support for energy communities through RES support schemes.
- Czechia has developed a specific programme for community energy, which will receive around 1.5 per cent of the total funds allocated under the modernisation fund. Furthermore, energy communities can apply for funds under the programme for renewable energy sources and the modernisation of heating systems under the same fund. Under the Recovery and Resilience fund, the Czech government also plans to support the development of energy communities, such as by introducing one-stop shops (OSS) for energy communities and energy-efficient renovations and financing a pilot programme for the establishment of 40 energy communities with a budget of around €4 million.
- In Italy, many regions have launched calls for interest to finance techno-economic feasibility studies for the creation of RECs or cover legal establishment expenses.
- By using funds from the recovery and resilience funds, the Lithuanian Energy Agency has published a call for funding community renewable projects, for which 45 per cent of project installation costs are covered. The REpowerEU chapter also includes a planned funding call with a budget of €78.5 million to support energy communities that tackle energy poverty.

These are relevant on several grounds for Ukraine. First, because Ukrainian stakeholders can already apply to some of those EU funds (e.g., LiFE) or may be able to do so in future. Second, Ukraine will receive a lot of funds from international donors. In this regard, public authorities (national, regional, local) have a role in promoting the development of energy communities through public funds, by including them as recipients in existing programmes, developing special funding targets for them within those programmes or using those funds to develop specific funding programmes.

The development of energy communities is associated with a broad range of environmental, economic and social benefits. Thus, reaping those benefits can serve multiple policy areas and their goals. This is why empowering and funding energy communities can be an effective way to spend public funds as multiple policy objectives can be addressed at once.

- **Connecting energy communities to other policy areas and networks**

The EU Commission has leveraged synergies with other policy areas and other policy networks. By targeting specific network of stakeholders, in particular local authorities, and specific topics, such as energy poverty or cross-border cooperation, the EU ensures that the development of energy communities is tackled from different angles, involves different types of expertise and maximises policy outreach.

First, the topic of energy communities is linked to other relevant EU initiatives, such as the Covenant of Mayors, the Clean energy for EU islands secretariat, the Energy Poverty Advisory Hub or the Smart Cities Marketplace. Second, the collaboration of different Directorates within the Commission and the use of public procurement allow the Commission to gather expertise on very specific implementation aspects. For example, the EU regulatory framework mentions that Member States may allow energy communities to be open to cross-border participation. To encourage this option, the Commission has commissioned the creation of a handbook on Cross-Border Energy Communities, under the lead of the Directorate Regional and Urban Policy and in cooperation with the Directorate-Gen-

eral Energy. The published guidelines should describe how to set up a cross-border energy community, provide recommendations on how to overcome cross-border barriers and present good practices. This last example shows how the EU uses public procurement to support the development of energy communities.

5.2.3 Summary and recommendations

The aim of this section was twofold. On one hand, we presented and contextualised the EU policy framework. On the other hand, we sought to highlight what is expected from Member States regarding its transposition into national law. By taking the EU as an example, we showed that many means are available to public authorities, in addition to adopting laws and regulations, to support the development of energy communities. In this regard, we will provide multiple recommendations in the next section. Any public authority can play a role in developing strategies, adapting regulations at their level, monitoring their implementation, gathering evidence and expertise, leveraging synergies between different policy areas and actors, shaping a stakeholder process or providing funding for initiatives. All of these approaches can be very effective and complementary ways to untap the full potential of energy communities.

Recommendations

- Promote existing EU funds and initiatives and open calls so as to raise awareness of energy communities and their enablers about existing funding opportunities
- Reflect on how reforms and investments planned under the Ukraine Facility Plan and Facility can be used to promote the development of energy communities via different chapters of the plan (e.g., decentralisation and regional policy, energy sector, human capital)

5.3 Transposition of EU policies concerning energy communities in Ukraine

To promote the development of energy communities, policymakers need to transpose five building blocks (also see Figure 12):

- A clear definition identifying energy communities and providing guidance and protection to them
- Minimum regulatory conditions to implement projects
- Access to information, awareness-raising, capacity-building and technical assistance
- Access to financing
- A monitoring framework, based on governance and enforcement mechanisms

Figure 12 Building blocks for a policy framework for energy communities (Source: Energy Communities Repository (2024a), p.12)

This chapter is a mapping exercise and a stepping stone but not a tailor-made, turnkey solution for Ukraine. First because transposition and implementation will be an iterative and long-term process, informed by learning by doing and a pilot mentality. Second because the aim of this study is to provide information and empower policymakers and stakeholders in Ukraine, so they can choose their own development path. It is important to question the implicit assumption that Ukraine is in a passive receiving position of catching up to more advanced countries. Ukraine is far from starting from zero, and it is in a unique position to develop best practices, from which many other countries can also learn and acknowledge that the integration of Ukraine is a mutually beneficial process.

This section offers a short overview of the current situation regarding transposition in Ukraine. It then goes into more details and presents elements of the EU legislation and different implementation options (which can be combined or are mutually exclusive). We discuss trade-offs, best practices and pitfalls in relation to the status quo in Ukraine and examples from other EU countries. We begin by focusing on the legal definitions and then move on to more specific regulatory provisions.

5.3.1 Status quo of the policy framework in Ukraine

As a member of the Energy Community, and now a candidate country with open accession negotiations, Ukraine is under obligation to implement the EU legislation relating to energy communities. It is currently required to transpose the first generation of EU legislation on energy communities, which has been incorporated at the end of 2022 into the Community acquis, i.e., the legal requirements to be implemented by contracting parties of the Energy Community or candidate countries prior to joining the EU. Having been adopted more recently, the second generation of EU legislation has not yet been transposed by Member States nor incorporated into the acquis, However, nothing stands in the way of policymakers implementing

those provisions earlier than is required alongside current Member States, especially considering that provisions added more recently focus on two relevant topics for the reconstruction of Ukraine: the contribution of energy communities to heating and cooling and building renovation.

On 25 June 2024, the Cabinet of Ministries of Ukraine adopted its National Energy and Climate Plan 2025–2030. By its own admission, the provisions of the first generation of legislation have not been fully transposed yet. The NECP, however, provides an overview of current and planned measures. We will provide a brief overview here and explore the topic of transposition in greater detail in the next section.

- **Definitions of energy communities**

In 2019, Ukraine introduced the concept of energy cooperative in its legislation, for which it also provides a definition (Article 1(24) of the Law 'On Alternative Energy Sources')[5]. While this is an important step, energy community advocates also note that this definition has complex implications and only partially meet EU requirements (see Vostriakova et al., 2023 and Andrusevych et al., 2024 for a more detailed assessment). This definition has not been amended since the adoption of the first generation of EU legislation concerning (renewable) energy communities. That being said, Ukraine is not starting from zero. Policymakers, though, still have to develop a definition for REC and CEC that meets EU requirements.

- **Existing regulatory measures relevant for energy communities**

Since 2019, energy cooperatives may be eligible to receive green tariffs under certain conditions, i.e., for installations not exceeding 150 kW and provided that the members include at least ten citizens who own at least 75 per cent of the capital or a municipal utility owns at least 25 per cent of the capital at the time at which the energy cooperative is established and during the time in which the tariff is valid. Construction and housing cooperatives as well as homeowners' association can also benefit from grants from the GreenDIM programme to install solar panels or heat pumps.

Since that time, Ukraine has adopted several other laws and decrees relevant for energy communities and their activities. One example of this is the 'Law on introduction of changes to certain laws of Ukraine as to recovery of energy safety and green transformation of the energy system of Ukraine' (hereafter: the Green Transformation law) of 30 June 2023, which introduced a legal basis for a net-billing mechanism (self-consumption mechanism), aggregation and a system of guarantees of origins. It also amended conditions for the RES support scheme, the green tariff, moving away from a feed-in tariff to a feed-in premium.

Those changes are seen as positive developments, which might support the development of energy communities and their activities, specifically in relation to the deployment of RESs. At the same time, actors are taking a wait-and-see attitude regarding their implementation.

> *'The latest legislative changes are quite promising in principle, if they actually are enacted. We still don't know how it will work. Recently, the draft law on net billing and net metering, which was adopted last year, has already clarified some things. […] That's why many experts are quite positive about it. I think that once the mechanism of its operation is fully developed, it can also become a kind of impetus, as it opens up opportunities to generate electricity to meet their own needs, as well as the sale the surplus electricity without any licensing burdens.' Interview 18, representation from an NGO*

[5] "Energy cooperative shall mean 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;'

- **Planned measures**

Policymakers are currently working on and consulting on draft amendments to the Law 'On Alternative Energy Sources' and Law 'On Electricity Market' in order to transpose in part the first generation of legislation on RECs and CECs. We will explore the content of the draft amendments in the next section. Before we do that, here are a few comments and remarks.

At the end of 2023, the Ukrainian government published a draft law to transpose EU legislation focused on the electricity sector. It was prepared by NEURC in cooperation with the Energy Community Secretariat. This draft law, among others, will transpose provisions of the Electricity Market Directive (EMD, Directive 2019/944) by amending the Ukrainian law on the electricity market. In this regard, the draft law introduced a definition for active consumer, which includes a reference to energy cooperatives. It also introduced the concept of 'energy consumer association' in Clause 32 and Article 58[2]. The draft was consulted with stakeholders in the period up to the end of January. A working group has been set up at the Ministry of Energy to discuss the draft further. New amendments circulated in the late summer of 2024. The amendments were less detailed in many areas. The terminology also changed, with CECs now being referred as 'public energy associations'. Additionally, the draft amendments in circulation included provisions on RECs pertaining to the Law 'On Alternative Energy Sources'. Thus, there is an effort to address coherency between both concepts by discussing their transposition at the same time. On 2 October 2024, a new draft law (12087) transposing provisions from the EMD was registered in the Verkhovna Rada (Ukrainian Parliament)[6].

In summary, Ukraine has not yet fully transposed the provisions. This is why we will now be presenting the EU framework and discussing current proposed amendments in relation to transposition options and best practice examples from other EU countries.

5.3.2 Transposing the EU legal definition(s)

Two different directives deal with the concept of energy community at EU level:

- The Directive on the promotion of energy from renewable sources (2018/2001, last amended by 2024/1711; consolidated version available here), hereafter RED, refer to an energy community as a renewable energy community (REC) in Article 2(16) and Article 22.
- The Directive on the internal electricity market (2019/944, last amended by Directive 2024/1711; consolidated version available here) hereafter EMD, refer to an energy community as a citizen energy community (CEC) in Article 2(11) and Article 16.

Other EU directives and regulations that mention energy communities, such as regulations concerning energy efficiency or the social climate fund, refer to those two definitions and directives and do not include additional definitional elements.

Why does the EU reference two different concepts in two different directives? To what extent are both concepts similar, different and consistent with each other? The short answer is that the EU did not adopt a specific law concerning the development of energy communities but integrated energy communities in the par-

[6] Due to time constraints, we have not been able to compare the officially published draft law to the draft amendments we received in late summer.

allel recasting of existing directives with a different scope and different policy goals. This is why some consider REC and CEC to be partially overlapping concepts, while others state that RECs are a subset of CEC. The important point to understand is that both concepts are not mutually exclusive.

Does it mean that Ukraine has to introduce two definitions in its legislation? No, Member States are relatively free to decide the form of transposition. This means that the number of definitions and whether the definition is included in primary (laws) or secondary legislation (ordinances, decrees) is open. They can also decide to improve the coherency between both concepts by, for example, introducing an overarching concept or horizontal provisions. To give an example, they can decide that stricter provisions applicable only to RECs also apply to CECs.

Focus: Number of definitions, renaming concepts and overall coherency

- Belgium: The region of Brussels has introduced four different definitions which share certain horizontal provisions: energy community, citizens' energy community, renewable energy community and local energy community. The region of Flanders in Belgium has introduced a single concept of energy communities, with REC and CEC being two coherent variations of this concept.
- Latvia adopts a similar approach to Flanders but renamed CECs as electricity communities. While this is coherent with transposing the EMD and with the focus of the first generation of legislation, the terminology could be seen as overly restrictive, as CEC can also more generally promote energy savings or provide other types of energy services (see below).
- Czechia, Denmark and many other countries introduced two definitions. Some countries are actively trying to clarify the relationship between both, while others, like France, do not.

According to the current amendments being circulated, Ukraine is planning to introduce two definitions: one transposing renewable energy community and the other transposing citizens' energy community as public energy association (PEA).

Many publications have explained the similarities and differences between the definitions as well as their implications and the relationship between the two concepts. Without going into too many details, we provide an overview in table 1, where we link the definitions back to aspects described in chapter 2. Following this, we provide more details about each aspect as well as possible transposition and implementation options, examples of best practices and pitfalls from other countries. We also refer to the current status quo in Ukraine.

	Renewable energy community	**Citizen energy community / public energy association**
a) Form of collective organisation	**Similarities**: legal entity without further specifications regarding the type **Differences**: none *UA:* ▪ *Currently: cooperative (consumer, producer, service)*	**Similarities**: legal entity without further specifications regarding the type **Differences**: none *UA: idem* ▪

	▪ *Draft: further detailed provided by including references to the laws 'On Public Associations', 'On Condominium Associations' or any other law regulating organisational and legal form*	
b) Purpose / goal(s)	**Similarities**: provide environmental, social and economic benefits rather than generating profit (however profit-making is not excluded) **Differences:** none *UA:* ▪ *meet the needs of its members or territorial community, as well as for gaining proceeds* ▪ *favours non-profit organisations, goals should be stated in the charter/founding document*	**Similarities**: provide environmental, social and economic benefits rather than generating profit (however profit-making is not excluded) **Differences:** none *UA: see column on right (Renewable energy community)*
c) Common denominator	**Similarities**: purpose as common denominator **Differences**: focus on communities of place (local participation and decision-making) *UA: no further elaboration*	**Similarities**: purpose as common denominator **Differences**: can be a community of place, community of interest or take a hybrid form *UA: no further elaboration*
d) Eligible participants and governance standards	**Similarities**: core of eligible participants (natural persons, small enterprises, local authorities, including municipalities), share certain basic governance principles in common (open and voluntary participation, non-discrimination) **Differences**: smaller list of eligible participants and stronger governance requirements regarding who controls the REC *UA:* ▪ *individuals, legal entities, additional differences depending on the legal form* ▪ *indirect description of eligible participants and governance standards via references to existing laws regulating legal forms*	**Similarities**: core of eligible participants (natural persons, small enterprises, local authorities, including municipalities), share certain basic governance principles in common (open and voluntary participation, non-discrimination) **Differences**: larger list of eligible participants and weaker governance standards for CECs *UA: see column on right (Renewable energy community)*

e) Scope of activities, technologies employed and sectors applicable	**Similarities**: common core of activities (generation, consumption, storage, sale, sharing, aggregation) **Differences**: focus on renewable technologies across all sectors (power, heat, transport) *UA:* ▪ *production, procurement or transportation of fuel and energy resources, as well as provision of other services* ▪ *omission of certain activities (selling, sharing) and limited to electricity*	**Similarities**: common core of activities **Differences**: additional activities (provision of energy-efficiency services, charging services for electric vehicles, other non-defined energy services); technology-neutral approach but focus on power sector; distribution can be allowed under certain conditions *UA:* ▪ *see column on right (Renewable energy community) includes distribution*
Summary of status quo in Ukraine	*The current definition of energy cooperative does not meet EU requirements on several accounts.* *The draft amendments are mostly copied directly from the EU definition and thus include the relevant elements. It includes references to available legal forms and energy cooperatives in the list of eligible participants, but in general does not further described important elements.* *The scope is restricted to electricity and the list of activities does not include selling or sharing, thus restricting the potential of RECs.* In general, the transposition needs to provide further guidance in certain areas.	*The current definition of energy cooperative does not meet EU requirements on several accounts.* *The draft amendments are mostly copied directly from the EU definition and thus include the relevant elements. It includes references to available legal forms and energy cooperatives in the list of eligible participants, but in general does not further described important elements.* *The scope is restricted to electricity and the list of activities does not include selling or sharing, thus restricting the potential of RECs.* In general, the transposition needs to provide further guidance in certain areas.

Table 1 Comparison of REC and CEC according to the building blocks for defining energy communities outlined in chapter 2

a) Form of collective organisation

One thing that both definitions share in common is that energy communities must exist under law, though the EU does not prescribe any specific legal form. The transposition pitfall is thus to not further specify the legal forms available in national law to guide energy communities when they are being established. However, the current proposed amendments avoid doing this.

As it currently stands, the draft amendments state that energy communities (both RECs and CECs) can be set up as legal entities based the laws 'On Public Associations' and 'On Co-Owners of Apartment Buildings/Condominium Associations' or any other organisational and legal form allowed under existing laws, provided they are a not-for-profit organisation. Because those provisions clearly refer to familiar forms anchored in the law, implementation can be straightforward and swift for many energy community founders. Allowing for

more legal forms than the cooperative model is a great way to allow for more flexibility, variety and self-determination among energy communities.

How does the introduction of the draft amendments mentioned above impact the definition of energy cooperatives and link both concepts? First, the draft amendments foresee that energy cooperatives (consumer/service cooperatives but not producer cooperatives) can become members of an REC. Second, it is unclear whether the definition of energy cooperative in the Law 'On Alternative Energy Sources' will be retained as it is, deleted or amended. This is, however, of little consequence, as we can infer that energy cooperatives can be created under existing laws (Law 'On Cooperation', Law 'On Consumer Cooperation') and thus qualify as renewable energy communities or as public energy associations.

In summary, the legal forms likely to be available for energy communities (with no distinction being made between REC and CEC) after transposition in Ukraine are: consumer and service cooperatives, condominiums, public associations, public unions and finally other not-for-profit legal forms, which could include not-for-profit companies. Since the legal forms are specific to national law and the proposed amendments already belong to best practice, we do not provide examples from other countries.

Recommendation

- Expand on available legal forms, the accompanying creation of energy communities, participation and dissolution requirements as well as their registration procedure in informational and training material

b) Purpose/goal(s)

Both EU definitions are quite similar in this area, listing the type of benefits energy communities can provide (economic, environmental, social) but not further elaborating on them. Both emphasise that profit-making should not be the primary purpose of energy communities, which is a distinguishing feature compared to traditional energy undertakings. The transposition pitfall involves a failure to specify this difference in the law. Beyond that, Member States have the option to leave it at that or to provide further details in the legislation or bylaws as they see fit.

The current draft amendments are similar regarding both definitions. They copy the EU definition in part and additionally state that energy communities should be not-for-profit organisations and that their main goal(s) should be set out in the founding documents. While the draft amendments do not provide further guidance, additional information can be derived from the references to other laws. The existing definition of energy cooperative in the Law 'on Alternative Energy Sources' envisions that they carry out activities and provide services 'to meet the needs of its members or territorial community, as well as for generating proceeds'. The law regulating consumer cooperatives states that they also foster social and cultural development in rural areas and promote folks and crafts. The Law 'On Cooperation also provides information on the distribution of profits in Article 25.

Thus, the current draft amendments provide sufficient details and are consistent with approaches taken by other governments to ensure that the primary purpose of energy communities is ensured.

Focus: Examples of further guidance on the primary purpose of energy communities

- In Latvia, Austria and other countries, an energy community taking a legal form, which is not already non-profit, should stipulate its non-profit orientation (or stipulate that profits are not prioritised) and/or goals in its statutes.
- In Belgium (Wallonia), the application decree specifies that the energy community has to specify the purpose in their statutes and how any income generated is distributed. The energy community must also produce an annual report, which describes the activities, actions and decisions carried out and how those contributed to the purpose(s) laid out in the statutes. This report is sent to the members/shareholders and made available to an overseeing authority.
- In Ireland, the government has not published a specific law transposing the EU directive. However it has created a support scheme for community-led projects, which is defined. Meeting the requirements set out in the definition is a prerequisite to access the fund.
- Slovakia and Czechia allow profits to be distributed among participants under certain conditions. In Slovakia, 50 per cent of the generated profits can be distributed. In Czechia, the community may distribute 33 per cent of its revenues to its members, provided:

  - it is allowed under the founding legal act and pursuant to the legal form chosen
  - it does not jeopardise the overall purpose of the community and the provision of services
  - it creates a (reserve) fund from the profits, which represents at least 30 per cent of the capital and which may not be distributed

It is important to understand that non-profit orientation does not mean that energy communities do not generate profits or that distribution of profits is strictly prohibited by the EU legislation. Rather, the profit should be used to maximise community benefits, e.g., by reinvesting or distributing the profits to its members or within the local area where it operates. The distribution of profits can be a strong motivational factor to invest in the first place. Additionally, the redistribution of profits could go towards repaying micro-loans citizens, and especially vulnerable consumers, may receive to invest in energy communities. Over time and provided that energy communities are inclusive, the redistribution of profits could also provide additional revenues to low-income households and help them accrue financial assets. Consequently, this could help fight wealth inequality in the long run. Considering the current uncertainties in Ukraine, including the targeting of energy installations, it may be judicious for energy communities to channel profits into a reserve fund.

Restricting energy communities to non-profit forms ensures that the objectives of the directives are met. However, we would like to draw attention to a hypothetical case with great potential for Ukraine. By interpreting the existing laws, an energy cooperative could also be created as a production cooperative, meaning that its members are employees. We would argue that this legal form, including its for-profit requirement, could meet the EU definition if employment goes beyond individual benefits. That could be the case, for example, if the cooperative is established by long-term unemployed individuals or with the purpose of reintegrating veterans and IDPs, retraining workers from coal communities or promoting women's employment in the energy sector. Allowing for this possibility, and even actively supporting the creation of energy production cooperative through targeted programmes, could indirectly support local job creation. The establishment of production cooperatives can also raise the number of suppliers and increase market competition. Against this backdrop, policymakers should consider whether or under which conditions energy production

cooperatives can qualify as energy communities and benefit from the same enabling measures and requirements or whether the establishing of energy production cooperatives can be supported by other means (e.g., active labour market policies).

Recommendations

- Expand on the benefits provided by energy communities in informational and training material, especially in regards to their contribution to social cohesion in the context of war and reconstruction
- Analyse the potential of energy production cooperatives, which can demonstrate societal benefits by virtue of employment of specific categories of the population, and how they can be supported
- Limit the redistribution of profits to individuals to ensure the sustainability of the organisation
- Incentivise flagging profits towards an individual reserve fund or a collective solidarity fund to cover damages to installations
- Connect the development of energy communities to other policies, especially those relating reconstruction and reintegration

c) Common denominator

The common denominator of energy communities can refer to the purpose and/or to the characteristics of members, including their localisation. This is undoubtedly the building block, where the EU provides the least amount of information, though it does distinguish clearly between RECs and CECs.

With an REC, members who retain effective control form a community of place, as they are located in the vicinity of the renewable installations (physical proximity). This proximity criterion requires further elaboration from Member States.

Member States can opt to delegate the specification of this criterion to each energy community according to their objectives and activities, while providing guidance and supervision. Or it can provide further details based on a specific criterion:

- Option 1: Defining according to a specific distance to an installation
- Option 2: Defining according to administrative criteria (e.g., postcode, number of neighbouring municipalities)
- Option 3: Defining according to a component in the energy system/the grid typology

The current draft amendments for RECs specify the proximity criteria but do not further elaborate on this nor does it leave it up to the REC to enter this information in their statutes based on the local context. The draft amendments mentioned above concerning CECs are coherent with the EU definition. CECs can be linked to a local context but this is not tied to effective control.

Focus: Further guidance on physical proximity

- As with the primary purpose, the government of Flanders does not provide further guidance and leaves it to RECs to define this criterion on a technical or geographical basis according to its objectives and activities. The regulatory authority oversees correct implementation.
- Lithuania, Czechia, France and other countries have opted for option 2. In Lithuania, at least 51 per cent of the votes at the general meeting of shareholders/members must be held by shareholders/members who are natural persons whose place of residence has been declared in the municipality where the construction or installation of the energy production facility is planned or in other municipal elderships bordering this municipality. Czechia considers a contiguous area of no more than three municipalities (with an exception for Prague), while France opted for an administrative level comparable to the Ukrainian raions in terms of size (and powers).
- Other countries and regions, like Wallonia, Italy and Austria, have defined proximity in relation to technical elements (option 3). For example, Italy requires members/shareholders to be connected to the same medium voltage point.
- Germany adopts a hybrid approach that features a mix of distance (option 1) and administrative boundaries (option 2): Seventy-five per cent of the voting rights must be held by actors located in a postcode that is wholly or partly within a radius of 50 km of the planned installation.

The Irish Commission for Regulation of Utilities (2023) has described and presented the (dis)advantages of options 1 to 3. Defining according to distance is a simple and transparent approach, which can however have different implications in an urban or rural setting or if the community owns more than one installation. Defining according to an administrative criterion is also a simple and transparent approach, which can however be arbitrary for actors living at the borders of such entities. This is why some countries allow the integration of bordering territories.

The last option can seem relatively simple from the point of view of policymakers and other actors in the energy system. It is also quite practical to enable certain activities to be carried out, one example of this being energy sharing. However it has also many drawbacks. Firstly, it can be more difficult to understand for actors lacking technical expertise, such as energy communities. Secondly, this approach conflates governance requirements with requirements concerning the implementation of specific activities, which could be performed by an REC as well as a CEC, or even other actors. Thirdly, if an energy community undertakes multiple activities, implements multiple projects or is active in multiple energy sectors, this criterion could create confusion and legal contradictions. To give an example, the criterion established by Italy (consumption point to the medium-voltage grid) is not relevant for heating communities. Fourthly, members of energy communities could be excluded if network operators decide to change arrangements. This means that effective control could evolve because of changes external to the community. Finally, in regards to the extent of destruction and the reconstruction needs as this relates to Ukraine's infrastructures, choosing a material aspect may create additional uncertainties.

In our opinion, this technical criterion is detrimental to the development of energy communities, as it requires more technical knowledge and increases dependency on external factors. We would argue that option 1 and 2 should be favoured as energy communities are a social more than a technical concept. This aspect has also been emphasised by the European Commission, which contends that the proximity requirements are linked to governance requirements and not to activities, as the policy objective is to increase local acceptance of RES installations. Yet, it is undeniable that using technical criteria for the implementation of certain activities, e.g., energy sharing, will be considered by policymakers.

Recommendations

- Policymakers should provide additional guidance regarding the proximity criteria for RECs by delegating the responsibility of defining this aspect to RECs or by defining an approach based on distance, administrative unit or a combination of the two
- When introducing a local criterion for the implementation of certain activities, e.g., energy sharing, policymakers should consider how this may dovetail with the proximity criteria established as governance standards for renewable energy communities

d) Eligible participants and governance standards

We understand participation in terms of ownership and rules determining decision-making. More specifically, we distinguish between participants and market roles. A consumer can be a participant in the energy community but they can also be supplied by the energy community without owning shares in it (traditional customer-supplier relation). The rights of participants[7] as energy consumers will be discussed in the next subsection (5.3.3). Governance standards are in large measure inspired by cooperative principles, which does not however mean that energy cooperatives are the sole legal form available.

Both EU definitions contend that energy communities are based on open and voluntary participation, which is described in the recitals. Inclusiveness, the prohibition of discrimination and freedom of association are important drivers for energy communities. Members are free to join (or leave) if they also accept the responsibilities associated with membership. The draft amendments do not elaborate on this aspect. However, laws regulating legal forms provide guidance on joining, participating in and leaving those organisations. For example, members of a condominium association are legally entitled to leave at any time as are members of energy cooperatives.

While Member States do not necessarily need to give additional guidance on open and voluntary participation, it is key to provide information and specify an overseeing authority to ensure compliance, especially for legal forms that provide less guidance.

There are major differences between the two definitions for REC and CEC regarding who is eligible to participate in an energy community and what form this may take. In this regard, the definition of REC contains stricter provisions than the accompanying definition of CEC regarding eligibility rules, effective control and autonomy.

On one hand, only natural persons, SMEs and local authorities can participate in an REC and only actors located in the proximity of the renewable energy projects can exert effective control over the REC (see proximity criteria above). The directive further stipulates that RECs should 'be capable of remaining autonomous from individual members and other market actors that participate in the community as members or shareholders, or who cooperate through other means such as investment'. In practice, this means that RECs strive towards more democratic or consensual decision-making, preventing one actor or type of actor from having disproportionate decision-making powers. The current draft amendments are coherent with the EU definition. The only difference is that it includes energy cooperatives (consumer/service cooperatives) as eligible participants. The draft amendments do not provide further guidance on the principles of effective control and autonomy, nor do they explicitly require energy communities to do so in their statutes.

On the other hand, anyone can participate in a CEC. However, effective control must reside with natural persons, local authorities, including municipalities, and/or small enterprises, i.e., actors 'that are not engaged in large-scale commercial activity and for which the energy sector does not constitute a primary area of economic

[7] Depending on the legal form, participants can also be referred to as members or shareholders. We use the broader term of participants for clarity.

activity' (Recital 44, EMD). On initial examination, this does not require further elaboration by Member States, though they may decide to do so in light of the debate on corporate capture and community washing (see subsection 5.1.1). In this regard, the draft amendments concerning CECs restrict the list of eligible participants to the actors previously described, thus eligibility ensures de facto effective control. Unlike RECs, energy cooperatives (consumer/service cooperatives) are not included in the list of eligible participants. The EMD does not include a principle of autonomy for CECs.

Existing laws provided guidance on the eligibility of participants and the implementation of governance standards. For example, decisions made within a condominium association require unanimity, whereas energy cooperatives work under the one person, one vote principle. The Law 'On Consumer Cooperation' and Law 'On Public Association' stipulate independence from or non-interference by public authorities, political parties and public organisations in Article 3 of said laws, which could be regarded as further guidance on the principle of autonomy. The laws on cooperatives also provide additional information on the eligibility of participants. In the case of cooperatives in general, any citizen over the age of 16, regardless of their nationality (or lack thereof), as well as legal entities established in Ukraine or foreign countries can become members. With consumer cooperatives, members may be citizens as well as 'farms, collective agricultural enterprises, business associations, cooperatives, state and other enterprises'. In more specific terms, this means that citizens, energy cooperatives, businesses and public enterprises from other countries are permitted to be financially involved in the development of Ukrainian RECs and CECs. It also means that there should be no obstacles for Ukrainian refugees in other countries to contribute. In view of high levels of support for RECs and CECs and a desire to become involved, this represents an incredible opportunity. At the same time, it may be even more important to provide further guidance on effective control and the principle of autonomy to ensure that the benefits remain within Ukraine and within local communities, even with the participation of foreign citizens and legal entities. In short, policymakers need to mitigate the risk of corporate capture as well as the risk of foreign capture with regards to energy communities.

With this in mind, we can safely say that the draft amendments provide sufficient information and safeguards regarding participation and governance standards to develop energy communities. However, policymakers could decide to provide further guidance or to clarify certain aspects regarding effective control and autonomy.

Effective control refers to ownership and legal and contractual arrangements influencing the composition or decision-making of the community[8]. Policymakers may require energy communities to give further guidance in this area, especially if this is not already provided by national corporate law. They can also provide additional guidance by introducing minimum participation requirements for (local) citizens, or by limiting the eligibility of certain categories of members. Autonomy refers to the distribution of voting rights or to rules of appointment and dismissal of managing bodies. This has both an internal and an external dimension to it. Internally, this means that energy communities strive for collective decision-making rather than having control exercised by one member or a small group of members. Externally, this means that an energy community must remain independent from non-members who collaborate with the energy community by providing investment or services. Autonomy can be achieved by limiting the amount of shares each member may hold or by adopting the one person, one vote principle. The energy community could also establish thresholds regarding the delegation of decision-making or operation of certain activities by third parties.

[8] Article 2(56) of the EMD also provides a definition of control: Art. 2(56)
'control' means rights, contracts or other means which, either separately or in combination and having regard to the considerations of fact or law involved, confer the possibility of exercising decisive influence on an undertaking, in particular by:
(a) ownership or the right to use all or part of the assets of an undertaking;
(b) rights or contracts which confer decisive influence on the composition, voting or decisions of the organs of an undertaking;

In summary, there are major deficiencies when it comes to the transposition of these governance standards at the time of publication of this study. We provided a few examples of how policymakers could provide further guidance regarding the aforementioned principles and with respect to how this could be implemented by energy communities in their statutes.

Focus: Best practice on eligibility rules and on further guidance regarding governance standards (open and voluntary participation, effective control and autonomy)

- Wallonia strengthened governance of CECs by introducing an autonomy requirement. It provides further details in this area, along with number of indicators. It considers the influence of the relationship of a member/shareholder and the energy community to other actors or participants. This could include, for example, whether an entity or a natural person has the right to appoint or dismiss the majority of the members of management, management or the supervisory body of the energy community; or if a natural or legal person, and persons to whom it is related, hold more than 50 per cent of voting rights. Any member of the community can contact the regulatory authority in cases where he or she suspects that autonomy is under threat.
- Czechia has provided further guidance in all four areas. Regarding open and voluntary participation, it is possible to terminate membership by unilateral legal action against the energy community, at any time and free of charge. Regarding autonomy, a member of an REC cannot exercise voting rights that exceed ten per cent of all votes cast when voting in the highest body. Regarding effective control, members of an energy community (CEC or REC) who are barred from exercising effective control can vote, however their votes are not taken into account as part of the formal decision-making process..
- Denmark also provides guidance on rules to prevent corporate abuse. For example, individuals who are part of management at other companies are forbidden from exercising significant influence within the community in order to preserve the autonomy of the energy community. This means that the energy community can still rely on the expertise (organisational, financial) of engaged citizens but that, at least formally, they are prohibited from exercising disproportionate influence over the development of the community.
- France has produced detailed standards on effective control and autonomy. In the case of RECs, SMEs cannot be affiliated with another enterprise. RECs and CECs must meet four cumulative criteria to be effectively controlled by their members: 1) a minimum share of 40 per cent of equity and voting rights held separately or jointly by participants eligible to exercise effective control; 2) if they have less than 50 per cent of voting rights, strategic decisions must be taken with a qualified majority of 60 per cent; 3) a prohibition on other participants from holding 40 or more per cent of voting rights; 4)) limits on voting rights for companies that participate in more than one energy community. France has also introduced an exception to the list of eligible participants of RECs by including RECs or social entrepreneurship funds specialised in investments in RES installations or companies developing RESs.
- Regarding RECs, Lithuania stipulates that at least 51 per cent of voting rights must be held by natural persons meeting the proximity criteria and at least three citizens must participate as shareholders. Similarly, in Germany, at least 75 per cent of voting rights must be held by natural persons and at least 50 citizens must participate as shareholders. Furthermore, no shareholder may hold more than 10 per cent of voting rights.

Recommendations

- Enact provisions to incentivise citizen participation and effective control, such as a minimum citizen participation quota, i.e., a minimum number of citizens that need to participate in a community or a minimum number of voting rights held by citizens who live nearby to increase local acceptance
- Introduce limits on the participation of foreign citizens or entities in relation to local participants or participants from within the country (provided the energy community is not engaged in cross-border activities)
- Introduce judicial and non-judicial mechanisms and specify a responsible entity tasked with investigating and resolving complaints/cases regarding breaches of governance standards

e) Scope of activities, technologies employed and applicable sectors

By definition, both directives have different scopes and policy objectives, and thus further define the scope of activities, technologies employed and applicable sectors differently.

The RED focuses on the development of RESs across all energy sectors (power, heating and cooling, transport), while the EMD focuses on defining market rules and roles relevant for the electricity market, i.e., defining what are the tasks, rights and duties of energy communities vis-à-vis their members, customers and other market actors. In this context energy communities are actors who can take on different roles (producer, supplier, consumer, grid operator, etc.). Benefitting from an enabling framework in this regard does not prevent them from having to comply with rules governing those predefined roles.

In general, the range of activities which CEC can undertake is broader than those that RECs can perform. They can take on additional activities (e.g., provision of energy-efficiency services/charging services for electric vehicles). Significantly, the EMD leaves a door open and encourages innovation as it allows energy communities to provide 'other energy services', meaning that energy communities could develop activities not mentioned in the directive, i.e., services that do not exist yet or that are not yet regulated.

Focus: Energy communities and the gas market

As described in subection 5.2.1., many recent EU laws refer to renewable or citizens' energy communities, constituting the second generation of legislation. A notable exception is the recasting of the gas market directive (Directive 2024/1788) on common rules for renewable gas, natural gas and hydrogen. This directive does not refer to the EU definitions of energy communities. However, Recital 38 of the directive states that 'energy communities-of-interest should contribute to the uptake of renewable gas'. In short, energy community advocates feared the creation of unnecessary legal uncertainty and the risk of corporate capture.

This omission of energy communities does not however prevent energy communities from producing and consuming gas from renewable energy sources (biomethane, hydrogen), as covered in the RED. Activities related to fossil gas are excluded.

Here, there is less need for Member States to provide further guidance. Rather the primary challenges related to transposition involve making sure that activities that energy communities are permitted to perform are included in the legislation. In this regard, the draft amendments concerning RECs omit certain activities (selling, sharing) and focus on the electricity sector. This is a major constraint on the development of energy communities in the heating sector, and thus on their contribution to reconstruction efforts. It also runs counter to

the trend in the EU, which is to support the development of heating and cooling communities as well as citizen-led renovation projects. The second challenge is to ensure that energy communities are mainstreamed beyond the implementation of these two directives and beyond the field of energy policy, as described in subsection 5.2.2. For example, policymakers could include energy communities as relevant actors for the implementation of social policy and territorial development.

Recommendations

- Mainstream energy communities in other relevant energy laws (e.g., laws on heating and cooling, energy efficiency) and policies
- Monitor the planned publication by the European Commission of guiding documents on community heating and cooling

To summarise, both definitions of REC and CEC have a strong common core. The central actors of energy communities are first and foremost citizens, local authorities and small enterprise, for which participation in an energy community is complementary to their main business. Their organisation revolves around goals which are not purely commercial. This core is what distinguishes them from other actors. Specific ownership and governance standards are established to protect energy communities from possible abuse within the community and from outside the community.

The current draft amendments introducing definitions of REC and CEC (public energy associations) represent a major step towards the development of energy communities. Both definitions share many things in common, informed by the legal forms available. Even though some aspects warrant further explanation, this could be done at a later time by policymakers by way of bylaws, through decisions of the regulator or by energy communities themselves in their statutes.

Here are the main and most urgent changes that policymakers need to make:

- ensure that renewable energy communities can operate in the heating sector
- clarify the proximity criteria in relation to effective control of RECs
- designate a regulatory authority tasked with ensuring compliance with governance standards as stated in the foundation agreement/the charter

Beyond those improvements, policymakers, policy advocates and enablers can support the introduction of those concepts by developing an overview of legal forms and their requirements, as well as by creating a template for a foundation agreement/charter to guide energy communities. In drafting support programmes, policymakers should also consider whether RES projects developed purely by municipalities and RES projects developed solely by citizens or in cooperation between multiple stakeholders should be treated differently, the reason being that municipal projects are supported by current financial instruments and international financial donors. However, other community projects may not yet receive the same attention.

Finally, policymakers, energy community advocates and enablers could also explore and incentivise alternative community models, which do not fit the EU or national requirements but could still advance the policy goals of Ukraine and allow communities and citizens to be involved in different ways. For example, policymakers could introduce a requirement for public consultation on commercial RES generation projects and open a certain share of their capital to local citizens, municipalities and local businesses. While those actors would not have effective control over the project, they could still receive dividends from it, thus increasing

local acceptance and their contribution to the local economy. To avoid terminological confusion and community washing, these types of projects could be referred to as community-supported RES projects.

5.3.3 Transposing the enabling framework

Policymakers have a broad range of possible supporting measures at their disposition to guarantee a level-playing field and promote the development of energy communities. There are three points we would like to emphasise in this regard.

First, both the RED and EMD distinguish between minimum requirements and optional measures. This means that policymakers have to meet minimum standards. Otherwise, they can be – legally or politically – held accountable. Meanwhile, they also have a discretionary power to go beyond what is requested of them or what we describe in this study. Second, an enabling framework goes far beyond adopting laws, as we have shown in section 5.2. by using the EU as an illustrative example. This means that the role of policymakers is to adopt certain rules while developing a vision and calling other stakeholders into action, among other actions Third, as with the definitions, there is a stricter list of requirements for REC compared to CEC. However, in some cases, provisions in the CEC are also more concrete, as it refers to specific existing provisions under the EMD or the Energy Market Regulation (EMR, Regulation 2019/943).

To guide policymakers and policy advocates in this matter, this subsection first focuses on describing the rights and duties applicable to energy communities and their participants. It then turns the focus to specific elements necessary to establish a level-playing field and an enabling framework.

- **Catalogue of rights and duties**

Both directives adopt a similar approach by clarifying rights and duties applicable to energy communities and their participants, whereby a right for one player often obliges another player. Here, it is important to distinguish between

1. Rights and obligations applicable to energy communities as a specific type of player: Here energy communities can take on judicial and non-judicial actions to make their rights respected (e.g., in case the transposition is incorrectly or incompletely implemented[9] or if they face discriminatory treatment). Conversely, they could also be held accountable by other players, e.g., participants in case agreed governance standards are not upheld within the community.
2. Rights and obligations applicable to their participants: Here both directives clarify that participants maintain their rights and obligations as customers at all times. While energy communities can define for themselves the conditions for joining and leaving an energy community, as well as participating in decision-making, those procedures should be non-discriminatory.
3. Rights and obligations applicable to energy communities when they pursue certain activities / take on certain market roles to the same extent than other players, as described in specific pieces of legislation (the Electricity Market Directive (EMD), Electricity Market Regulation (EMR), Energy Efficiency Directive (EED), the Energy Performance of Buildings Directive (EPBD)).

[9] This is true for EU member countries but not for countries, such as Ukraine, that are in the process of joining the EU. In this regard, the Energy Community has a specific dispute settlement procedure that is open to the Parties to the Treaty and organs of this organisation but not to any stakeholders. Once Ukraine has become a member of the EU however, energy communities could benefit from specific legal mechanisms enabling them to enforce their rights (Client Earth, 2022).

In the following table 2, we present provisions relating to those different rights and obligations. Optional elements are in italics.

	Renewable Energy Community (Art. 22 of the RED)	**Citizen Energy Community (Art. 16 of the EMD)**	**2nd generation: among others, EED and EPBD and right to energy sharing (Art. 15(a) of the EMD)**
Rights and duties of energy communities as specific players and when taking on market roles	▪ Right to conduct certain activities (produce, consume, store, sell, share) and access energy markets without discriminatory treatment ▪ Obligations to respect the regulatory framework applicable to those activities/market roles (mostly defined in other articles and pieces of legislation)	▪ Right to conduct activities (produce, consumer, store, sell, share, *distribute*, provide energy efficiency services, etc.) and access electricity markets without discriminatory treatment ▪ Right to be treated as active customers in case of self-consumption activities ▪ In case energy communities have the right to operate a distribution system: - they are entitled to conclude an agreement with the relevant DSO/TSO to which the network is connected - they can benefit from exemptions for closed distributions systems (Art. 38 of the EMD) ▪ Obligations to respect the regulatory framework applicable to those activities/market roles ▪ Obligations to be financially responsible for imbalances they cause as balance responsible party or to delegate this responsibility (according to Art. 5 of the EMR) ▪ In case energy communities can operate a distribution system: - they do not discriminate against or harm the remaining customers that are not	▪ Energy communities can become energy sharing organiser on behalf of their participants (within the community) ▪ Energy communities can be allowed as final customers/active customers to participate in energy sharing schemes with other participants

		part of the energy community and can benefit from exemptions planned for closed distribution systems - they establish the relevant procedures in accordance with rules applying to DSOs	
Rights and duties of participants: joining, participating and leaving the energy community	▪ Right for eligible players to join, participate and leave (including for private undertakings, if their participation is not their primary commercial/professional activity) ▪ Participants retain their rights and obligations as final customers ▪ Members States ensure the existence of rules to secure the equal and non-discriminatory treatment of consumers participating in an energy community ▪ Leaving the community is linked to the consumer status, i.e., consumer protection legal provisions ▪ Member States can allow for cross-border participation	▪ Right for any participants to participate and leave the CEC ▪ Participants retain their rights and obligations as (active) customers ▪ Leaving is linked to the consumer status, i.e., consumer protection legal provisions (in this case, Article 12 of the EMD (right to switch supplier)) ▪ Member States can allow for cross-border participation	

Table 2 Catalogue of rights and duties for energy communities according to EU legislation

In the transposition process, policymakers need to ensure that those rights and obligations are mentioned, and if necessary, elaborated upon. When applicable, the transposition should refer to applicable national provisions, e.g., on consumer protection or on other regulatory frameworks. For example, the transposition could address whether the provisions for small distribution systems correspond to the EU legislation on closed distribution system and therefore, or regardless of, under which conditions they could apply to energy communities.

> *"In my opinion, if we want to develop municipal energy, we need to raise a dialogue and ask communities. We are at war. Our cities are experiencing occupation and destruction. There are many different challenges. Why not give them the authority to create small distribution systems? At least for the period of wartime. […] In addition, such a network should operate autonomously when needed, and then everyone will be provided with resources." Interview 20, representative of a NGO*

Regarding the current transposition draft amendments, we can generally observe that the catalogue of rights and duties is taken into consideration. In particular, we want to highlight the fact that policymakers consider allowing CEC/public energy associations to distribute electricity, which was not included in the first version of the draft.

However, there are also improvements to consider, especially for the development of REC.

1. For REC and CEC: It is possible to create energy communities as consumer, service and producer cooperative that have their own rules for termination. This could create some frictions. Notably, it is questionable that members of producer or service cooperative should terminate membership according to the consumer status and rules. There is a need to clarify this aspect by adapting the law "On Cooperation" or by clarifying in the draft amendments on energy communities or bylaws regarding which legal provisions should apply based on priority.
2. For REC and CEC: Not every activity to which REC and CEC are entitled are explicitly mentioned. The draft mentions consuming, producing, aggregation and storage, but not sharing nor selling/supplying for REC. Similarly, the draft does not explicitly mention sharing in regard to public energy associations. However, some provisions hint at its development (cooperation between public energy associations and DSOs to "facilitate the distribution of electricity within these associations" and allowing CEC to distribute electricity). For CEC, the list of activities does not include the provisions of energy efficiency services or other energy activities.
3. For REC: The current formulation refers to the production and consumption of electricity from RES. It also states that REC have the same rights and obligations than CEC/public energy associations. This is logical to the extent that REC operate in the electricity sector. This is overly restrictive as energy communities can have a central role in (re)establishing heating installations and district heating. And in case they are, contradictions may arise with provisions regulating those sectors.

Importantly, the first draft focused on transposing CEC and the EMD included more rights and obligations, inter alia a mandatory registration procedure for acquiring the status of energy consumer association. While this decision potentially reduces administrative burden of energy communities, it also impedes the creation of a registry and monitoring framework (see below procedures and monitoring and registration).

Beyond these remarks, we recommend that policymakers look at the following best practices to elaborate on their draft.

Focus: catalogue of rights and duties of energy communities and their participants

- Croatia as well as regions of Belgium (Brussels, Flanders) have included provisions requiring energy communities to deal with internal disputes and complaints within an energy community.
- The Netherlands has introduced a non-discrimination rule, according to which provisions in contracts between final/active consumers and market players going against this rule are void. There have been many documented cases where traditional suppliers have designed additional charges and fees for consumers engaging in self-consumption and/or energy sharing, while covering the rest of their consumption with a supply contract. This provides additional legal certainty for consumers.

- The Latvian law requires the cabinet of ministers to adopt detailed regulations regarding the relationships, and thus reciprocal rights and duties, between energy communities and other players, especially suppliers and DSOs.
- For elaboration on the conditions of participation (open and voluntary participation, autonomy), see the dedicated focus in the previous subsection (5.3.2)

Recommendations

- Policymakers should amend the drafts to transpose the full scope of activities of the RED and EMD, regardless of the fact that some activities may require adopting additional measures, which could happen at a later point
- Policymakers should clarify which rights and duties of CEC apply or not to REC in case they are active in other energy sectors
- Policymakers or other enabling public authorities (e.g., NEURC or SAEE) should adopt guiding documents explaining the different rights and duties applicable, in relation or regardless of the legal form chosen, and which judicial and non-judicial mechanisms are available to enforce them in Ukraine

- **Levelling the playing field and establishing an enabling framework**

We discuss the four remaining blocks in addition to a clear definition. The aspect of monitoring is mainstreamed in other aspects and summarised at the end.

In the following table 3, we describe other elements constitutive of establishing a level-playing field and an enabling framework for energy communities. Optional elements are in italics. This overview is complemented by provisions from the second generation, where transposition could be anticipated.

	Renewable Energy Community (Art. 22 of the RED)	**Citizen Energy Community (Art. 16 of the EMD)**	**2nd generation: among others, EED and EPBD and right to energy sharing (Art. 15(a) of the EMD)**
Assessment of existing barriers and potential to the development of energy communities	Required for REC, no elaboration	*Not required but advisable to extend the required assessment for REC to relevant provisions for CEC*	*Not required but advisable to extend to have a forward-looking assessment, i.e., anticipate the transposition of further EU legislation* Reporting on market barriers and failures under the National Building Renovation Plan (see reporting below)
Removal of unjustified regulatory and administrative	Regulatory authority (or another authority if provided by policymakers) has to monitor the removal of unjustified obstacles and restrictions to REC/CEC and	*Not part of the enabling framework but advisable to extend on the basis of the assessment and*	*Not part of the enabling framework but advisable to extend on the basis of the assessment and*

barriers to the development of energy community	relevant activities (self-consumption, energy sharing), specifically regarding connection procedures	*the monitoring duties of the regulatory authority*	*the monitoring duties of the regulatory authority*
Procedures	Fair, proportionate and transparent procedures, including registration, licensing	Fair, proportionate and transparent procedures, including registration, licensing	Energy sharing: ▪ Provide a relevant contact point for registration
Charges	Fair, proportionate and transparent Cost-reflective network charges Subject to other relevant charges, levies and taxes ensuring that they contribute, in an adequate, fair and balanced way, to the overall cost sharing of the system in line with a transparent cost-benefit analysis of distributed energy sources developed by the national competent authorities	▪ Cost-reflective charges according to Article 18 of the EMR ▪ If energy communities are allowed to operate distribution networks: - Subject to appropriate network charges at the connection points and differentiated for feed-in, consumption and self-consumption/sharing	Energy sharing: ▪ Provide a relevant contact point to validate calculation methods
DSO duties and facilitation of energy sharing	Requires DSOs to cooperate with energy communities in the establishment of energy sharing schemes	Requires DSOs to cooperate with energy communities in the establishment of electricity sharing schemes	The updated EMD has introduced a specific article for electricity sharing (Art. 15(a))
Tools to facilitate access to information and capacity-support	Not elaboration Joint interpretation with Art. 18 on the right of information and training possible: ▪ Member States, where appropriate with the participation of local and regional authorities, shall develop suitable information, awareness-raising, guidance or training programmes in order to inform citizens of how to exercise their rights as active customers, and	*Not applicable*	▪ Article 29 of the EPBD - Information and awareness-raising campaigns to inform relevant stakeholders, including energy communities - Guidance and training for relevant stakeholders including renewable energy communities ▪ Article 22 of the EED - Transparent, accessible and widely disseminated to all

	of the benefits and practicalities, including technical and financial aspects, of developing and using energy from renewable sources, including by renewables self-consumption or in the framework of renewable energy communities		relevant players, including REC and CEC - Encourage cooperation between REC/CEC and other relevant stakeholders in developing one-stop shops - Support multilateral dialogue among relevant stakeholders including REC, CEC
Tools to facilitate access to finance and support schemes	Part of the enabling framework, no elaboration		
Social inclusion	Ensuring access for low-income or vulnerable households	Not part of the enabling framework	Ensuring access in energy sharing schemes for low-income and vulnerable households, including through support measures and requirement for energy sharing projects owned by public authorities
Reporting	Mandatory reporting requirement under the NECP (national trajectories and objectives regarding the development of REC, summary of policies to promote and facilitate the development of REC), no further specification	No mandatory reporting requirements under the NECP, no further elaboration	Mandatory requirements to include REC and citizen-led renovation initiatives under the national building renovation plans (description of market barriers and failures and overview of implemented and planned policies and measures)
Energy savings obligation			*Article 8 (EED): considering and promoting the role of REC and CEC in the contribution to the implementation*
Buildings			*Art. 7 (EPBD): one of the criteria to achieve the status of Zero Emission Building is to be supplied by renewable energy provided by an energy community*

Heating and cooling assessment planning			*Article 25 (EED)* *Consider the needs of local communities and assess the role of energy communities to contribute to the implementation of local heating and cooling projects*

Table 3 Overview of other elements constitutive of a level-playing field and an enabling framework

- Assessing the barriers to and potential for developing energy communities

As part of the enabling framework for REC, Ukraine is expected to conduct an assessment of existing obstacles and potential for the development of energy communities. However, the RED provides little guidance and therefore leaves a lot of room for policymakers to elaborate upon. The draft amendments mention this element but could be improved upon by taking inspiration from some best practices to go beyond what is required.

First, we want to highlight that the current draft includes a best practice, i.e., designating the player responsible for carrying out this assessment, in this case, the "central executive body that ensures the formation and implementation of state policy", i.e., NEURC. The choice of NEURC is sensible as many EU countries have also tasked the regulatory authority and/or the energy agency with conducting this assessment. This choice is also leveraging synergies as NEURC will likely to be tasked with monitoring the removal of existing barriers (see below). Other options include: a ministry or an interministerial working group or any other organisation or working group commissioned by the State.

Second, the draft provides no indications on the timing and frequency of this assessment. We would recommend carrying out this assessment before adopting further regulatory and administrative provisions transposing the EU legislation, i.e., as a basis to remove barriers and designing supportive measures. We however note that very few EU countries have done so. Furthermore, when connecting this provision to others from the EU legislation (monitoring duties regarding the removal of obstacles for the regulatory authority, reporting on the development of energy communities in the NECP and other national plans), we would advise policymakers to consider conducting the assessment periodically (yearly or at least streamlined with other existing reporting requirements at EU or national level).

Finally, the directive does not mention whether this assessment should be published. However, in an effort to promote transparency and accountability as well as to raise awareness and promote knowledge sharing, we would advise policymakers to include in the draft amendments to make this assessment public.

Beyond these aspects, we want to give additional pointers into how to carry out such an assessment. First, we would encourage policymakers and the responsible player carrying out this assessment to go beyond the requirements of the transposition focused on REC firstly by extending the scope of the assessment to also include existing barriers and potential for CEC and secondly by anticipating the transposition of the second generation of legislation to focus also on the role of energy communities in organising energy sharing, providing energy efficiency services and conducting renovations in order to accelerate the adoption of those provisions and the potential for energy communities in Ukraine. Carrying out this assessment can be done by

combining different methodologies (e.g., legal review[10], modelling, stakeholder engagement and participatory approach[11], etc.) Actor-based methods could have the additional advantage of raising awareness and thus indirectly and implicitly supporting the potential for development. According to the Energy Communities Repository (2024a, 2024b), significant barriers that need to be monitoring and assessed are

- Accessibility issues (grid, financing, support schemes, power purchase agreement, production sites, information)
- Administrative procedures (grid, planning, public procurement, tenders)
- Energy sharing regulations
- Supply licensing regulations

Focus: assessment carried out in other countries

- The law requires the Greek energy agency to carry out an annual assessment of the barriers and development possibilities of REC and CEC, and if necessary, provide recommendations to the relevant ministry.
- In Flanders (Belgium), the regulatory and the energy and climate agency were tasked with carrying out the assessment. The assessment was divided into different parts, with an assessment of existing barriers for collective activities being published first and then another assessment focusing on the regulatory framework for energy communities specifically being conducted.
- In France, the ministry has established a working group comprised of relevant stakeholders (public entities, associations, banks, energy communities, etc.) tasked with discussing identifying barriers and needs for regulatory adaptations.
- In Slovenia, the ministry is in charge of carrying out this assessment and adopting a community enabling programme every three years based on it.
- In 2019, the Dutch Ministry for Economic Affairs and Climate published a study looking at the potential of energy communities in onshore wind and solar power generation as well as the heat transition, focusing on cooperation, entitled “Exploring future potential citizen energy movement 2030: energy owned of the local community”.
- The EU implicitly requires a national assessment to be conducted. However, nothing prevents regional or local authorities from using public funds to conduct studies, as well. The Spanish region of Navarra has done so and established a creation potential of energy communities in 252 municipalities by 2030.

Recommendations

- ➢ Policymakers should include more information in the law or in a roadmap regarding this assessment: end date, what frequency, scope, methodology, publication
- ➢ Policymakers and NEURC should strive to engage stakeholders in the assessment and publish the assessment as it contributes to raising awareness, sharing policy knowledge and creating feedback loops by developing a specialised policy network

[10] Inter alia reviewing the laws on Cooperation and on Consumer Cooperation, on Electricity, on Heat Supply, on the principles of the electricity market, on state regulation in the sphere of utilities, more generally consumer protection laws.
[11] Paraphrasing one participant in our discussion workshop, it is quite surprising that in many countries citizens and other stakeholders have hardly been consulted, or not at all, on the design and legal implementation of a concept that would be fundamentally based on their participation.

- NEURC should consider using the Model Assessment Tool developed by the ECOLOG institute in 2022 to conduct the assessment and exchange with regulatory authorities which already conducted such an assessment

- Removing unjustified regulatory and administrative barriers as well their monitoring

A logical follow-up to this assessment is to remove identified barriers. When transposing, it is important for policymakers to address those potential barriers if needed, but also to specify who is responsible for removing those obstacles. The current draft does not elaborate on this aspect. However, we can assume that NEURC will again play a central role. First, being tasked with the assessment, it should provide recommendations to remove these barriers. Second, the EMD states that the regulatory authorities by default are tasked with monitoring the removal of barriers for REC/CEC and relevant activities. Furthermore, as the regulator, NEURC is also responsible for licensing procedures and for setting rates. As such, it will be the main recipient of its own recommendations. While it can create synergies if NEURC plays a central role in identifying, removing and monitoring the removal, it can also be a risk in terms of transparent governance and accountability. Policymakers could consider splitting the duties by tasking another authority with monitoring the removals (e.g., SAEE) or by requiring the publication of the assessment and the monitoring to create public accountability.

Recommendations

- Policymakers should clarify in the draft law that the entity in charge of carrying the assessment should also provide recommendations to remove unjustified barriers, or remove them itself, to the extent that it is part of its competency
- Policymakers should clarify who is responsible for monitoring the removals of barriers

Furthermore, it is important to remove unjustified barriers, yet new ones should not be created in the process. In this regard, policymakers need to pay attention on how future legislation could impact energy communities. Considering asymmetries in advocacy resources, policymakers should actively seek the opinion of energy communities and their advocates or establish an advisory working group that can be consulted regularly. It is imperative to integrate energy communities in existing policy networks and governance structures and consult them when elaborating strategic plans. The point is that policymakers have a role in shaping governance and in creating accountability mechanisms that go beyond policymaking. This aspect is valid for national public authorities as well as regional and local authorities.

> *"Well, at the moment, the only problem is that it is very, very difficult to get in touch at the state level." Interview 18, representative of a NGO*

In general, the current draft law does not make any reference to removing unjustified barriers other than reiterating principles of non-discrimination or equal treatment, nor does it identify specific barriers. In the following we elaborate on certain aspects of the enabling framework and the removal of barriers. Most of these elements are currently not addressed in the current draft to the best of our knowledge.

- Fair, proportionate and transparent procedures

As energy communities have limited organisational resources compared to other players, it is important that efforts dedicated to administrative procedures are limited. To this end, exemptions or simplified procedures can have a powerful impact on the development of energy communities.

Meanwhile, introducing a specific registration procedure can also have a beneficial impact on energy communities. Its aim should be to check whether legal entities comply with the definition and governance standards provided by law in order to safeguard the specificities of energy communities and prevent corporate abuse. Acquiring this status could be the prerequisite to benefit from exemptions or access specific support (see below support schemes). Depending on the type of legal entity chosen, energy communities are likely to apply to a specific registration already (for associations, cooperatives, company etc.) and meet certain criteria already (not-for-profit, autonomy). The registration procedure should take into account those existing registrations in developing a simplified application form.

The current draft does not mention a registration procedure. Interestingly enough, however, a previous version of the draft required CEC to apply to the regulatory authority to acquire the status, meaning that a registration procedure to qualify as a CEC and the monitoring and enforcement of the specific governance standards of energy communities was planned. As best practice, we would strongly recommend the introduction of a registration procedure either in the law or through bylaws.

Focus: licensing and registration procedures

- Registration as an energy community (strong governance standards)
  - Energy communities in Belgium (Brussels region) must register with the regulator online by submitting an application form, a list of members, its statutes and a document proving that certain legal formalities and governance standards set by the transposed law are met. The authority has to provide a decision within 60 days.
  - In Hungary, energy communities must apply to the registration office 75 days before the start of the activity by providing their statutes and a declaration of compliance with governance standards, a list of activities and the list of substations impacted by its creation. Any changes should be notified within 30 days. The authority runs a compliance check and publishes a list of EC.
  - In Austria, an energy community registers online on a portal provided by the Coordination Office by uploading
  - a notification as an energy community (weaker or burdensome governance standards)
  - In Luxembourg, the creation and dissolution of a REC must be notified to the national regulatory authority and the DSO. The REC must notify both players with an updated list of its participants, suppliers, production units and an energy report comprising production and consumption data on a yearly basis.
  - In Austria, after acquiring a legal form, an energy community registers online on a portal provided by the Coordination Office by uploading its founding documents/articles of associations. They also have to notify their establishment to the DSO in addition. Registered energy communities are shown on a map.
- Simplified licensing, other administrative procedures and regulatory sandboxes

Independently of energy communities, the RED requires Member States to simplify procedures to develop RES by establishing simple notification procedure for grid connections and single contact points for the permit-granting process of RES installations. It also introduced acceleration areas for REA for which administrative requirements are reduced. However, Member States could decide to further simplify this and other procedures for energy communities or small installations.

- In many areas (such as Luxembourg, Austria, some Belgian regions), shared electricity is regulated as self-consumed electricity or at least differently from supply, which means that the regulations for retail suppliers do not apply for energy communities organising energy sharing and energy communities can be exempted from licensing.
- Similarly, in the Netherlands, energy communities can produce energy without a license provided some conditions are met, e.g., the energy community does not exceed a number of supplied participants determined by the regulation, and the energy community does not supply more energy than it imports, meaning that supply mainly comes from its own generation installations and is therefore self-consumed. This legislation has been adopted after an executive order established a regulatory sandbox, which ran for four years.
- In Austria (Carinthia region), installations intended for emergency power supply or with a limited peak capacity (up to 500 kWp) can benefit from simplified construction permits.
- France has introduced reduced grid access connection fee for small installations (under 500 kW) so that the grid rates cover 60% of this reduced fee.
- In 2022, Spain introduced a regulatory sandbox to promote research and innovation in the energy sector, aiming at developing flexible, decentralized energy systems for the efficient integration of RES, new and innovative business models as well as the participation of new players, including energy communities. The sandbox implements a two-way dialogue between implementers, the ministry and the regulatory authority.

▪ Combined procedures

Lithuania has streamlined procedures by stating that an REC/CEC, registered as a specific legal form (public body) automatically acquires the status of energy communities after acquiring a permit to produce electricity delivered by the regulatory authority. A similar process could be envisaged for heating communities.

Against this background, it is important to distinguish between the registration procedure specific to energy communities as a player and other procedures necessary to the implementation of activities/market roles. Ideally, the different procedures would be streamlined and reduce the burden for energy communities. Several implementation options are possible.

Recommendations

- (either) policymakers introduce legal requirements for responsible players (regulatory authority, DSO) to transmit relevant information, which an energy community has provided to one of them as part of a procedure
- (or) policymakers introduce a single contact point for energy communities. As an online platform, responsible players (DSO, regulatory authority) would have direct access to information provided by energy communities. As an organisation, managed by one of the players or a third-party, the managing authority would be responsible for transmitting relevant information to relevant parties.

Additionally,

- Policymakers or public authorities responsible for designating acceleration areas for renewables could decide to give priority to community projects in those areas
- Policymakers should establish regulatory sandboxes to address certain issues (e.g., grid congestion), which would be open to energy communities
- Introduce simplified registration processes for guarantees of origin for small installations and REC
- Introduce simplified registration processes and reduced registration fees for small installations and REC to issue guarantees of origins

- Charges and fees and fair contribution to energy system costs

Policymakers must find a balance between incentivising the development of energy communities and certain activities, such as energy production and self-consumption, while ensuring that investment in infrastructure can still be sustainably financed. For a long time, the incentives came through reductions in network charges and other fees and levies. In some countries, other network users consequently bore a surcharge, prompting questions of social justice and sustainability around those incentives. Therefore, the EU requires Member States to conduct a cost–benefit analysis to determine an adequate contribution to energy system costs while retaining incentives for a large share of consumers to participate in self-consumption, energy sharing and demand-response schemes. Energy communities should still contribute to energy system costs, a fortiori because they often still use the grid by feeding in the excess or receiving residual supply.

The current draft law states that CEC/public energy associations (and therefore REC as they have the same rights and obligations) must pay a network fee (for transmission and distribution services) for self-consumed energy. There is no elaboration on how this fee can be cost-reflective and there is no further elaboration on other charges and fees. Therefore, we cannot conclude whether this fee will create incentives or disincentives for self-consumption or energy sharing in energy communities.

In general, policymakers have tasked the national regulatory authority to conduct a cost–benefit analysis, without however providing a timeframe. In practice, very few countries have conducted such an analysis. Yet some countries have still introduced specific network rates.

Focus: incentives connected to network rates/energy system contribution costs

- Prior to carrying out a cost–benefit analysis, Austria has implemented a regulatory framework for energy sharing differentiating between grid levels. Subsequently, different rate reduction categories have been introduced. The added-value tax is also reduced in some cases. The regulatory authority has since published a cost–benefit analysis (in April 2024) that confirms that the existing rate structure is adequate for energy communities to contribute fairly to energy system costs. Even though Austria had a very dynamic development of energy communities and their activities, they still represent a negligeable share of the energy production and consumption. Therefore the introduction of reduced fees generated minor differences in revenue for the system operator and had no noticeable impact on grid fees overall. The regulatory authority will continue to monitor for future adaptations of the network rate structure, if necessary. The analysis also included energy sharing in the gas sector, i.e., for sharing renewable gases, but notes that there are too few examples to have conclusive results.

- The regulatory authority in the Brussels region (Belgium) has conducted a cost–benefit analysis based on three different scenarios (from low to high development of energy communities and energy sharing). The results show that the benefits exceed the costs for the DSO and thus for network users when a critical mass of projects is reached and they contribute to reducing peak consumption. In this regard, the regulator concludes that the development of energy communities and energy sharing is imperative to reach this critical mass. Moreover, considering that energy communities can provide other benefits to consumers and society.
- Several countries have established or plan to establish specific rates for self-consumption, energy sharing or storage. In France, there is a specific rate for self-consumption. Italy has introduced a premium rate for self-consumption (hourly basis) under the same primary grid station (medium voltage) for installations under 1 MW owned by REC or participating in collective self-consumption. In Spain, energy sharing is regulated as self-consumption. For now, no taxes and no fees are paid for energy shared.

The aspect of network charge and fair contribution to system costs will greatly depend on how the reconstruction of energy infrastructures will be financed in Ukraine. It is a complex topic. However we would make the following argument. If international donations can be channelled towards network reconstruction, this opportunity could help avoid raising network charges on consumers and also prevent detrimental social and economic effects overall. Furthermore, providing incentives for self-consumption and energy sharing through reduced fees can have a positive impact in supporting the emergence of decentralised generation in the hand of local players and in incentivising self-consumption and demand-flexibility, grid congestion can be reduced. Energy communities would thus contribute to the reconstruction in two ways: by reconstructing generation capacities and by supporting an efficient management of the network.

Against this background, it will be imperative to conduct a rigorous cost–benefit analysis but also to discuss transparently the trade-offs, tensions and consequences of certain incentives.

Recommendation

- ➢ Policymakers should task NEURC to set incentives regarding network charges for self-consumption/energy sharing, which would be monitored in an ex-post cost–benefit analysis

- Cooperation with DSOs and facilitation of energy sharing

The RED and EMD requires DSOs to cooperate with energy communities and facilitate electricity transfers within the community. There is no further elaboration in the first generation of legislation but the second generation, i.e., the revised EMD, has introduced a specific article on energy sharing.

In Ukraine, as in other countries, tensions and complaints from energy communities with the DSOs are common in relation to the length of the registration/grid connection process, as well as the responsibilities to provide smart meters to active consumers or to share data.

The draft amendments introduce a comprehensive provision according to which DSOs are required to cooperate with CEC, and thus indirectly REC, to 'facilitate the distribution of electricity within these associations.' To this end, the national regulation authority is tasked with establishing payment terms and to establish a procedure that would require DSO to share information on the activities with the regulation authority. While this is commendable as a first step towards enabling energy sharing, it is insufficient at this stage and should be developed further in law or in bylaws.

Focus: relation to DSOs and energy sharing

- The rights and duties of DSOs in Luxembourg have been specified through law and bylaws. The DSO is in charge of collecting relevant data and sharing it with the REC and the other suppliers. It must establish an IT platform, which the REC can access to check on production and consumption data and report monthly on the shared energy distribution. The energy community is free to determine the allocation key between members.
- In Austria, the law has established rights for energy communities, i.e., obligations for DSOs regarding the response times for requests to access the grid (within two weeks) and smart meter (within two months). Like in Luxembourg, the DSO is also responsible for collecting and sharing data with the energy community, free of charge, and for allocating the share between members.
- France has established duties for DSOs regarding energy sharing not only in terms of electricity, but also gas and district heating, which is framed as collective self-consumption.

As the numerous guiding resources on how to implement energy sharing have been published, we will not provide detailed recommendations on this aspect and refer back to other publications below. Therefore, our recommendations focus on other aspects.

Recommendations

- ➢ Policymakers should anticipate the transposition of the right to energy sharing and develop a regulatory sandbox or pilot programme to test this
- ➢ Policymakers should consider giving priority roll-out of smart meters to members of energy communities
- ➢ Policymakers should impose response deadline for procedures
- ➢ Policymakers should clarify the judicial and non-judicial mechanisms available to energy communities (and active consumers) to enforce their rights vis-à-vis DSOs

- Tools to facilitate access to information and capacity-building

According to the RED, Member States, with the help of regional and local authorities, should ensure that energy communities are provided with relevant information and guidance on how to create and operate an energy community as well training and capacity-building opportunities. Information should relate to the rights of active customers, the benefits of being engaged in an energy community and the technical and financial information relevant for implementing relevant activities. As part of the enabling framework, public authorities should receive regulatory and capacity-building support to set up and enable energy communities on one hand and to participate in energy communities themselves on the other. This support is necessary considering that public authorities, a fortiori municipalities, have limited (in-house) resources and expertise. Meanwhile, their responsibilities in implementing the energy transition (e.g., regarding local energy planning) increase.

> *'I do not believe that it will be local authorities in the near future [responsible for promoting the development of energy communities], because they simply do not have the capacity to do it. You have to deal with it and meet with people all the time, and so on. That is, local authorities simply cannot report on their activities in a quality manner. Therefore, it seems to me that we need to have a department within the Ministry of Infrastructure or the Ministry of Energy that is*

responsible for this and that is engaged in creating conditions for such communities, responding sensitively to requests, criticism, and so on, so that it is in constant contact with the beneficiaries and receives feedback from them on what needs to be done to make these communities work.' Interview 11, representative of a NGO

The draft amendments do not cover this aspect at all.

Looking at other countries, experience has shown two transposition trends.

First, the government can task an existing authority or agency with organising an online information portal, which can also be used to facilitate mentoring or access to expertise. State energy agencies are often involved in this option. In some cases, these online information portals emerged without the involvement of policymakers but through collaboration with EU funded projects. For example, the SHAREs project has established six national information hubs (Austria, Bulgaria, Germany, Georgia, Croatia, Hungary) acting as gateway to other resources (Figure 13).

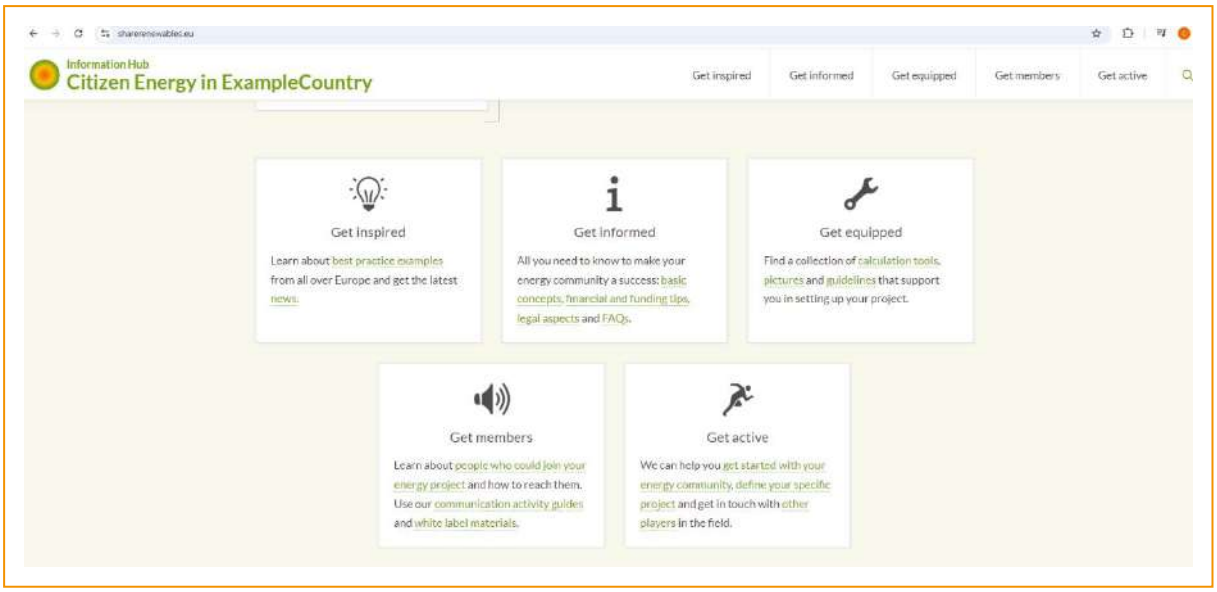


Figure 13 Visualisation of the blueprint for a national information hub (Source: SHAREs project)

Otherwise, the government can decide to fund local authorities or NGOs to provide these information and capacity-building resources. In this case, the transposition options often leverage synergies in existing expertise and structures, if they exist.

Both options are not mutually exclusive. On the contrary, they can be highly complementary and build upon each other.

Regarding Ukraine, we want to highlight that some of those activities are already taking place through organisations and projects mentioned in section 2.3 (Project Citizen Energy for Ukraine, Khmelnytskyi Energy Cluster). The experience of those initiatives should be leveraged and scaled up.

'Let's have more experts on this topic and more information, perhaps a campaign. And also, plus, plus the legislative framework.' Interview 8, representative of a LSG

'And there should be fewer obstacles for those who want to do this. And here we can also add that there should be professional training for the population. For this purpose, we need to create educational institutions that can provide it. We need to start with this, and to teach more about it in schools, and educational institutions that could train lower-level specialists, such as ordinary locksmiths, electricians, but trained in the right way so that they understand these issues. These are some energy mechanics, maybe even engineers, because there is probably no need for many engineers. There may be one specialist for a large city, but you need a lot of maintenance staff.' Interview 8, representative of a LSG

Focus: access to information, capacity-building and cooperation with municipalities

- The government in Austria used public funds to support the establishment of the Coordination Office for Energy Communities in 2021. This one-stop shop (OSS) is described in thorough detail in the annex (Case OSS 2). It has also set up a programme supporting local authorities to engage in the energy transition, including by participating in or supporting energy communities.
- In Ireland, the Sustainable Energy Authority has been appointed as a OSS. It supports energy communities by referring them back to mentors and experts. It has also a developed a resource toolkit. The authority also implements a financing programme for eligible energy communities – all of this, despite the fact that the transposition of energy communities has not yet happened in Ireland.
- In Belgium (Brussels), the government has appointed an NGO as facilitator, providing legal, technical and financial information to support energy community leaders. It also provides guidance and workshops to municipalities.
- France plans to increase by 50% the number of local governance advisors in regions to support capacity-building of municipalities.
- Spain has published guidance for the promotion of RECS with municipal participation.

Recommendations

- Launch a public campaign, e.g., by framing the participation of citizens and the creation of energy communities as an act of resistance and increasing resilience
- Policymakers, a state agency or an NGO could develop a national information hub using the freely available blueprint of the SHAREs project
- Use public funds to translate or adapt existing resources on energy communities
- Fund energy community enablers (state agencies, regional and local authorities, civil society organisations, service cooperatives/cooperative OSS) to provide information and capacity-building
- Build upon existing initiatives first to deliver short-term results
- Plan a one-stop shop, which could create new job opportunities and vocations for trained individuals
- Introduce by law a requirement for public authorities to introduce community bidding criteria in public procurement procedures

- Tools to facilitate access to finance and support schemes

This mandatory element of the enabling framework for REC is not sufficiently addressed by the draft amendments. The current draft amendments foresee that renewable energy communities can receive support based on the results of auctions. However, it does not hint at enabling measures in this regard, e.g., by introducing community-focused bidding criteria, tailored bidding windows, or direct support for small installations. As we dedicate chapter 6 to the financial aspects and have already described other existing support schemes in 5.3.1, we will not go further into details here. However, we will summarise some recommendations here.

Recommendations

- Provide guarantees for citizen-led projects, such as through green and low-interest/soft loans
- Policymakers should consider how the revenues associated with the introduction of an Emission Trading System in Ukraine can be used to support measures with a social impact and the development of energy communities
- Create specific funding calls for projects within support programmes for energy communities or provide them with a premium (i.e., additional funding rate for legal entities whose registrations fit the definition of energy communities according to the transposition of EU law)
- Develop provisions facilitating the access to PPAs for small players
- Encourage public institutions, and in particular local self-governments, to use green public procurement criteria for energy communities
- Monitor the planned publication by the European Commission on green public procurement criteria

- Accessibility to energy communities and social inclusion

Any households willing to join an energy community should be able to do. However, experience has shown that categories of the population (low-income and vulnerable households, tenants, women) are generally underrepresented in energy communities. An enabling framework would address specific barriers of participation while ensuring that participation remains voluntary.

The draft law does not cover this aspect. Likewise, very few EU countries have introduced specific provisions or incentives on this aspect so far.

Focus: accessibility and social inclusion

- Spain has set up a fund of €40 million to promote the development of REC. Fighting energy poverty is one of the criteria to receive financial assistance under this fund. Through the involvement of municipalities, the participation of vulnerable households is also prioritised in many REC. Finally, national strategic documents mention the promotion of collective (self-consumption) schemes, including energy communities, as a tool to fight energy poverty.
- In Greece, the law states that energy communities can support energy poor households even if they are not participants of the community. More specifically, an energy community can provide electricity for free through virtual net metering projects, even if the consumers are not members.
- Denmark has no specific measures explicitly addressing the participation of low-income and vulnerable households but has a long tradition of involving tenants in energy community projects. Similarly, Ger-

many has a support mechanism for landlord-to-tenant electricity. A landlord or an organisation commissioned by the landlord to operate a PV installation can receive a premium to sell the energy produced directly to the tenants. This scheme is not directly related to energy communities but tenants could decide to create an energy community to purchase the electricity on behalf of its members and share it, or even to operate the installation itself and receive the premium.

Recommendation

- ➢ Provide financial support targeting low-income households and other specific categories (e.g., veterans, IDPs, refugees) to incentivise their investment in energy communities

- Governance, reporting and monitoring

Governments have to report on the establishment and implementation of the enabling framework in their integrated national energy and climate plans (NECPs) in order to allow for transparency and EU monitoring of the progress to promote REC. This aspect is mentioned in the draft amendments and Ukraine has effectively reported on the policy status quo of energy communities in its first NECP, which was adopted in June 2024.

In the future, the government could further elaborate in its reporting based on the results of the aforementioned assessment of barriers and potential, e.g., by including voluntary quantitative targets on the number of REC and CEC created by a certain date, a trajectory of the share of energy produced and consumed by energy communities, or the contribution of energy communities to Zero Emissions Buildings, in national strategies and its updated NECP.

This brings us to our final building block, the importance of which we had hinted at on several occasions. A key aspect for promoting energy communities is to have a means to check compliance with the chosen legal definitions, e.g., through a registration process, and to track their development by developing a monitoring and data collection framework.

As mentioned, the draft amendments do not elaborate on those aspects.

NEURC is likely to be tasked with the monitoring of and reporting on several aspects regarding energy communities or the establishment of energy sharing.

Recommendations

- ➢ Clarify by means of bylaws the registration procedure and how it relates to other existing registration procedures of legal entities or licensing of activities in order to avoid redundancies and additional administrative load for energy communities
- ➢ Set up a registry, a monitoring and data collection framework
- ➢ Check compliance with the definitions for energy communities applying to support programmes until the effective establishment of a registration procedure and the registry
- ➢ Introduce requirements to include provisions on energy communities and involve energy communities in the establishment of national, regional and local planning documents (regarding RES, energy efficiency, reconstruction, spatial planning, fair transition, etc.), such as the National Energy and Climate Plans, Sustainable Energy and Climate Action Plans of municipalities, the National Building Renovations Plans, Local Heat Plans, and consider whether community projects should be given priorities compared to others, and if so, for which reasons and under which conditions

5.4 Summary and key recommendations

Transposing is a complicated balancing act that has certain pitfalls. One pitfall is to not recognise where Member States have a responsibility to further clarify provisions of the EU directives. While a copy/paste design for the EU definition can be a fast way to align with EU requirements, it is often insufficient. Regarding Ukraine, an alignment with preexisting definitions is not yet effective, leaving a lot of legal uncertainties floating in the air and an open door for abuse, which can be detrimental to the effective development of energy communities in the long-term. Another pitfall is to restrict the development of energy communities by focusing on specific aspects. Here we recommend that policymakers recognise the role of renewable energy communities in the heating and energy efficiency sector, and not just in the electricity sector. The government should also try to anticipate the implementation of the second generation of EU legislation.

To transpose effectively, policymakers need to be aware of certain trade-offs and their implications and make decisions based on evidence when possible. It is also important for policymakers to explain their reasoning transparently in order to foster trust, acceptance and support for those changes, especially from new and somewhat inexperienced players.

We have not presented a tailor-made or turnkey solution to develop a policy framework in Ukraine here, but merely a stepping stone. Developing a policy framework is an iterative process based on learnings. Not every recommendation presented in this study can and should be addressed in the short term. Therefore, we decided to highlight three overarching measures to prioritise and structure policymaking efforts.

Focus: Three key overarching measures for policymakers to promote the development of energy communities in Ukraine

- **Measure 1: Establish a pilot programme**

  'And there should be, of course, at the state level, some agreements or memorandums on financing such [pilot] projects. That is, it should be either preferential financing or, as was the case with heat and modernisation, a state program was adopted, and apartment building associations could apply for and receive low-interest loans for heat and modernization.' Interview 3, representative of a LSG

The government should consider establishing a pilot programme to promote the development of energy communities. This programme could have a broad focus, allowing energy communities to participate regardless of activities, sectors and RES technologies. Alternatively, it could decide to narrow down the focus to energy communities interested in introducing energy sharing.

The programme should comprise different measures:

- Financial support in the form of grants or low-interest refundable loans for emerging energy communities. Here we refer to the best practice cases presented in the annex
- Technical assistance and capacity-building from expert organisations
- Regulatory sandbox regarding certain administrative procedures, participating in tenders, certain EU requirements (e.g., proximity criteria as a governance standard and for activity implementation)
- Lead by example: introduce a community-criteria when tendering the installation of RES plants or the renovation of governmental and other public buildings

- **Measure 2: Establish a monitoring, reporting and compliance framework**

The government and the regulatory authority should develop a framework to effectively register and monitor the development of energy communities and their impact on certain aspects of the energy system (e.g., grid costs). To this end, policymakers should first elaborate on the governance standards (open and voluntary participation, proximity, effective control, autonomy) or task energy communities to do so.

- **Measure 3: Develop a roadmap and a policy roadmap**

As the development of a policy framework will require some endurance and depends on the mainstreaming of the topic across many policy circles, the government should develop a roadmap. This roadmap should include:

- The adoption of (non-binding) policy targets on the development of energy communities
- Planned milestones on a timeline (e.g., assessment of the potential and any barriers)
- Mapping relevant governmental stakeholders, policies and funding programmes among/in which energy communities should be mainstreamed
- The creation of a stakeholder working group that is consulted regularly regarding implementation of the roadmap

Resources: where to start

- On the barriers and obstacles for energy communities:
  - Report on 'Barriers and action drivers for the development of energy communities and their activities' by the Energy Communities Repository (Link)
  - Handbook on identified barriers and enables from the SHARES project (Link)
  - Analytical note on improving the legislative and regulatory conditions for the development of green energy communities in Ukraine by the Citizen Energy in Ukraine project (Link)
- On community washing and corporate capture:
  - Working paper entitled 'Rethinking energy communities for a just transition' based on the case study of La Estrecha Solar Community in Columbia (Link)
  - Publication of the report on corporate capture of energy communities commissioned by Friends of the Earth Europe (Link)
  - A two-part podcast on corporate capture in energy communities by Enlit (Link)
- On the transposition of REC/CEC:
  - The explanatory note on energy community definitions from the Compile project (Link)
  - The Q&A document entitled 'What are citizens energy communities and renewable energy communities?' from REScoop
  - The policy guidelines on energy communities from the Energy Community Secretariat (Link)
  - REScoop transposition tracker (Link)
  - Transposition guidance document by REScoop.eu and Client Earth (Link)
  - Energy community repository – policy database and roadmap to developing a policy and legal framework that enables the development of energy communities (Link)
  - RESCoop Briefing for enabling framework for RECs (Link)
- On the implementation of energy sharing
  - Report Energy sharing for energy communities – a reference guide by the Energy Communities Repository (Link)
  - Study Energy sharing in Germany – from concept to implementation by dena (Link)
- On the implementation of one-stop shops
  - Guidance note on Setting up community one-stop shops by the Energy Communities Repository (Link)
  - One-stop shops for energy communities: mapping service design attributes, synergies and challenges (Link)
- On the transposition for the second generation
  - Briefing on the revised RED by REScoop (Link)
  - Briefing on the revised EED by REScoop (Link)
  - Briefing on the revised EPBD by REScoop (Link)
  - Briefing on the Social Climate Fund by REScoop (Link)

Resources: where to start

- On how to enforce the rights of energy communities
  - Report Enforcing the rights of energy communities – Overview of judicial and non-judicial mechanisms at EU and national levels by Client Earth (Link)

For an overview of other relevant resources: Browse resources from the Energy Community Platform in the area Political & legal

6 Financing energy communities: reasons, motivations, instruments and supportive framework

'But you still need to understand what financial benefits it will have. And if prices go up in the future anyway, it's obvious that energy communities will be profitable.' Interview 17, representative of MinEnergo

What you will find in this chapter

This chapter contains an overview on:

- For policymakers: why energy communities may need public support and guidance to access financing, how to create a funding scheme, how to adapt a national funding scheme, how to lobby other institutions to adapt their funding schemes, how to provide guidance
- For financial institutions: an explanation on why energy communities need to be served with suitable financing products
- For energy communities: how to mobilise equity, where to look for external funding support

To read this chapter, we assume some knowledge on basic finance or financing of RES installations. If this is not your case, we recommend the reading materials listed at the end of this chapter first.

As mentioned in the introduction, the total cost of reconstruction and recovery in Ukraine over the next decade is currently estimated at around €446 billion, of which 17% falls on the housing sector and 10% on the energy sector, respectively (World Bank, 2024). In the same report, the authors emphasise that the private sector can play a critical role and that its contribution can be substantially increased, provided certain reforms and accompanying public interventions are put in place. In this regard, supporting the development of energy communities, including through financial instruments, can help mobilise local private capital.

As we have shown in section 3.2, energy communities implement projects that can yield financial gains alongside other types of benefits. These types of projects may become more profitable if regulatory barriers are removed. So far, we have not discussed how those players and their actions are funded. While the assumption is that participants will fund those actions by themselves and reap the benefits, the reality is more complex. It is therefore important to ensure that financing instruments that cater to the needs of energy communities are put in place to support their development.

The first part here explains why energy communities need a dedicated financial framework and accessible funds, even though they are presented here as an economical solution to build a better energy system. In the second part, we present our empirical findings for financial support for citizen participation in Ukraine. The final part of this chapter suggests a number of funding instruments and international funding sources that can be used for developing an energy community support framework.

6.1 Why do energy communities need financial support to develop in Ukraine?

> *'Therefore, to create an energy community, there must be economic feasibility. Even if this solution is not economically feasible, there should be financial incentives.' Interview 16, representative of a NGO*

Nobody would want to invest in a project that would not pay for itself sooner or later – neither private citizens, municipalities and SMEs who join in an energy community, nor financial institutions like banks or other type of investors.

Energy is a very specific market commodity and policy area, so that energy projects are generally co-financed. On one hand, many projects require significant capital investment before they start producing revenues. RES installations have high upfront costs, which few players can finance by themselves (i.e., through equity[12]). Thus, it is common for project developers to also consider debt, i.e., loans, or grants to cover the initial investment and create an attractive business case. It is therefore sensible and fair to provide market conditions for small investors as well that will enable them to boost the green reconstruction of the energy infrastructure. This can pay off in several respects. Firstly, the expectations of operating profit are higher for commercial players in the energy system, which therefore requires a higher state subsidy to trigger an investment decision. Secondly, energy communities also fulfil social functions and strengthen local value creation, which can relieve the responsibilities on the state's social spending in the long term.

[12] In principle, there are two basic concepts in finance that go hand in hand for any venture: equity and debt. Equity represents the value of a company. Anyone who contributes equity capital receives a share in the organisation, in this case the energy community, and also acquires a certain amount of influence in decision-making, and in some cases dividends. Those who provide the energy community with debt capital, on the other hand, merely do so on a temporary basis and demand reliable repayment of the loan.
In project financing, a third form is considered. Grants and donations are non-refundable funds usually linked to certain conditions. They are usually used for projects that are financially unviable but have a certain social, economic and environmental impact.

In this section, we intend to explain in further details the reasons behind providing financial support to energy communities and what are the obstacles that energy communities face in financing their activities. Interestingly, and as observed by many reports, the obstacles are not necessarily of purely financial nature.

6.1.1 Providing financial support to energy community projects

> *'Another problem is that people and companies are poor. And who should finance this distributed generation during the war? In fact, the only option is grants. After the war, it can be other funds. These can be real investment projects, but there is a need for investment. It will be very large, and I do not believe that there are any institutions or segments of society in Ukraine that are able to bear this burden of investment in distributed generation in sufficient quantities now. This means that we will need to create conditions for attracting foreign investment, and it is unlikely that foreign investment will go to small facilities, i.e., small capacities. Financially, it is incomparably more difficult than financing large facilities.' Interview 11, representative of a NGO*

This quote summarises some of the challenges that energy communities may be facing for financing their project. The first argument why financial support is needed is not specific to energy communities nor Ukraine but relates to the type of projects implemented and the benefits they yield.

The current cost structure in Ukraine is not incentivising investments in RES, if they are not supported. First, energy from the grid sold to consumers is comparable to the levelized cost of electricity (LCOE) from RES, i.e., the generation costs. Even though the government has recently doubled the rates for households (4.32 hryvnias/€0.10 per kilowatt-hour), the current LCOE of small rooftop PV with battery system ranges between €0.06 and €0.22 per kilowatt-hour (Reuters, 2024; Kost et al., 2024). Second, current leading interest rate are very high in Ukraine (around 25%) (BBC News, 2022). While this measure protects citizens' savings against inflation, this reduces incentives for investment in RES.

However, this challenge not only applies to small private investors like energy communities, but also to DTEK, the largest distribution grid operator and plant operator in Ukraine, and any other project developer. This is why RES support schemes are necessary. Ukraine has introduced the green rate in 2009, according to which the state 'guaranteed buyer enterprise' ensures a price at which the plant operator can sell the energy to the grid. The costs are cross-financed by other state income sources in order to maintain the low electricity price, which is important in terms of social and economic considerations.

An important aspect to keep in mind is that RES projects have different development stages: 1) inspiration/preplanning, 2) preparation/planning/development, 3) implementation/construction, 4) operation and maintenance, 5) decommissioning, repowering. Each stage is characterised by its own challenges, different levels of risk and different types of financing. In general, much focus is placed on how to finance phase 3, as it is the most capital intensive phase. This is the phase where attractive loans and grants are the most available. Phase 4 is where possible revenues are earned and where certain support schemes, i.e., for RES, are paid. However, to get to phases 3 and 4 in the first place, e.g., being able to invest, construct and operate a RES installation, project developers have to get through phases 1 and 2 first. The earlier the stage of project development, the higher the risks and the higher the commitment of own resources. To ensure that a maximum of projects is implemented, it is necessary to provide financial support in the early stages of project development as well.

In conclusion, the first argument to provide financial support to energy communities is not related to their nature but to the type of projects they implement. The first step to ensure the development of energy communities in Ukraine is to improve the investment framework in general and for energy-related projects in particular. Furthermore, policymakers and funding authorities must ensure that existing schemes do not unjustifiably discriminate against energy communities, e.g., by omitting them in the list of possible beneficiaries, and that all stages of project development are appropriately covered.

Energy communities face the same obstacles as other players and rely on private and public financial instruments to implement their projects. The implication is that they should at least receive the same financial support and investment certainty provided to other players to develop certain projects. On this basis, energy communities can use many existing schemes and have, at least theoretically, already plenty of financial resources available to them. In Ukraine, even more financing sources will become available under a build-back-better framework.

Recommendations

1) Avoid discriminatory provisions in existing/developing funding schemes

- Screen existing funding schemes to ensure that the conditions or wording do not prevent energy communities to apply as beneficiaries, e.g., because the funding programme mentions a list of eligible players omitting energy communities or legal forms available to them
- When developing new support schemes, check whether energy communities can apply to them

2) Ensure that financing instruments are adapted to project development

- Ensure that existing funding schemes are not concentrated on the phases 3 and 4 of project development but also include phases 1 and 2
- Ensure that the types of financing available fits the project development stage

6.1.2 Recognising specific financial needs for energy communities

Theoretically, energy communities have the same opportunities for co-financing their projects as traditional commercial players. Yet, the practice-oriented literature hint at specific challenges. Many EU-financed projects have published reports, handbooks and guides showing why energy communities require specific support to finance their projects. We show in this part that energy communities may have difficulties to access financing because of their inherent characteristics and how those models are perceived by financial institutions. In this sense, the obstacles are less financial and more cultural or organisational.

First, energy communities may have difficulties to raise equity for multiple reasons, in particular in the early development stages. Lack of awareness, distrust, fear or risk may prevent a large share of potential participants to self-finance. Many households may not have sufficient capital to invest in the first place, because of lack of resources and high investment thresholds. There is an organisational challenge in raising equity from multiple individuals and managing interests. And finally, allowing external investors to the community has to be balanced with the goal of retaining control and autonomy. This means that energy communities invest a lot more resources in terms of stakeholder engagement to self-finance and uphold certain governance and inclusivity standards, in particular in the inspiration phase. Many more projects would see the light of day if they could cover the costs this resource-intensive phase.

Second, energy communities have limited resources, including a lack of experience and limited expertise on aspects of project development, including financial aspects. This means that energy communities may have organisational challenges in dealing with different aspects of financing their projects, such as developing a business case handling the complexity of financing across different stages, researching and comparing different financing options, or having knowledge and capacity to apply for funding. All those aspects mean that energy communities do not lack funding opportunities but rather have a reduced capacity to access available financing opportunities. As many grants and public funding opportunities are tied to specific rules, i.e., public procurement rules, reporting requirements, etc., many energy communities may face difficulties in managing those funds additionally to accessing them.

Third, energy communities suffer under the comparison with other projects and players in the eyes of traditional financial institutions. Energy communities implement small projects, often tied to one specific area. This means that their project may not meet investment or profitability thresholds or expectations of financing institutions. It also means that they are less able to diversify risks and provide guarantees. Many traditional banks have limited experiences with energy communities, and find they lack a credit history and have governance processes, which are unusual or perceived as complicated. Energy communities are not perceived as legitimate market players and an effective economic alternative. Thus, financing institutions may ask for additional requirements, increasing project costs, or refuse to provide financial support, as small and medium-sized loans are less profitable. Therefore, energy communities have difficulties accessing traditional financing, in particular debt financing.

This section aimed at showing on which grounds energy communities require co-financing and why they need specific support to finance their projects. In general, the characteristics of energy communities, or how those characteristics are perceived, make them less able to access adequate financing without additional support. In the subsequent sections, we will detail further adequate financing instruments and ways to provide additional support. This support should not be limited to financing investments on energy production capacity and the like. Energy communities may require financing to emerge in the first place or conduct preparatory work for their activities. This support should also not be limited to purely financial instruments. Providing guidance about financing instruments may be as important, if not more, to ensure the development of energy communities.

Recommendations

- Establish a guide to financing energy communities in Ukrainian, summarising existing publications and adapting to the Ukrainian context, e.g., by including examples of funding instruments
- Provide a digital funding overview for energy communities that can be easily updated and referred to in the financing guide. Different implementation options can be considered and combined.
    - Option 1: integrating the funding overview in a website dedicated to energy communities
    - Option 2: integrating energy communities as a category/search results in a general funding databank or in a first step in a funding database dedicated to recovery efforts

Focus: the German Funding Databank

The Federal Ministry of Economic Affairs and Climate Action of Germany has established a general funding databank as an online platform. It presents funds provided by governments and their public development banks from the national and regional level. It also includes certain EU programmes, such as the Connecting Europe Facility.

Information on funding programmes is summarised under the following categories: type of financing (how is the project financed), funding area (what is financed), funding territory (where can the project be implemented), beneficiaries (who can be funded), funding authority (who is funding). It also provides contact information, a short description, and some information on legal requirements and the legal basis for the fund. Users have the possibility to pin relevant funding programmes to print or send the information.

The 'News' tab includes relevant press releases from the Ministry on deadlines, modifications of funding programmes, start of new programmes, project implementation, etc. The databank finds between two and six different funding programmes when using the search function using different terms for energy communities.

6.2 Empirical results on reasons to invest in RES and energy communities

It takes a lot of resources to build and maintain an energy community as well as to finance concrete installations. As mentioned in chapters 3 and 4, energy communities can gather different types of players and yield different types of benefits. This also means that the reasons in participating and investing in energy communities can differ widely and that some players may decide to invest certain types of resources, such as time and expertise, while others may focus on providing capital (as shown in Figure 7).

In this section, we discuss why citizens would be motivated to provide capital or guarantees for energy communities to develop as well as which factors may influence their decision, such as the level of income, risk or its perception, values, trust in institutions or other players. We draw on elements from the literature, but primarily we analyse the responses of the representative survey we conducted.

6.2.1 Financial and non-financial motivations to invest

Individuals, referred to as citizens, consumers or households, may decide to provide capital on various motivations and pursue various goals. Investment behaviour is intrinsically linked to the benefits of energy communities provide, as presented in section 3.1. Motivations can be financial and non-financial and can refer to oneself (individual), to the community or the society (collective) or to others, such as individuals or communities (altruistic).

The traditional motivation for an investment is of a financial and individual nature. If someone invests, and, to some extent, risks their money in the construction of a wind turbine, they expect a return on that investment or other economic benefits, such as saving on energy costs. Similarly, someone investing in the renovation of their block of flats and therefore reducing their heating consumption accordingly ends up with lower expenses. These financial benefits are easy to calculate, but not always comparable to traditional market returns.

In energy communities, there is a very special balance between for-profit and non-profit reasons for members to participate. Whereas conventional financial theory focuses on the concept of return on investment, the scientific literature has also shown through empirical studies that investors in general and private households in particular have more varied motivations. Women and individuals taking a leadership role in an energy community are less motivated by financial returns (Holstenkamp, 2019).

Research has been conducted regarding people's non-financial reasons for investing (Foley-Wong, 2016; Ricciardi and Simon, 2000). These could be risk avoidance, such as becoming more independent from the energy system or a commercial provider, i.e., increasing self-reliance, or to create mutual dependencies and trust in a community, i.e., increase social cohesion. An investment can also be an expression of status, power or leadership. An investment can convey a sense of community and belonging. There are also many other motivations to invest, such as out of creativity or curiosity, for one's own legacy or philanthropy, not the least for the sake of protecting the environment. It is therefore crucial to understand what motivates individuals to invest when creating an energy community, i.e., to define its purpose.

As shown in Figure 14, when asked specifically what could motivate people to make a financial contribution if an energy community was created in their local community, respondents emphasised non-financial motives.

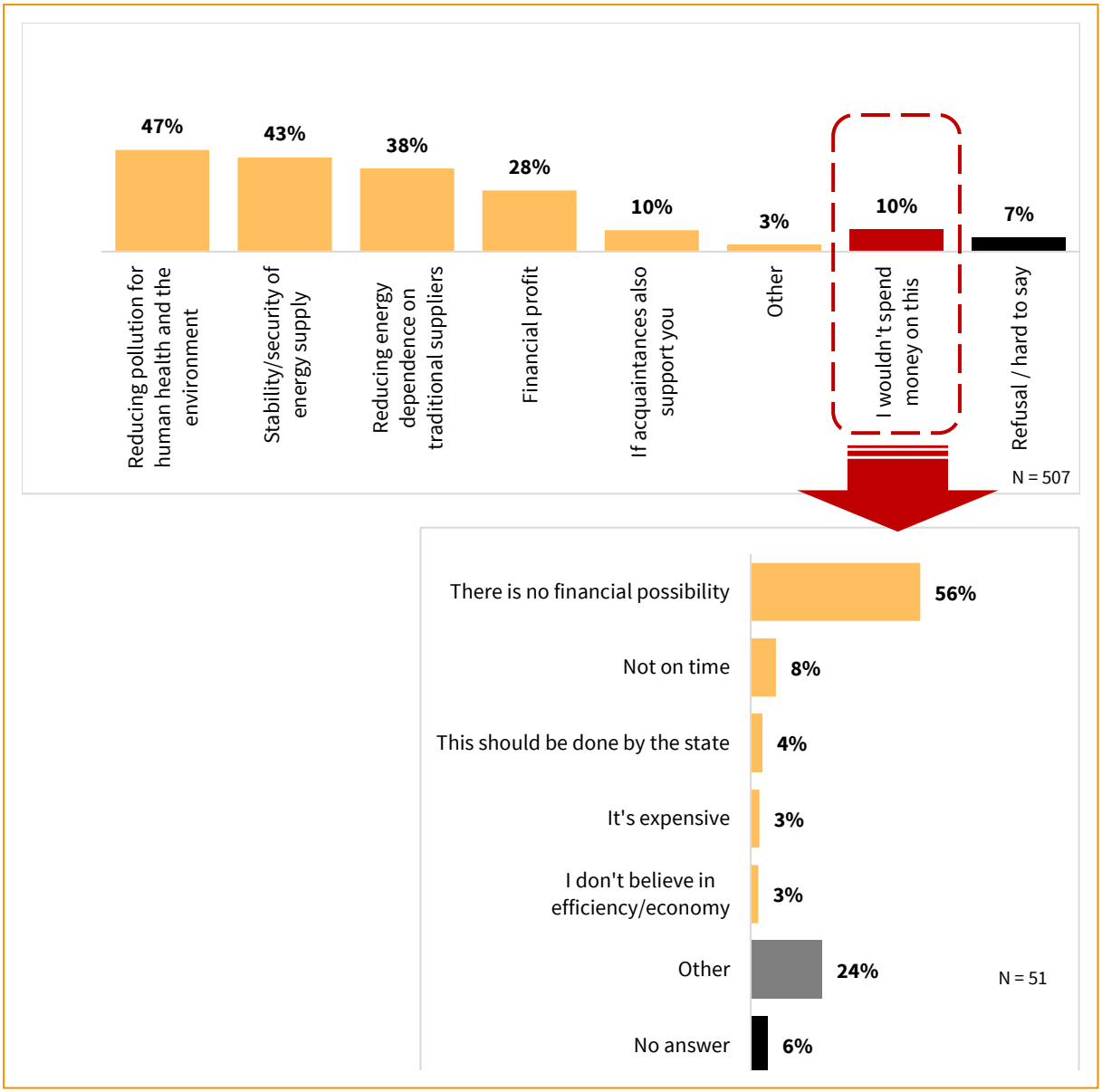


Figure 14 Survey results: What reasons could encourage you to spend your money on renewable energy sources? If you don't want to spend money, can you give one or more reasons?

As mentioned in in chapter 3, the results of the survey show that citizens put a strong emphasis in securing supply for public and collective services. This suggests that motivations to support the local development of RES or readiness to invest in them may not be guided by purely individual motives, even though individuals will also benefit from this infrastructure. This is in line with reconstruction priorities.

Many players come together in an energy community and not all of them have the same motivation or combination of motivations. When trying to engage stakeholders in the creation of an energy community, initiators should present the whole range of advantages of renewable energies and energy communities. They should also differentiate between benefits during the war time and from the post-war period. RES generation is a long-term investment and motivations might evolve over time. However, it is worth defining a common mission within the community, as already described in chapters 2, 3 and 5.

Against this background, investment motives show why energy communities balance between non-profit and for-profit forms and can be considered as part of a socially oriented economy with solidarity in mind.

Recommendation

- Promote energy communities not as a way to improve one's own financial situation in the short term, but as a community activity to participate in the build-back-better efforts with many added benefits

6.2.2 Factors influencing investment behaviour and motives

> *'There is a Maslow's pyramid of needs, and most people will care about what they will have to eat today or tomorrow, they will not think about what a green energy transition is, how to save resources.' Interview 18, representative of a NGO*

The economic status or the current life situation plays an important role in investment decisions. Is a person or an organisation facing an uncertain future, are resources scarce, or are they needed for other goals? Or has the person already successfully built up a foundation, do they feel secure, perhaps even so far advanced that they want to give something back to the community?

As one of our interviewees rightly point out, investing in an energy community and advancing the energy transition might rank pretty low in the pressing concerns of citizens in general. This has been also noted by the scientific literature and has been a common argument discussed in relation to energy poverty and the lack of inclusion in energy community.

Focus: savings rate increases with the income group

The savings rate increases with the income group. Consequently, there is much more room for low-profit, high-risk investment among higher income and wealthier groups. Even a high-income country like Germany has a population share of more than 30% without any monthly savings. As a consequence, this segment of the population cannot participate financially in an energy community and could only be involved with voluntary work or as a beneficiary of non-capital-binding models for participation.

On one hand, there is a high level of poverty in Ukraine and it is rising. In figure 14 above we can see that among the 10% who would not like to invest in renewables, more than half simply has no ability to do so. On the other hand, the current situation in Ukraine is different compared to many other countries. If investing in an energy community can be presented as a solution to the reconstruction of generation capacities, it will likely rank higher in the perception of citizens.

- Leveraging the high potential of small contributors

Figure 15 shows the potential for mobilising private capital from citizens. We found that there is great support for energy communities in Ukraine and the willingness to participate is enormous. Only 31% of those surveyed stated that they would not take on a role. However, 13% of those surveyed would contribute financially, with a very large proportion of them being men.

In order not to exclude any of those willing to invest and leverage this potential, the bar for participation should be set low, as 41% of those willing to invest see between €0 and €236 as their desired investment capital. In comparison, this is less than the share price set in the cooperative of Slavutych. Alternatively, programmes could provide investment support to vulnerable consumers.

The central question for the design of a support system should be how the available private capital can be utilised most efficiently and how to let the people benefit from their investment.

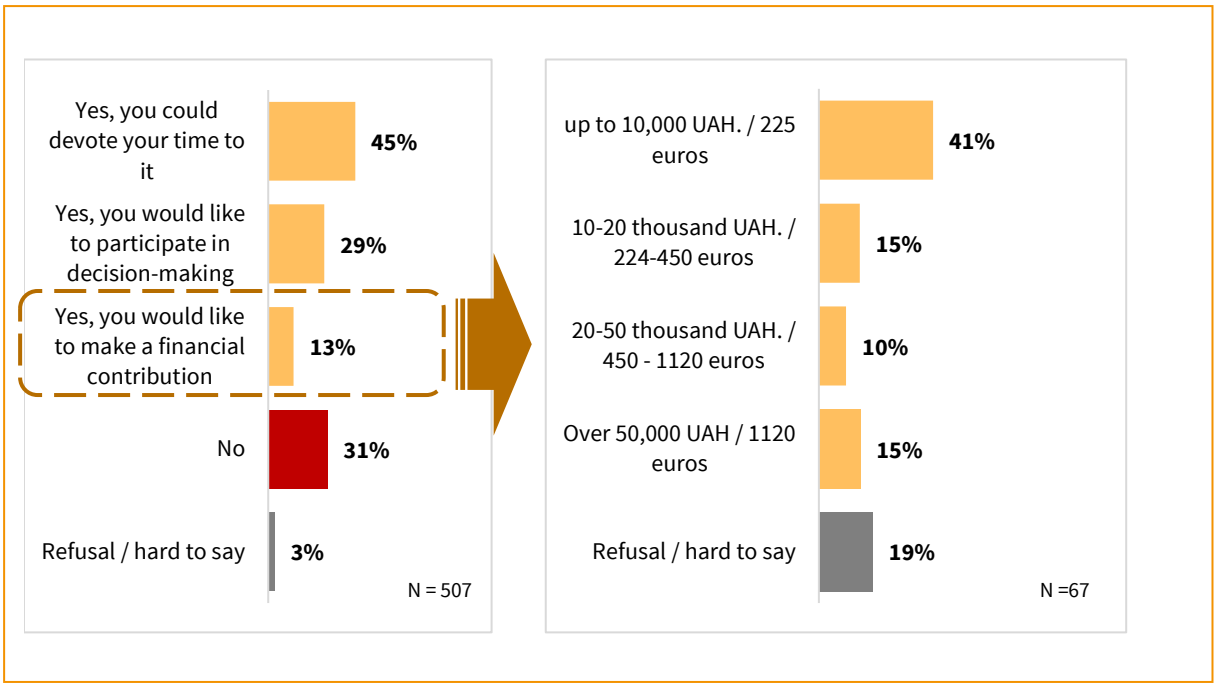


Figure 15 Survey results: If an energy community was created in your community, would you be willing to participate in its creation? You said you would like to make a financial contribution. What would be the amount of such a contribution?

We also asked our respondents if they think it would be fair that people investing more, and thus acquiring a greater share, would have the same voting rights as others to attempt to simulate a situation in which people would agree to the one-member-one-vote principle and show solidarity towards the inclusion of people with low income. Figure 16 shows that this is supported by the majority of respondents – however differently depending on the level of income.

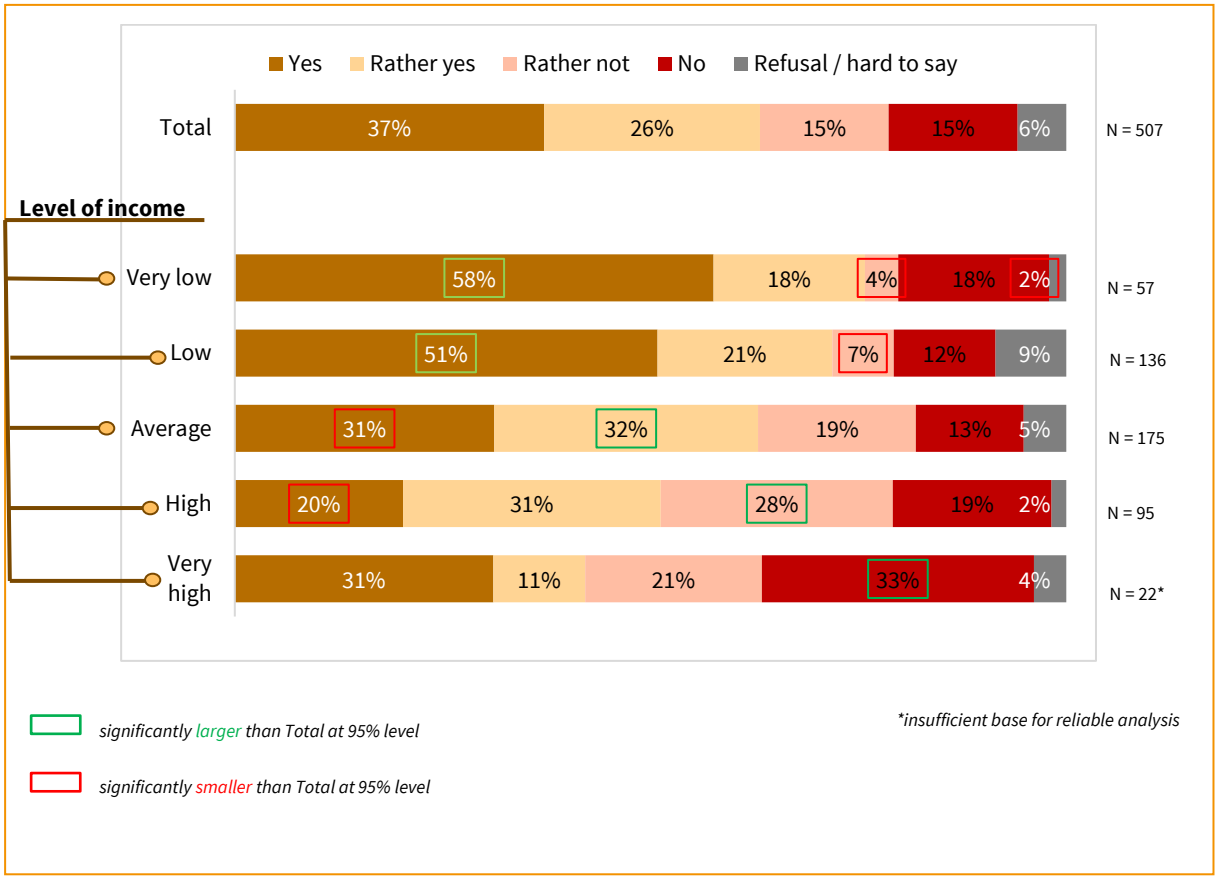


Figure 16 Survey results: Do you think it is fair that wealthier people will invest more money and less wealthy people invest less, but have the same decision power?

Of course, energy communities could consider other legal forms. However, they still need to implement some governance standards according to the EU requirements.

Based on the previous findings, we can assume that a typical energy community in Ukraine would be organised using rather low individual capital contributions, yet a high willingness for voluntary work. In order to achieve the critical level of financing for a renewable energy project, it is important that another player (e.g., municipality, a SME) provide capital or that financing instruments are put in place, especially in early stages, which could attract and convince more members to contribute financially.

- The role of public authorities

Our survey results show in Figure 17 that people mainly expect the state government (68%) to carry out the energy transition. And if not the state government, then at least the local administrations (46%). Financial incentive systems should therefore always recognise the contribution of the public sector. This stands in contrast to the widespread assumption, such as in Germany, that energy communities are always a group of citizens that is independent from any public authority.

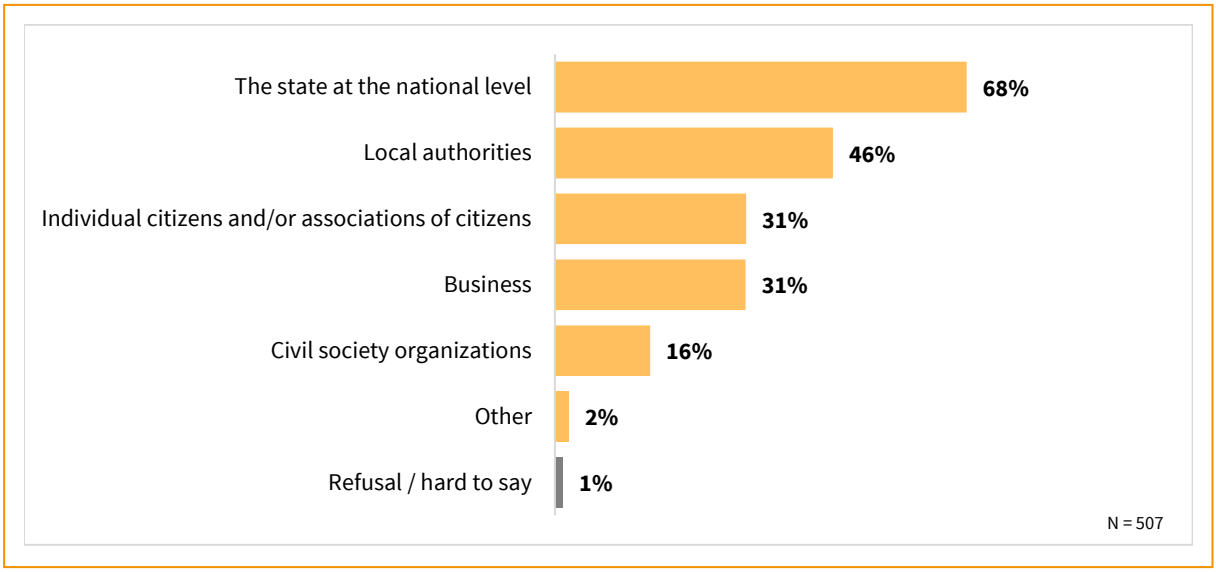


Figure 17 Survey results: Who, in your opinion, should spend money on the development of renewable energy sources?

And indeed, the trend in Germany has also moved towards the fact that the initiative for establishing RE communities often comes from the municipality, which can play a helpful role in the formation with its organised personnel. The municipality can set up a RE community with the help of state funding and itself subscribe to a number of shares that provide the community with initial capital. The shares in the RE community can be increased at any time by new members or the municipality can sell its own shares and thus release its tied-up capital, which would otherwise be bound forever in RE projects without the community.

The state and local authorities are also called upon to remove potential obstacles to the development of energy communities. The main concerns in the survey were the high costs and the lack of equipment. The state must ensure that affordable energy production resources are brought into the country and that they are sufficiently available. International partnerships can certainly help here, but it must be ensured that value creation is not lost locally as a result of agreements with other governments or private companies. Fair participation models by foreign players can also play a role here if this ensures access to materials or expertise, but the international influence must not be permanent or too great at any time. A leasing of the equipment for a certain period of time would be even better than international co-ownership models, combined with service contracts for maintenance and training for correct operations, as well as the subsequent possibility of taking over the materials by paying a premium at the end of the leasing contract. But the various options for investing without own money are only one part of the next section, where we discuss some financing schemes in greater detail.

Recommendations

- Establish a good practice of the municipality doing the first step and committing to RES projects, while being open for participation within the local population
- Design funding schemes that direct international and national funds to the local level using the municipality as a vehicle to fund energy community projects with citizen participation
- Target municipal employees with capacity-building measures for energy communities

6.3 How can community energy in Ukraine be financed?

As outlined above, there is a great desire among the population to play an active role in the energy supply of the future. Although the state and local authorities are also expected to play a leading role, it is possible to conclude that the major project of a green, decentralised energy supply is possible.

However, we have also had to recognise that local resources are limited. Only a few citizens can invest larger sums and local authorities are also limited in what they can do. In this section, we present some well-known and lesser-known financing options if equity is too limited or if confidence in the project has not yet been established to the extent that people would invest in it. We start with good go-to partners for acquiring funding when traditional players of the financial system are not offering the support at sustainable conditions. We then move on to financing mechanisms specifically designed for energy communities. We propose several ways on how to use potential profits of energy communities. Afterward we come up with suggestions on how people without their own resources can get a real stake in the energy supply by establishing financing schemes like leasing and contracting and therefore create totally inclusive energy communities.

6.3.1 Relevant stakeholders for financing community energy

Whether it is the banks, local companies, private individuals or the municipality, no matter who puts their money in the community's hands, they expect absolute credibility from the people involved. While institutional investors are more likely to be sold on credibility through documents and tangible evidence, it is the 'human element' that counts most for small local investors. They often might know the people involved personally or could be won over by getting to know them.

It is often difficult for energy communities to convince traditional banks or economic development organisations of their concepts. Evidence and guarantees is required that often cannot yet be provided. But there are other players who can either be convinced in other ways or who, like in the first case, have more experience with energy communities and community projects.

- Regional, cooperative and development banks

A bank's business is to bear part of the investment costs for a project in return for a repayment with interest including collateral. The concept of energy communities is not easily sold to a traditional bank for the reasons described in the introduction of this section. But there are also banks that are not purely oriented along the lines of the capital market, but also recognise the social and ecological potential of a project when evaluating it. These banks work according to the same rules as traditional banks; however, they often have experience in financing community-owned energy transition projects and can offer advice and contacts to a relevant corporate network, in addition to financing. These banks are often organised as cooperatives themselves, meaning that they are owned by many individuals.

Examples of credit institutions that already grant such loans or that can play an important role in crediting for energy community projects are Ukrgasbank, which has been developing into a pioneer for sustainable financial products since 2015 (International Finance Corporation, 2021), or regional banks such as Bank Lviv, which issues high loans without collateral or so-called 'energy independence loans'(European Bank for Reconstruction and Development, 2024).

There are also development banks that have a budget from public funds and are responsible for investing the money in accordance with the purpose assigned to them. These banks often have credit financing instruments to stimulate sustainable economic practices and are therefore a good starting point for financing energy transition projects with social value. Typical offers are loans below market interest rates and long tenures, so-called 'soft loans', and sometimes even with a repayment subsidy so that parts of the loan are not required back. A great example for such an initiative is the concessional loan for citizens who want to instal solar, wind or energy storage in order to build energy resilience. They can receive a loan of up to 480,000 UAH (€10,400) and for up to ten years at zero per cent interest (Cabinet of Ministers of Ukraine, 2024). This is targeted to only individuals at the moment; however, it could be a starting point for developing an offer for communities.

- Crowdlending

Crowdlending is a sub-category of crowdfunding. It is not meant as a means to pursue a project completely without the help of a credit institute, but more as another building block if the capital base needs to be topped up. The energy community launches a funding campaign and offers interested investors the opportunity to invest small amounts in a planned project. In return, a fixed interest rate is promised over a defined term. The energy community takes the initiative here because, unlike a bank loan, it can determine the interest rate and term, which means that the conditions of the financing can be better adapted to its needs.

Crowdfunding and crowdlending platforms help to connect the energy community and potential investors. They give the project the opportunity to present itself professionally and facilitate the processing of payments. As a project can usually only be implemented once a certain amount of funding has been raised, the funding platforms show how much money is still missing until the sum is reached. If the amount is reached, loan agreements are concluded with the investors and the project goes into implementation. However, if the target is not reached, the money is simply returned to the eager investors without any obligation on the part of the energy community.

The costs of the funding platforms are a significant disadvantage. Ongoing fees must also be paid to the platform alongside the interest to the investors, in addition to an initial fee when creating the campaign. This means that an investment with an interest rate of 4% p.a. for investors can quickly turn into an expensive loan with an interest rate of 7% p.a. for the energy community. It is very important to take a closer look at the conditions of different platforms.

The fees may be justified, depending on the services offered. However, if a community would rather address the people in its own region, it should be questioned whether the broad reach that the platform can offer is needed. If not, there might be better suited local networks.

- Networks used for capital

Existing local structures can act as a confidence-building platform and multiplier. Sports clubs, church communities, non-profit organisations and citizen dialogue formats are examples of good starting points for advertising plans for an energy community and finding support. Local entrepreneurship can also help to get an energy community off the ground. It is important that the energy community present itself as an independent association against possible influence by profit-oriented players. Companies that participate in the financing of the energy community should also commit to its social goals. Social media are an effective tool for generating attention. The choice of platform and voice need to be tailored to the target groups. Video messages, for example, can have a convincing effect and achieve a wide reach if they are well prepared.

Conveying simple messages is particularly important when addressing people who do not ask for information on their own initiative. Once their interest has been piqued, more detailed information can be shared.

Often the capital is raised in multiple rounds, starting with the local community to secure their participation and in later rounds involving the wider public and institutional investors. Communicating this clearly to the local population can trigger more people who want to secure their 'premium-access' to invest in early stages

Recommendations

- Offer a platform for energy communities that want to present themselves to the public to gain traction
- Offer communication material to help communities describe the project
- Develop a trusted crowdlending platform that does not charge fees so people around the world can lend money to community energy projects in Ukraine. This platform could be backed by international funds if some projects fail and a private person's credit cannot be served
- List banks with experience in community energy financing and suitable offerings in this regard
- Develop low or zero per cent interest rate offerings specifically targeted to energy communities

6.3.2 Community Energy Financing Schemes (CEFS)

Out of necessity resulting from the recurring problems of financing energy communities through traditional financing instruments, various solutions that precisely address the special needs of energy communities in terms of financing have emerged. Some of these are the result of political efforts and extensive conceptual work; in other cases, success is born more out of the 'just do it' mentality.

The ACCE (Access to capital for community energy) project has embarked on a search for community energy financing schemes (CEFS). CEFS are aimed at overcoming financial hurdles for energy communities that they cannot overcome on their own. There is no clear definition of how a CEFS must be structured, who the funders are, in which project phase it takes effect or who controls the scheme. What is important is that it is designed to overcome the hurdles typical of energy communities, yet does not interfere with the basic democratic framework of the communities.

In this section we present some of these CEFS that we think are worth looking at.

- Energy Communities for Energy Communities

Sometimes it is not possible to find enough people who want to invest their own money in the initial phase of an energy community. Citizens often only come on board when they can see a project with their own eyes. In this case, it can be a good strategy to seek contact with energy communities that have already been existing for some time. They have experience in acquiring capital and often act as investors in new energy communities themselves.

Focus: HEG helps get new ventures off the ground

The HEG (Heidelberg Energy Cooperative) is a large energy cooperative in Germany. It is described in annex 1 in greater detail. It not only invests in its own plants, but also helps other organisations stand on their own two feet. Initially, it was a founding member of the energy community roof cooperative Bürgerwerke eG in 2013. In the meantime, it has helped founding BürgerEnergie Rhein-Neckar Photovoltaik GmbH, together with a second cooperative, the BEG Kraichgau, in 2022.

The REScoop MECISE project is an institutionalised form of this knowledge exchange and startup support between established and emerging energy communities. Five communities from four countries have set up support structures with the help of EU funds, including financial services in the form of a so-called 'mutual'. The mutual pools money from other energy communities and various other players and uses it to finance energy communities in the difficult startup phase. If the project then goes well, the mutual's contributions are gradually replaced by investments from the local population and the money is released for further young energy communities.

- Energie Partagée

Energie Partagée is an investment fund operating in France that collects money from a diverse set of investors and uses it to finance community energy projects. Seven financial specialists now work for the fund and assess the project submissions. If financing is to be provided for an energy community, it is always a project company that is set up together with the local energy community. In this project company, Energie Partagée represents the voice of its shareholders. In addition to increased capital, the local energy communities benefit from Energie Partagée's network and expertise. The investors now include over 7,000 private individuals and an equity capital of almost €40 million. Borrowed capital for the projects comes mainly from local cooperative banks.

However, because Energie Partagée does not operate like a traditional investment fund, but rather offers its investors the prospect of an annual interest rate of 4% for longer terms, the organisation is not subject to the strict rules of banks and fund companies. The fund is now involved in almost 120 citizen-owned renewable energy projects (Franke, 2024).

- Energie Samen

Energiesamen is an intermediary fund established by public authorities in the Netherlands. Four provinces and the Dutch Ministry of Economic Affairs and Climate Protection are involved with varying amounts of funding. Energy communities can apply for a loan for all phases of a community energy project, but the loan may not exceed €535,000 from the initial planning stages to completion and may cover up to 70% of the project costs. The remaining 30% must be provided by the members of the energy community as equity capital or through their own physical contribution. The interest rate varies depending on the project phase for which the loan is granted and the risk involved. However, the genuinely novel twist is that there is no repayment obligation if the project does not materialise. This only works because there are regional managers of the fund across the country who provide close support to the energy communities and thus not only provide financing but also pass on their knowledge (Franke, 2024).

Recommendations

- Support mentoring activities and the establishment of financing channels between existing and emerging communities, relying on existing networks (associations of cities, public association of condominiums and cooperatives)
- Help establish a national investment fund for energy communities, which would be exempted from following certain financial regulations
- Establish a public community fund created and or managed by the central government (and the oblasts) to support energy communities in the first stage of development (e.g. as part of measure 1: establish a pilot programme)

6.3.3 Being inclusive: access to shares without capital

So far we have only described how to gather money from different sources. However, as described in chapters 2 and 3, energy communities are also about creating a social benefit by being open to all and, in particular, enabling those who cannot usually afford to invest in RES as individual players to participate. However, we also discussed that this assumption is far to materialise. Admittedly, this is also wishful thinking in other countries, as the traditional members of energy communities in Germany, for example, tend to be from wealthier parts of society. Here, we want to present financial instruments, which can help energy communities to be more inclusive.

- **Leasing**

Leasing could also be seen as the all-round carefree package. A lessor, a specialised company, takes on the planning, construction and financing of a renewable energy plant. The client, in this case the energy community, consisting of a group of energy consumers, pays regular leasing instalments for the use of the plant and reserves the right to take over the plant at a predetermined residual value at the end of the contract term. The leasing instalments cover the lessor's planning, construction and financing costs without overburdening the lessee with a high initial investment.

The energy community can freely dispose of the renewable energies, i.e., distribute them among the members or feed them into the grid. This results in financial profits or savings from which the leasing instalments are repaid.

The major advantage is that the leasing company, thanks to its experience with renewable energy projects and its long-term business partners, can build and service the renewable energy projects very efficiently. Another advantage is that virtually no equity capital is required. Of course, the lessor has to ensure the financing with sufficient funds provided by themselves or other debt providers such as banks. If the leasing conditions have been negotiated fairly, the project pays for itself and after 10 to 20 years the energy community has its own paid-off system.[13]

Why can leasing be an essential component of the energy transition in Ukraine? We have shown in Figure 14, that among the 10% of people who stated that they would not pay any money to invest in renewable energies, half of them had no financial capacity to do so. Low-income households, in particular, often have disproportionately high energy expenditures and therefore a particularly low savings potential. These savings

[13] Given that the lessor receives the same financial support as other players on the market in order to make the investment viable in the first place.

potentials can be realised through a lessor. For example, a solar energy system is installed in a low-income neighbourhood and it is financed by a lessor, and the lessee is the energy community. The electricity is purchased directly by the members of a consumer energy community at a price between the amortisation costs and the market price, thus reducing their energy costs from day one. The energy provides here a low-threshold access to renewable energies without ever having to build up a substantial capital stock in the beginning. Depending on the contract design, the PV system can gradually or after an agreed time frame go over into the ownership of the energy community.

As a rule, leasing is almost exclusively offered for photovoltaic projects, as the renewable energy system itself serves as collateral for the provider, which is easier to calculate for PV. Under good conditions, contractors might also partially finance wind power installations, hydroelectric plants or biomass and biogas plants through leasing.

- **Consumer Stock Ownership Plans (CSOP)**

The Consumer Stock Ownership Plan (CSOP) is also a low-threshold financing instrument. CSOPs are specifically designed to turn consumers into prosumers, especially those without savings or access to capital. A CSOP operating company, usually a limited liability company, invests in and operates renewable energy plants. In addition to citizens, other stakeholders such as municipalities or SMEs can become shareholders of the CSOP. The capital required for the purchase or construction of RE plants comes from a bank, which receives the equity of the CSOP operating company as collateral. Citizens and small businesses purchase the energy at a fixed price below the general energy rates, surpluses are fed into the public grid and additional income is generated for the operating company. The profits are used to service the bank loan and provide the shareholders with additional income in the long term, i.e. after loan repayment. The model is represented in Figure 18 below.

One advantage over other models is that the private individuals are represented by a trustee, thus talk with one voice, and can rely on the trustee's expertise.

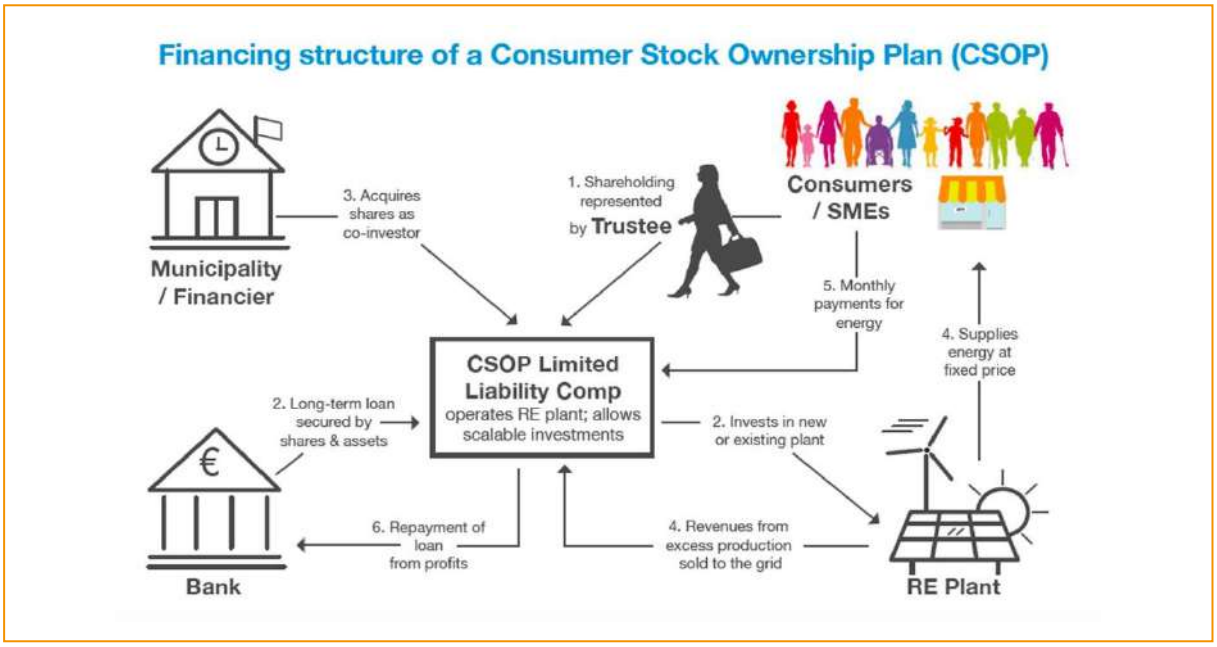


Figure 18 Schematic description of the Consumer Stock Ownershop Plan Model (CSOP) (Source: SCORE project (2020))

Focus: PREC – Prague renewable energy community

The city of Prague in the Czechia has designed a Consumer Stock Ownership Plan (CSOP) for its citizens. House associations can register their interest in setting up an energy community via an online platform. A development company, financed by the EU modernisation fund, arranges consultation appointments with residents, helps with the design and planning of rooftop PV systems and finances large parts of the initial costs.

The various individual energy communities in the city then initially draw their self-generated energy from the roof, but also pass on the surpluses to the development company, which balances the energy between the participants throughout the city. The individual citizens therefore have very low investment costs to cover a good proportion of their own consumption. Several hundred families are already participating in PREC (SCORE, 2020).

- **Energy savings contracting**

Contracting is an energy service that helps owners improve the energy efficiency of their buildings and therefore to reduce their carbon footprint as well. This means that the energy savings model is generally offered for large public buildings and factories rather than for private homes. The focus in energy savings contracting is on a promise by the contractor that the principal will achieve guaranteed savings. Here, the energy service provider must deliver these promised energy savings within the agreed contractual period, and its remuneration will depend on this fact. The targets are reached by efficiency measures, e.g., by improving the insulations of the principal's house or optimising the control of the heating system.

In Ukraine, 63% of our survey respondents consider the low energy efficiency of buildings to be a very important problem. A good refurbishment concept for a building first requires extensive investment in energy efficiency before the money is recouped through savings over many years. For many people, these high costs are unaffordable, especially in times of high energy prices, which starts a vicious circle. Through energy savings contracting, the energy community can collect money for the refurbishment of individual buildings and share the efficiency gains between the beneficiary and the investors, which means a win-win situation for both sides.

- **Connecting social policy with community building**

> *'It would be great, for example, if the targeted subsidies that low-income people receive contained built-in financial incentives to invest in renewables. Then awareness would at least increase very quickly.' Interview 10, representative of a NGO*

The people who already need financial support are often the ones with the highest energy bills in relation to their income. Their financial situation does not allow them to invest in energy efficiency measures or renewable energies. Consequently, there is a need for social payments to offset these disadvantages. A hitherto underused concept is the distribution of shares in ECs as an instrument to decrease the social problems arising from energy poverty. The benefits of EC membership – lower energy costs, social participation, the right to co-determination and a supplementary income – would then also be available to those who cannot afford to buy shares themselves, and the state budget would also be relieved in the long term as households climb out of dependency. While transferring an increasing amount of money for covering people's energy costs, energy bills could be directly dealt with through funding memberships in energy communities. It is not about reducing social welfare but about incentivising energy consumption reduction measures and allowing an added benefit.

Focus: providing solar panels for families in underpriviliged suburbs

A solidarity-based energy community was founded in Naples' suburbs, the San Giovanni a Teduccio district. The installed solar power system supplies 40 families and a social centre with green energy and reduces their electricity bills. At the same time, the people in the neighbourhood are being taught about climate and environmental education at first hand. The project was financed by a grant-making organisation that supports social innovation and development of southern Italy.

Recommendations

- Design programmes that compensate lessors for the risk of non-payment and ensure uncomplicated conditions for entering into contracts
- Initiate different pilot projects for energy savings contracting: some where the energy community appears as the financier of energy efficiency measures and shares the savings among its members and some where the members of a condominium or a district unite together in an energy community and hire an energy efficiency contractor to refurbish all their apartments

6.3.4 What to do with profits?

The goal of any energy community is to economically viable in the long run. Depending on its design it might even generate considerable income. In which case members, who have ultimately financed the profitable projects with their shares, may want to receive a personal financial benefit in return. The traditional means of distributing the surplus among the members is the **dividend**, whereby all shareholders receive a portion of the profit according to the number of shares they hold. If an energy community pays annual dividends, it signals economic stability, which can attract new members. However, it is important to weigh up the pros and cons carefully, as taxes may be payable on the dividend and the money distributed is not available to grow new projects. **Rebates** are an alternative to dividends, as they are not taxed.

Focus: rebates

Green Planet Energy is a large energy cooperative and also a green electricity provider. There is a special electricity contract for members: members pay almost €0.02 less on the price per kWh and the monthly basic price is also €1 cheaper. In this way, the cooperative rewards its members with a discount on electricity while reducing the taxable profit.

The COMPILE project (2021) reports another story from a football club in Oberdardorf (Germany). Club supporters founded a cooperative to equip the roof of the stadium with a PV system. They wanted to make the renovation possible despite the club's empty treasury. The members of the cooperative were given a choice: an annual dividend or a free stadium sausage at every home game of the club, which many supporters ultimately chose.

As shown in subsection 5.3.3 however, policymakers can decide to put limits to the distribution of profits. It is important to note that all actions of redistribution also reduce the available capital for new projects. It is important to define exactly the energy community's purpose.

Another option is to leave the remaining surplus in the community. The use of profits itself can be a source of equity financing for an energy community. By reinvesting the profits, the energy community can implement new projects, use the experience gained to optimise its processes and increase its success and impact.

Focus: reinvesting the profits in its own or other projects

Established in 2010, the HEG (Heidelberg Energy Cooperative) asks its members at the annual general assembly every year how the profits should be used. So far, the majority has always decided against a dividend and in favour of reinvesting in new projects. However, this does not harm the growth in membership. In its 2022 annual report, the cooperative reported total assets of €7.8 million and a net profit for the year of €158,000.

In addition to own projects, the cooperative invests in other energy communities to get them started. This way they can use their profits to scale their economical power for the future while supporting other communities in the early phases. See also Case EC 5 in annex 1.

Many energy communities also use their surplus for social projects that are not directly related to increasing generation capacity. Their social roots make local projects particularly suitable for social cohesion activities.

Focus: adressing energy poverty

The Repowering London energy community has been created and implementing RES projects since 2011. In the context of Russia's attack on Ukraine, energy prices in England have risen dramatically and millions of English people have been unable to afford the cost of energy. Together with partner organisations, Repowering London has built eight RES projects in social housing, schools and community centres, directly benefiting their users.

Residents can buy a share for a symbolic pound, giving them a say in all decisions. Profits from the energy community are invested in training programmes, energy education workshops or energy retrofits to other community facilities.

Recommendation

- Define and agree on a clear purpose for your energy community and how to use profits generated so that members have a clear expectation when joining

6.4 Existing funding sources that could be leveraged for energy community financing in Ukraine

Accessible financing is a key issue for energy communities and many funding sources already exist for them in Europe. They are offered by both state and private organisations, which pursue a wide variety of orientations and motivations. Several are transferring grants directly to the communities or provide capacity building by mentoring the communities or facilitating an exchange between experienced and emerging energy communities.

In this section we present a non-exhaustive selection of (international) funding sources that could be leveraged and steered into funding for energy communities in Ukraine.

The presented programmes are tagged with some specific symbols to ease readers' comprehension of the available options. We differentiate between the type of donors. Funds from private donors are often more flexible and can be quickly directed towards a new, urgent purpose based on the circumstances. Public funds require more administrative efforts but can be leveraged more strategically, reliably and sustainably for a specific purpose. Both are urgently needed in the build-back-better mission. Another differentiation is made between the listed funds depending on whether they are targeted towards Ukraine, if Ukraine is eligible among other circumstances, or if Ukraine is not yet foreseen but could become eligible, for example, through the EU accession process.

Donor:	💼 **Public**		👜 **Private**
Eligibility of Ukraine:	Targeted 🎯	Eligible but not targeted ✅	Not yet eligible ❌

The aims of this overview are thus, first to raise awareness about existing funding sources to which Ukrainian stakeholders are eligible and second to enable Ukrainian policymakers to advocate for the extension of those programmes to Ukrainian stakeholders, if it is not the case.

6.4.1 Funding schemes specific to (quasi) energy communities

We will start with funding schemes that are directly targeted to energy communities or municipalities that want to establish an energy community using citizen participation.

💼 ✅ EU - Energy Community Facility

As mentioned, in subsection 5.2.2, the EU's Energy Community Facility builds on the work of the Rural Energy Community Advisory Hub (RECAH) and the Energy Communities Repository and will initially have a budget of €10 million. Based on the assumption that many good project ideas are not implemented because the players lack support structures or do not receive funding in the conception phase, the facility aims to make the success of energy community projects less dependent on the income of its members and the existence of local support structures. The support services include

- Direct financial support for energy communities
- Pre-screening of project ideas to check their feasibility
- Financial incentives for third parties to help support business plans
- Complementary activities, such as linking support services across member states
- Helpdesk
- Peer exchange

The program was launched in September 2024 and the first call will be published in the first quarter of 2025.

💼 ✅ EU - European City Facility (EUCF)

The EUCF aims to bridge the gap between project planning and project financing. To this end, it supports measures to create an investment concept. This includes the creation of:

- Potential project pipeline
- Market/barrier analysis

- Analysis of the local players
- Legal analysis
- Financing strategies
- Investment process
- Implementation steps

With the help of the EUCF, eligible participants (i.e. local public authorities) translate their project ideas into 'financial language', enabling investors of all kinds to evaluate the financing of their project. In the 6th call (2024), a total of 75 projects will be supported, including 30 from Central and Eastern Europe.

💼 ✅ Scalable Cities Action Grant

The Scalable Cities Action Grant financially supports cities and ad-hoc partnerships that wish to replicate measures that were successfully implemented in smart cities and communities' projects to facilitate the transition towards climate neutrality. Energy Communities fulfil the criteria for receiving funding and cities from Ukraine are eligible to apply. Applications for 2024 are now closed.

💼 ❌ EU – Communities for Climate (C4C)

The EU's Communities for Climate initiative supports 50 citizens' initiatives in implementing their innovative ideas for tackling climate change and sustainability issues. The projects receive tailored support in order to serve as replicable models for other initiatives. To be supported by C4C, the initiatives must come from one of the 11 participating Member States and carry out activities in the areas of renewable energy, sustainable water management, circular and resource-efficient economy or biodiversity.

In the first call, eligible participants came from Croatia, Estonia, Finland, France, Germany, Hungary, Italy, Poland, Romania, Spain and Sweden. Benefits include specialised expertise, peer learning, customised study visits, mentoring and coaching, and guidance on ways to make local community projects impactful and visible at European, national and local levels.

💼 ✅ EU – Net Zero Cities and the Pilot Cities Programme

September 2024 marks the start of the third cohort of the Pilot Cities Programme, a group of selected cities committed to achieving climate neutrality by 2030. They will benefit from financial support of up to €1.5 million and access to expert advice. They act as innovation hubs for new solutions for rapid decarbonisation. New forms of citizen participation and innovative governance approaches are also being tested here. The findings are to be copied in twinning cities. In this way, cities that are not part of the pilot programme can also benefit from the lessons learned.

💼 ✅ EU – Euro Cities: SUN4Ukraine

The SUN4Ukraine programme aims to support Ukrainian cities in integrating climate neutrality targets into their recovery plans. It provides technical support and tailored capacity-building programmes to accompany these cities on their path to climate neutrality. The program is set to run for four years (until 2028).

6.4.2 Other relevant funding programmes

Many of the funding programmes are not accessible by municipalities or energy communities directly or specifically targeted towards them. In some cases, the state can receive these funds and breaks them into national or regional supporting schemes. We refer to section 5.2.2. on how to breakdown EU funding programmes to support energy communities.

The United Nations offer a variety of aid and funding programmes for many different purposes. The following is very suitable for being facilitated in Ukraine energy community funding.

💼 ✅ United Nations Development Programme – Sustainable Energy Hub

The UNDP works with governments and other partners to transform energy systems and support energy policy, technology development and financial instruments in a way that can trigger sustainable development. In particular, the UNDP in Europe aims to increase the energy efficiency of buildings, promote low-greenhouse gas urban development and develop financial instruments for climate-friendly solutions. In doing so, the programme relies on direct cooperation with policymakers.

The EU has a wide range of programs for the transfer of knowledge and experience, but also many different funding pots for several purposes. Since the accession process of Ukraine to the EU has just started, not all programmes can be facilitated yet, so the order of the programmes here is from the general to the more specific.

💼 ✅ 🎯 EU – LIFE

The EU's Life programme runs from 2021 to 2027 and supports environmental and climate protection. The sub-programme for clean energy transition has a budget of almost €1 billion. The money will be used to remove market barriers and promote green, energy-efficient economic change.

Ukraine was included in the programme through a separately negotiated agreement in June 2022 and stakeholders have since received targeted and specific support in several calls.

💼 🎯 EU – Ukraine Facility

In spring 2024, the European Parliament and the Council of Europe agreed on the establishment of a new facility to support the reconstruction of Ukraine. €50 billion is to be provided as loans and grants in the years 2024 to 2027 through direct support to the state's budget (€38 billion), an investment fund (€7 billion) and technical and administrative support (€5 billion). At least 20% of the funds must be channelled towards investments advancing a 'green' reconstruction. Funding is conditional to the implementation of structural reforms and measures, including in key sectors such as energy, which are described in the Ukraine plan. Breaking down the plan into more concrete support measures for energy communities could be key.

For example, the direct exchange of experts for energy communities and local civil players could be initiated to establish the first Ukrainian energy communities.

💼 ❌ EU – Cohesion & Regional Development Fund

The cohesion policy is the EU's main investment policy for bringing Member States and regions with below-average economic performance closer to the EU average in the long term. The cohesion fund focuses on investments in the field of environment and transport infrastructure. For the 2021–2027 period, the Cohesion Fund involves Bulgaria, Czechia, Estonia, Greece, Croatia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Portugal, Romania, Slovakia and Slovenia and around €350 billion are available to those countries. Ukraine is not eligible but could be in the future.

💼 ❌ EU – Modernisation Fund

The Modernisation Fund supports the upgrading of energy systems, the expansion of renewable energies, energy efficiency measures, a socially responsible conversion of fossil regions and more in 13 EU Member States with below-average incomes. The fund runs from 2021 to 2030 and pursues the overarching goal of achieving the EU's 2030 climate targets. It is fuelled by proceeds from the EU emissions trading system. It does not include Ukraine but could do so in the future.

💼 ❌ EU – Just Transition Fund

This fund supports specific regions in the EU in their transition to a carbon-free industry and society. It is currently endowed with €19.2 billion, and the program should trigger €25.4 billion in additional investments. Access to the fund is conditional on the definition of eligible regions and the establishment of just transition plans. The programme could become particularly relevant for Ukrainian coal regions.

💼 ✅ EU – Interreg

Interreg is an EU program to strengthen regional development and cohesion as well as to reduce economic disparities. It focuses on challenges like climate change, digital transformation and social inclusion. 2021–2027 is the sixth period of Interreg and therefore it is called Interreg VI. With a budget of nearly €10 billion, around 100 Interreg programmes operate across borders, both within and outside the EU, contributing to the implementation of the EU's main cohesion policy priorities. It was expanded to Ukraine in 2023, among other countries. Potential beneficiaries are national authorities, business, environmental and educational organisations.

Other funding is collected by international or supranational banking institutions such as the European Investment Bank. Countries also support the reconstruction of Ukraine individually and are organising funding pots for specific purposes. Some examples are given below.

💼 🎯 IFC – Energy Efficiency Fund (EEFund)

The EEFund supports homeowners associations in the implementation of energy efficiency measures through financial and technical support. The programme is financed jointly by the German and Ukrainian governments and the EU. Since 2019, the programme has included the ENERGODIM sub-programme, which reimburses 40% to 70% of the costs of thermal upgrades to a building, and since 2022 the VidnovyDIM sub-programme, which also covers the costs of rebuilding war-damaged buildings.

💼 ❌ Target (not eligible)

Target stands for 'Technical Assistance for Regions Undergoing a Green Energy Transition' and complements the Just Transition Programme for the conversion of coal regions in the EU. The programme does not provide financial support, but rather technical assistance from a permanent team of experts from the European Investment Bank (EIB). These include economists, engineers, state aid experts and environmental specialists. The support also explicitly applies to municipalities that want to set up an energy community. An extension of the offer to Ukrainian municipalities is strongly recommended.

💼 🎯 SUI – Ukraine's Cohesion & Regional Development Project (UCORD)

Between 2022 and 2026, Switzerland plans to support Ukraine in empowering its Regional Development Agencies (RDAs) to improve public services together with companies and municipalities. General social development is to be achieved through environmental and cultural projects in several project phases. The project has a budget of €25 million.

💼 🎯 EIB – European Local Energy Assistance (ELENA – EIB)

The programme supports up to 90% of the costs for project preparation activities in the areas of energy efficiency, sustainable housing, urban transport and mobility. These activities include, for example, technical studies and energy audits, business plans, financial or legal advice and project management. Both government organisations and the private sector are eligible to apply.

6.4.3 Private organisations/foundations

In addition, purely private organisations are collecting money for Ukraine, its citizens and the reconstruction of the energy system. In the first example we see a consortium of enterprises, while in the second example we have a political foundation.

👜 ✅ European Climate Foundation

The ECF describes itself as a strategic grant-maker, pursuing the approach of building the recipients' own capacities and capabilities. The foundation's goal is to develop a net-zero society and achieve the Paris climate goals. Fed by philanthropic donors, it supports a network of almost 700 impactful organisations. In response to Russia's attack on Ukraine, the EUF has identified the accelerated energy transition of Europe and the reconstruction of Ukraine as an area in which it wants to become active. The mobilisation of citizens will play an important role in this.

👜 🎯 Heinrich Böll Stiftung

The Heinrich Böll Foundation sees itself as a reform policy future laboratory and international network. The development of socially acceptable climate protection solutions is at the top of its agenda. The foundation has various funding pools at its disposal and operates several offices abroad, including one in Kyiv. The energy policy goals and actions of the Ukrainian office are 100% renewable energy sources by 2050, supporting communities in the development and implementation of Sustainable Energy and Climate Action Plans (SECAPs) and creating sustainable financial instruments for owners of small renewable energy installations.

6.4.4 Summary

In summary, it should be mentioned that there are already many funding programmes that are available to energy communities and enabling stakeholders. And many more will be developed in the future. Therefore, monitoring this dynamic funding landscape and having organisations able to guide energy communities about these funding options is crucial for the development of energy communities. However, this cannot be all: support is also needed in the application process and in the correct use of the funding.

Recommendations

- Task an existing institution (e.g. state agency) to track and raise knowledge about funding opportunities for energy communities and their enabling actors, and offer assistance in the application process and managing those funds
- Consider how access to EU funds (Ukraine Facility and other funding programmes in the future) can be used to design support schemes for energy communities

Resources: Where to start?

Documents:

- Financing guide for energy communities from the project SCCALE 203050, which also summarises what can be found in other reports (Link)
- Handbook on investment schemes for REScoop projects from the REScoop 20-20-20 project (Link)
- Financing guide by the COMPILE project (Link) and the online guide (Link)
- The financial handbook and other results from the project ACCE (Access to Capital for Community Energy) (Website)
- The report 'Energy communities in the EU – opportunities and barriers to financing' by the Friends of the Earth Europe and Profundo (Link)
- Report on novel financing instruments for REC from the COME RES project (Link)
- Financing community energy - a short guide for banks from the SCCALE 203050 project (Link)
- Study Financing Renewable energy projects in Ukrainian Municipalities by the Ukrainian NGO Ecoclub (Link)

Video:

- Webinar: Energy Communities Repository: Mobilising investments for energy communities (YouTube)
- Webinar: Introduction to ACCE and Community Energy Financing Schemes (YouTube)

For an overview of other relevant resources: Browse resources from the Energy Community Platform in the area financial

7 Conclusion and outlook

> *'Municipal grids can be completed in five years, but nuclear units cannot be put into operation in five years.' Interview 20, representative of a NGO*
>
> *'If a community is organised in our community, even three houses, which will completely switch to alternative energy, for example, solar panels, and will provide themselves with this energy, then I think the whole city will do so in two years.' Interview 8, representative of a LSG*
>
> *'I am absolutely convinced that the development of energy communities will become a driver for the development of our energy system. After the war is over, I think that the main emphasis in our country in the development of the energy sector will be on the creation and decentralisation of our energy system, because the centralised system is very vulnerable, as experience has shown us. And I think that if the right conditions are created, it will develop very quickly and very significantly.' Interview 4, representative of a LSG*

This study aimed at presenting energy communities to stakeholders from Ukraine, where awareness and knowledge of this concept and its implementation is still limited. We also provided relevant information, implementation options, best practices and recommendations to Ukrainian and non-Ukrainian stakeholders on how to support the development of energy communities in Ukraine.

We highlighted that a variety of definitions co-exist and that in certain European countries, the deployment of RES has intrinsically been linked to the development of energy communities. Energy communities can take various forms and provide a wide range of environmental and socio-economic benefits to individuals participating, the community where the project is implemented and the energy system and society as a whole. To become a mainstream phenomenon, energy communities rely on the support of a broad range of stakeholders providing them with specific regulatory conditions, direct and indirect financial and technical support and services as well as representing their interests and communicating about their benefits. In this regard, policymaking and financing are two key aspects of the future development of energy communities.

We showed that energy communities can greatly contribute to the build-back-better approach by restoring generation capacities and network infrastructures, as well as reducing and optimising energy consumption and addressing social justice aspects, provided more players know about the potential benefits and policy adaptations are undertaken. Our survey results show a great interest of citizens to learn and participate in energy communities and an overwhelmingly positive attitude of the citizens towards their creation in the citizen's own area of life. Ukraine can also count on strong civil society organisations and many motivated local authorities. Therefore, several prerequisites for the development of energy communities are already in place, and these need to be leveraged. Considering the limited resources of those organisations, it is imperative to consider funding capacity-building and training of enablers of energy communities.

Furthermore, we also want to challenge the idea that Ukraine lags behind EU countries in the development of energy communities and developing an adequate policy framework for them. Our semi-structured interviews and desktop research show that many energy communities already exist in Ukraine and that they can already count on some enabling provisions. Moreover, further additional policy adaptations are underway, albeit many more should be adopted progressively in the next few years. In this regard, we want to emphasise inter alia to not restrict the operation of energy communities to the electric sector.

In summary, we see three key risks potentially hampering the development of energy communities.

First, policymakers need to address the quick reconstruction of generation capacities while ensuring its acceptance by allowing a variety of players and projects in the energy system. By promoting large commercial projects as well as smaller community projects, and by ensuring that any RES projects contribute to local value creation where they are implemented, Ukraine can lay the foundation for a sustainable energy transition and reconstruction. To begin with, it is necessary to develop energy communities alongside other models. By enabling citizen participation in large commercial projects, e.g., by introducing a legal provision to open the capital of those projects to citizens, as well as enabling the provision of commercial services for communities, policymakers can contribute to a diversity of projected representing consumer preferences and distributing benefits among players, in an effort to prevent the benefits of the energy transition and energy resources being concentrated in the hands of a few. Further, it is necessary to mainstream the support to energy communities in existing support instrument (from energy policy but also other policies) as well as to provide targeted support. Policymakers should consider the introduction of a pilot programme for energy communities, which could include a regulatory sandbox and a specific support programme focused on the early development stages through financing (grants or refundable loans) and capacity-building support.

Second, policymakers should manage the potential political backlash from incumbent energy utilities, potentially exacerbated by war losses. We showed that the development of energy communities can be perceived as a threat rather than an opportunity by traditional players or even in certain cases as an opportunity to exploit unjustifiably enabling provisions not targeted towards them. Policymakers need not only to implement new policies but also to monitor their impact and enforce them through appropriate means. In this regard, it is imperative to provide a clear definition of energy communities, focused on governance standards distinguishing from other players and distinguishing their regulation from the regulation of activities they undertake. It is urgent for policymakers to provide clarifications on existing governance standards applicable to energy communities and how to align them with EU requirements. It will be also imperative to strong provisions enabling cooperation between energy communities and DSOs, clarifying rights and duties, or enabling energy communities to operate distribution systems.

Third, policymakers, donors and international financial institutions need to ensure that energy communities, as small players and small projects, have access to finance and are subsequently consulted in this respect. In the context of reconstruction, financing options should trickle down to small players and projects. In this regard, it will be imperative to select appropriate intermediaries, such as local and regional authorities, but also banks (traditional, ethical, economic development) and state agencies. Then, policymakers should clarify further how energy communities can benefit from existing support schemes, and under certain conditions can be exempted or have reduced burden when participating in tenders.

Ukraine is far from starting from scratch when it comes to energy communities. The country is in a unique position to develop best practices, e.g., on addressing social challenges, from which many other countries in Europe and beyond could also learn from. This would help demonstrating that the integration of Ukraine to the EU is a mutually beneficial process for international partners.

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Annex: Catalogue of cases

What you will find in this annex

This annex describes existing case studies and best practice examples in terms of technical and financial support.

The first part presents cases of (quasi) energy communities to show how varied energy communities are. We selected the cases to represent a variety of contexts (e.g., urban, rural), applications (e.g., power and heating sector), factors relevant to the Ukrainian context (e.g., post-socialist countries) or illustrating a specific topic (e.g., cooperation with other players (municipalities, energy companies), inclusion). These examples should be understood as sources of inspiration rather than templates to replicate. It then presents existing organisations supporting the creation of energy communities. The European Federation of RES cooperatives (REScoop.eu) also published monthly success stories in its newsletter and on its website.

The second part focuses on institutions and programmes set up by governments, i.e., various incubators and one-stop shops that can support the creation and flourishing of energy communities.

- For policymakers:
  - examples of supporting institutions set up by governments, i.e., incubators and one-stop shops
  - understanding how varied energy communities can be and how they can be implemented in different contexts, which need to be accounted for in the policy framework and therefore the need to mainstream them and to construct a dedicated supporting scheme
- For energy community creators and enablers:
  - trigger inspiration and identification of potential contacts for peer exchange
  - examples of support instruments to advocate for or create

(Renewable) Energy Communities & Quasi-(R)ECs

Case EC 1: Hostětín, Czechia

240 inhabitants

Rural area

Financial gain and GHG saving

Photovoltaic

Biomass

District heating

Hostětín is a small village in a sparsely populated and mountainous area. Due to the restructuring of the economy in the 1990s, employment and growth have declined in the area. The village has no connection to the natural gas supply, which meant that over 90% of households were heated with coal or electricity in the 1990s. This resulted in high levels of air pollution and regular power outages. To address the situation, the municipality began to stimulate discussion in the village with information events in collaboration a non-profit organisation and external experts. Before individual measures were implemented, surveys of the residents were carried out and expeditions were offered to look at practical examples elsewhere. As pioneers in their own country, the residents of Hostětín drew much inspiration from communities in Austria.

Since 1995, several projects have been implemented by the municipality, a non-profit organisation (Veronica Centrum Hostětín) and citizens, however not in a formalised structure. A biomass plant, powered by waste wood from surrounding forests and sawmills, supplies 70 of the 86 buildings with heat through a 2.8-km long heating network since 2000. Heating costs have been reduced by 14% locally and are around two-thirds of the national average. Households pay a fixed connection fee plus a variable part based on their consumption.

Many photovoltaic and solar thermal systems are installed on the roofs of public as well as private buildings in Hostětín. Solar thermal energy covers part of the hot water requirements when installed on private buildings, reducing further the heating bill. A large-scale solar collector (36 m^2) combined with a heat storage tank is serving two big public buildings directly and is interconnected with the biomass plant and the heating grid. Two big photovoltaic systems keep the electricity bill of the public buildings low. The electricity that cannot be consumed is fed into the public grid in return for a small feed-in rate.

Financing the many projects was a challenge. The Czech Ministry of the Environment advised and established contacts with international donors. The biomass plant was funded largely by a Dutch state fund and the Czech state subsidized the construction of the heating network. All citizens had to pay for the construction of their own house connection to the heating network. The private solar thermal systems received a 50% subsidy from a British fund for post-Soviet countries and a regional environmental partnership as part of the ‘Sun for the White Carpathians’ programme. Thanks to the many subsidy payments for this lighthouse project, the municipality was not required to take out a loan.

Acceptance of renewable energies in Hostětín is particularly high because citizens can familiarise themselves with the benefits of the various technologies in practice in the information centre, located in a modern passive house. The benefits are felt by the inhabitants of Hostětín who no longer need to haul coal or regularly maintain heating systems. Air pollution is now only 6% of what it was in 1999, and the average carbon emissions of a Hostětín resident are less than half the average of comparable Czech municipalities at 2.5 metric tons per year. Dependence on global energy markets has already been greatly reduced in Hostětín, but the village is still working towards its long-term goal of carbon neutrality.

Case EC 2: Hnutí DUHA in Czechia

396,000 inhabitants

Large city

Pioneer and social cohesion

Photovoltaic

The Friends of the Earth Czechia and the Community Energy Union, an interest group comprised of local governments, NGOs, companies and professional associations, have been working for many years on the realization of energy communities in the country. Until recently, there was no citizen-led energy community. Existing initiatives emerged under the influence of public and private institutions. But since December 2023, things have changed and the first cooperative Hnutí DUHA was founded with 47 founding members in **Brno**, the second largest city. he adoption of the Energy Community Act paved the way shortly before.

The founding of the cooperative Hnutí DUHA was thoroughly prepared by the Friends of the Earth, which still provides administrative services. But even they were surprised by its success. Just two months after its foundation, the cooperative attracted 200 additional members and raised €125,000. This was partly due to the fact that the first project had already been conceptualised: an organic farm south of the city equipped with a 50-kW solar system, of which the farm will consume around 30% itself and the remaining 70% will be shared among the cooperative members. The second project plans on installing PV systems on a block of flats for single mothers and refugees from Ukraine. In addition to the flats, the system will also supply a community café and a bookshop. If there is any surplus, it will be shared among the members of the cooperative.

This is made possible by regulatory provisions, which oblige grid operators to connect energy sharing projects, equip them with smart meters and process the data. However, there are some uncertainties regarding the fact that the current allocation rule enables energy sharing projects to be economically viable. Nevertheless, committed citizens and municipalities that have been waiting a long time for this opportunity now have everything they need to start their own energy communities: a law and an initial energy community from whose experience all Czechs can benefit.

Case EC 3: Le Mené, France

6,400 inhabitants

Rural area

Financial gain and independence

Photovoltaic

Biomass and biogas

District heating

Wind

Le Mené is a French community of municipalities located in the department of Côtes-d'Armor in the Brittany region. Up until a few years ago, the area was characterised by little more than a rural farming population, low economic output and strong winds. The population was in constant decline and the best chance of finding a job outside agriculture was to become a chopper in the local slaughterhouse.

At the turn of the 2000s, a delegation of local farmers and communal representatives travelled to Denmark to concretise their plans for a composting plant. They came back with the conviction to implement a biomethane plant for energy production. The local farmers cooperative began to earn additional revenue though the production and selling of biogas from local agricultural and slaughterhouse waste. The technological and economic success triggered further plans.

The community hired a planning office to examine further untapped potential in the village. Gradually, energy efficiency measures were implemented in public, commercial and private buildings, a woodchip-fired heating network was built, and several solar energy projects were carried out with different forms of involvement of the local population. Over time, this has enabled the people of Le Mené to become increasingly independent of large energy companies and keep more added value in the region.

One exception to date has been a wind farm with six wind turbines built in 2005, which are operated by a commercial player without public participation and facing opposition since the beginning of construction works. As the conditions in Le Mené are very favourable for wind power, another interested developer soon came forward to build more wind turbines. This time, the community made it a condition that the project could only be implemented with public participation. The project development company agreed, and 147 families were quickly found. They jointly provided 30% of the equity capital for the project and are organised in a cooperative. Once the wind turbines were completed, the project developer transferred their 70% stake to the local agricultural cooperative and received a service contract for maintenance of the turbines.

Investors from the outset are enjoying an annual return of 8.5% from the sale of electricity from their own plants. The Landes du Mené participatory wind farm produces up to 14.5 GWh of electricity per year, which corresponds to the consumption of around 3,000 households.

The community is already working on its next project: another wind farm with ten wind turbines also owned by the local population and implemented with the same project developer. In contrast to wind farm projects in other places, no resistance is to be expected in Le Mené, as people are looking forward to taking another step towards energy independence together and another opportunity for a lucrative investment.

Case EC 4 : Communidade de Energia Renovável (CER) in Pias, Portugal

2,500 inhabitants	Photovoltaic
Rural area	Energy efficiency
Financial gain and low emissions	Water supply

Pias is a municipality in a rural region of Portugal. The region lives mainly from its agricultural economy and is one of the economically weakest regions in Western Europe. For generations, many young people have moved to the big cities or abroad to find work. Those who remain form a cohesive community. The region's world-famous wines and olives are not only the primary source of revenue, but also the main reason for the water shortage, which affects both people and nature.

In this environment, a grassroot initiative has been founded: the Associação Amigos do Regato de Ponterrinhas – Communidade de Energia Renovável. Its members are well connected in the village and have contact with local associations, the administration and the parish.

As an initial measure, the energy community has built photovoltaic systems on two public buildings: the roof of a member's private home and the roof of a local company – for a total of almost 250 modules. The solar energy is used locally and directly by 84 consumption units of the members and public buildings.

The second measure focuses on water management and energy efficiency. In the water-scarce region, water for irrigating the fields has been pumped up the slopes from low-lying water reservoirs with the help of diesel generators in recent years. While the energy community was promoting its photovoltaic project to farmers, those involved recognised the huge potential for savings. The region has a historic irrigation system dating

back to the 18th century, which was no longer used due to inadequate maintenance and upkeep. According to the motto 'the most sustainable energy is the energy that is not consumed', investments were made in the repair and modernisation of the historic irrigation system. Since then, diesel engines have been used much less because the refurbished old irrigation system makes use of gravity.

Funding had to be raised for both projects. The solar project cost €80,000, of which the energy community itself was able to contribute €30,000. The remaining €50,000 was raised through crowdfunding. A total of 731 investors contributed to achieving the goal in exchange for the promise of a return of 5% per year with a term of five years. Most of the investors themselves come from the region in and around Pias and want to make a small contribution to the success of the project, but investment was open to everyone via a crowdfunding platform.

For the irrigation system, the public was also involved, and 353 investors were able to help the project get off the ground with €18,900. The repayment of the loans, including interest, is born by the energy community and the farmers, who in turn save on the cost of 3,000 litres of diesel per year.

The energy community in Pias has already achieved great results in the few years since the founding in 2021, implementing projects that together save 36 metric tons of CO2 every year. It also increases the sense of belonging to community among locals and ensures that added value is retained in this economically weak region.

Case EC 5: Heidelberger Energiegenossenschaft (HEG) in Germany

- 162,000 inhabitants
- Large city
- Public participation
- Photovoltaic
- Wind

Heidelberg is a large university city in the southwest of Germany, known for its long tradition of cultural sciences. The average income is well above the regional and national average, and many young people move to the city. Due to its geographical location and maritime influences from the west, average sunshine hours in Heidelberg are higher than the average for Germany.

Thanks to the commitment of one student, the sun is now being converted into energy on a large scale in Heidelberg. In 2010, he wondered why there were so few solar panels on the roofs of Heidelberg with all the sunshine and started a student initiative to install a solar system on the roof of the university, which was implemented the same year. The students involved wanted to pass on the experience they had gained and had the ambition to promote the energy transition in their city in a citizen-oriented way, and so 17 students founded the Heidelberg Energy Cooperative (HEG).

In 2022, 12 years after its foundation, 40 solar installations are in operation. These are spread throughout the city and are located on commercial, residential and public buildings, both on pitched and flat roofs. More and more homeowners regularly let the HEG use their roof surfaces to build a photovoltaic system. In return, they can purchase the generated solar power at very favourable conditions without having to make any investment of their own. In addition to the many solar plants, the HEG is also involved in several wind power projects, advises people on their plans for their own energy generation plants and acts as an ambassador for the energy transition.

The HEG is networked with other energy cooperatives in the south and west of the country via an umbrella organisation. Together, these cooperatives operate over 1,400 large and small renewable energy generation plants. The electricity produced is marketed by the cooperatives themselves; the umbrella organisation acts as an electricity supplier, offering exclusively green electricity. This offers two advantages: firstly, the cooperatives can generate more revenue than through the generally applicable feed-in rates, and secondly, the low-cost electricity offer raises awareness so that more customers consider a membership.

Membership is acquired by purchasing at least one cooperative share for €100 each. Investors can also combine the purchase of two shares with a subordinate loan of 800€, which is promised to be paid back over 20 years at a 3% p.a. interest rate. Other investment options do not exist, keeping the equity ratio high and making the administration effort as low as possible for the energy cooperative. In addition, the cooperative generates profits from the marketing of electricity. At the general meetings, all cooperative members can vote on whether some of the profits should be redistributed to members as dividends or whether the entire profit should be invested in new projects. So far, the cooperative has always opted for the growth strategy and invested everything in new projects. And here, we mean projects of the cooperative itself but also other projects. The cooperative is a founding member of other cooperatives, providing them with capital and expertise.

The Heidelberg Energy Cooperative is experiencing a real boom and has over 1,200 members at the end of 2022, which means a large amount of new money for project financing. Among the locals, the HEG is a recognised player in the city's energy transition. The city of Heidelberg has set itself ambitious climate targets and is promoting the expansion of solar energy. In this way, the city's population, municipality and the cooperative are positively influencing each other and working together to drive forward the expansion of renewable energies at a rapid pace.

Case EC 6: 'Śląska 12' in Szczytno, Poland

👫 23,000 inhabitants

🌞 Photovoltaic

🏞️ City

🕹️ Heat pumps

🏆 Financial gain and comfort

The town of **Szczytno** is located near two picturesque lake areas in the Masuria region. In addition to the considerable number of historic buildings, the town is comprised of typical post-war buildings with poor energy efficiency ratings. This is also the case with the block of flats at Ulica Śląska 12. The flats were traditionally heated with coal and, somewhat later, centrally with natural gas, which drives up energy prices due to the poorly insulated walls. The homeowners association wanted to tackle the problem in 2014.

The management board of the homeowners association had the idea of using renewable energies to upgrade the energy performance of the block of flats and make it less dependent on rising energy prices. However, demonstration material is still very rare and so they had to travel to Łeba, four hours away, where they could get an impression of the benefits of heat pumps. Subsequently, many individual conversations were held with the residents of the house, and they were invited to two meetings, which were also attended by experts from the heat pump and photovoltaic sectors. At these meetings, the housing association decided to invest in renewable energies themselves.

After that, everything happened quite quickly. Within just three months, the roof of the five-storey building was fitted with 153 photovoltaic modules and 24 wells are drilled almost 100 meters deep at the site of the playground in front of the building. These supply two heat pumps with water at a constant temperature from the depths, which use this temperature source to supply the existing heating system by using electrical energy from the roof of the building. When the heating system is satisfied, the surplus electricity is fed into the grid and a little extra income is earned.

From the equivalent of the €150,000 investment, the building community contributed €30,000 equity and took out a loan for €120,000. But the high investment is paying off. During the first two years after the measures were implemented, the residents saved 80% of their operating costs, amounting to €15,000 a year. A look at the neighbouring buildings provides further confirmation. These have not undergone any energy-efficient refurbishment and cost more than five times as much for energy per square meter.

According to their calculations, the 38 MWh of energy that the housing association now generates sustainably will avoid around 38 metric tons of carbon emissions. Thanks to the affordable energy, the residents are once again able to provide their homes with an appropriate living climate, which is also good for their health.

There is no longer any sign of the deep boreholes, and the playground has returned to its place after the ground cover was closed. Three years after implementing the first measure, the housing association has decided to cut its last dependencies on fossil fuels by adding more solar panels in combination with air-to-water heat pumps. In addition, the energy community of Śląska 12 is inspiring its neighbours and other housing associations throughout Poland to join forces to counteract energy prices and generate green energy.

Case EC 7: WEnCoop in Greece

👭 Country wide

🌞 Photovoltaic

🏆 Female empowerment

WEnCoop emerged as an example of empowerment, uniting female entrepreneurs across diverse backgrounds and cultures. In 2021, 60 businesswomen joined to create this initiative with the shared goal to promote clean, sustainable energy innovation facilitating their entrepreneurial skills. The spark that ignited WEnCoop was the realisation that women were underrepresented in the energy sector. They wanted to create a space where women could actively participate, shape and benefit from the energy landscape.

After overcoming the obstacles of bureaucracy as well as the challenge of being dispersed community whose members are spread across the country, their first project was nothing less than the construction of a 1-MW solar power plant in Kassandreia, Halkidiki. In less than one year after their founding, the solar power plant was built. WEnCoop aims to develop three more photovoltaic parks (each 1 MW) in the near future. At local and regional levels, the cooperative is committed to enhancing energy efficiency. WEnCoop fights energy poverty, ensuring that vulnerable groups, such as single-parent families, women and others, receive their fair share of clean energy, also by providing training to more than 500 women on energy efficiency. Their efforts are not only appreciated in Greece: As Europe's first female energy community, they made it to the finals in the European Sustainable Energy Awards in 2022.

Case EC 8: Comunità Energetica Femminile in Italy

23,700 inhabitants | Photovoltaic

Rural area | Wind

Fighting energy poverty & female empowerment

In the suburbs of Naples, there are social hotspots and neighbourhoods where families with below-average incomes live. The Comunità Energetica Femminile di San Giovanni a Teduccio is an energy community that provides financially disadvantaged families with access to affordable solar energy and thus noticeably improves the household budget. The cooperative is run by women and is aimed in particular at women, as they are often responsible for child-rearing and housework and are dependent on the constant availability of electricity and the correct use of energy.

The cooperative has equipped 40 families with PV systems and built a large community system with 53 KW on a community centre. In addition to the systems, the residents' houses are also to be upgraded to make them more energy-efficient and educational programmes are to be launched. The women-led cooperative is a pioneer in Italy in the use of energy communities to collectively combat social injustice.

Case EC 9: UT Energia Ühistu in Tallin, Estonia

Country wide | Photovoltaic

Pioneering consumer ownership | Wind

Founded in 2021, UT Energia Ühistu is the first energy cooperative in Estonia based on the need to involve local communities in the production of renewable energy and reduce dependence on fossil fuels. The cooperative aims to build renewable energy parks in collaboration with local communities. Members of the cooperative can acquire shares in solar or wind farms and thus generate stable long-term income in an environmentally friendly way.

The cooperative has already implemented several projects for the construction of solar and wind energy plants. Their solution to unfavourable regulations for energy sharing is that they partly use direct distribution wires to consume the self-generated power. In addition, workshops and information events are organised to raise awareness of renewable energies. The energy mix in Estonia still consists of 63% coal and oil shale, but this proportion is falling sharply.

The energy cooperative is financed in the traditional way from the membership fees and investments of the cooperative members. In addition, between 5% and 20% of the contributions are used for purposes that support the objectives of the cooperative.

UT Energia Ühistu plans to further expand its activities and initiate additional renewable energy projects. In the long term, the cooperative aims to make a significant contribution to Estonia's energy independence and strengthen local participation in the energy transition.

Case EC 10: Emerging energy community in Jiu Valley, Romania

Six municipalities

Photovoltaic

Fair transition

The Jiu Valley is known as the Valley of Tears and is one of the regions hit the hardest by the energy transition due to its important but declining coal industry. Only 4,000 from 50,000 miners in 1990 are still employed. And Romania has committed to phase out coal by 2032. In this context, Romania will receive over €2 billion from the EU to shape a just transition, which includes developing RES and prosumption. In this context, six municipalities of the valley are exploring the creation of a REC installing solar panels on the site of a former mine. The electricity produced would be used for street lighting and to lower the electricity bills of vulnerable households in social housing. The REC would additionally implement energy efficiency measures, renovate buildings and employ local technicians for maintenance. An important point is that municipalities are in the driver seat in this example. Naturally, it would be appealing to develop a narrative where former miners are developing and working for an energy community. However, this disregards the fact that most energy communities are run by volunteers and thus miners would not necessarily find a new job on one hand and on the other hand, that many citizens refuse to participate and a fortiori volunteer in collective initiatives in post-Communist countries.

One-stop shops (OSS) and incubators

Some of the energy communities presented here have been operating for decades. They are true pioneers in the participatory, citizen-initiated energy transition. The EU has recognised their added value and wants to facilitate the establishment of energy communities. This is why regulations have been passed over the years to strengthen the role of energy communities in the energy supply of the future. Among other things, instead of putting regulatory obstacles in their way, the EU countries are to create an enabling framework so that citizens can take the energy transition into their own hands. So-called ‘one-stop shops’ (OSS) play a key role. These are facilities where everyone can receive support in setting up an energy community. They act as an ally and are familiar with the typical issues and pitfalls that can arise when setting up an energy community. They are easy to contact and provide unbureaucratic help. They pass on technical and administrative knowledge and experience and arrange contacts with specialist planners and grid operators. They empower committed local citizens and have experience with citizen dialogs to ensure that the citizens’ initiatives are truly inclusive. But they do not do the work for you, they are there to act as mentors.

Case OSS 1: OSS ASEN in Asenovgrad, Bulgaria

While the regulatory framework for energy communities is still being prepared in Bulgaria, the city of Asenovgrad in the south of the country is already moving forward. A large proportion of the buildings are blocks of flats with many individual owners who want to reduce their energy bills but do not know how.

The homeowners can form an association that works like an energy community. Together they can implement energy-efficiency measures or invest in renewable energies. OSS ASEN supports homeowners in the process advising them on the best course of action and possible grants.

The one-stop shop is located in the municipal administration buildings and is open weekdays. Five so-called ‘implementation champions’ have been employed and trained by the municipality to provide the best advice. They have experience in business, technology and law.

In just over a year, 69 homeowners associations have been advised, resulting in 27 energy communities. Experience shows that confidence-building measures and detailed communication are essential. It was only after the scepticism of the first homeowners associations had been overcome and good experiences had been made with the advisory service that the recommendation to contact OSS ASEN spread by word of mouth.

But the flow of information also works in the other direction. In their work, the implementation champions experience the real challenges of the energy transition. Through their talks in Asenovgrad, they have recognised the danger that a large proportion of people are at risk of slipping into energy poverty. Accordingly, they can serve as experts and spokespeople in politics in order to initiate suitable support programmes.

Case OSS 2: Austrian Coordination Office for Energy Communities and regional counselling centres

Austria is perhaps the most advanced country in transposing EU regulations into national law based on the rate of operationalisation of the concept of energy communities. The national coordination office is an important building block in the establishment of energy communities. It functions as an online information platform for all stages of the foundation process and for all levels of background knowledge. The website contains, among other topics, basic explanations of the various forms of organisation for energy communities, step-by-step instructions for their establishment, elaborately produced explanatory videos and assistance for the operational management of energy communities.

Furthermore, there are contact details for the nine regional advice centres such as the Styrian Energy Agency. The agency is a state-owned company and implements the province’s climate and energy strategy in cooperation with municipalities, citizens, companies and the scientific community. It is now also supporting the region’s energy communities in the startup phase. As a central institution with many years of experience in local energy policy and administration, it provides valuable knowledge and good contacts. The advice centre offers consultation hours for citizens, but also trains experts who can provide technical advice on site.

This means that Austria has a multi-level support network that is coordinated at national level and is available uniformly throughout the country. As the issues become more specific, the contacts become more local and accessible. Hence, committed citizens do not have to train themselves as experts for energy communities, but can build on the existing knowledge from over 150 initiatives already established in Austria.

Best practice financing schemes

It is always important to emphasise that a good financial framework is necessary to support energy communities. This includes the OSS mentioned above, good regulation of individual provisions and legitimisation of energy communities. However, targeted direct support payments are also important, as are other players in the energy system. The following are some examples of successful financial support from other countries that were specifically designed for energy communities.

Case FS 1: Lithuania

The Lithuanian government supports energy communities that do not have any bigger businesses or municipal companies among their members with up to 45% of the investment costs for a photovoltaic system. The maximum subsidy is €897/kW of installed capacity. The PV systems must be connected to the public grid. A total of €63 million is available in the funding pot.

At the same time, a second package was put together to help energy communities that meet the above criteria to set up wind power plants. For every kW of installed capacity, project managers can expect to receive €1609, up to a funding limit of 3 MW. However, the plants may have an output of up to 6 MW in order to be eligible for funding. There is €18 million available in this funding pot.

Case FS 2: Spain

Spain has established a comprehensive support system for energy communities. Three centrally managed programmes provide support for energy communities in their different stages of development.

- CE-Learn supports individuals and organisations that are interested in setting up an energy community, trains them in the underlying concept and subsidises measures that serve, for example, to establish and expand a network for the energy community.
- CE-Plan helps with the establishment of the energy community itself. It finances the preparation of feasibility studies, supports the development of business models and offers technical and legal advice.
- CE-Implement is the part of the support programme that financially supports selected projects in setting up their community renewable energy projects in the areas of electricity, heat or electromobility, provided they qualify by clearly presenting their transformative potential.

The three lines of support are complemented by a network of Community Transformation Offices spread across the country, where energy communities can find support and advice at every stage of their development and be referred to the three programmes mentioned above. Together these programmes can work with a budget of €100 million.

Case FS 3: Austria

The Austrian Climate and Energy Fund provides energy communities with up to €20,000. The money is available to communities that go beyond the usual production and selling of renewable energy and therefore serve as a role model for other players, regardless of whether they individuals, municipalities, regions or project developers. A total of €5 million has been earmarked in this funding pot for this purpose.

The prerequisite for funding is that the energy community combines technical and social, ecological and organisational innovations in the provision of electricity, heating or cooling. To this end, a catalogue with ten criteria has been published, of which an energy community must meet at least five of these:

- Technical innovation:
  - Use of different generation technologies or use of innovative technologies (e.g., agri-PV)
  - Sector coupling

  - Use of storage technology to increase resilience
  - Energy management measures to increase efficiency
- Social innovation:
  - Community building, i.e., strengthening acceptance and raising awareness of energy-efficient behaviour
  - Social community benefits and addressing energy poverty
- Ecological innovation:
  - Utilisation of expansion potential in generation capacity
  - Regional economic benefits, e.g., through the use of local resources
- Organisational innovation:
  - Diversity and novelty of the participant structure
  - Reduction of dependence on traditional energy supply companies

Case FS 4: Italy

Italy has earmarked €2.2 billion from the budget for the recovery and resilience plan specifically for the establishment of energy communities in small municipalities. This means that up to €1 million per municipality is available for energy communities. Support is provided not only for the purchase and installation of systems, but also for technical support and legal advice to create good arrangements for the communities. Up to 100% of the project costs can be covered under certain circumstances, with the aim of bringing 2,500 GWh of renewable energy production capacity into the hands of the local population

Case FS 5: Ireland

In Ireland, the Renewable Energy Support Scheme (RESS) is designed to use market mechanisms to get the most cost-effective renewable electricity plants into the system and thus achieve the ambitious target of 80% renewable electricity in the grid by 2030. Renewable energy projects bid for capacity in an auction process, for which they then receive a guaranteed price for every kilowatt hour generated for the next 15 years. The auction mechanism sets the price, which means that only the most efficient projects are awarded a contract. For energy communities that follow the basic principles of open and voluntary participation, there is a separate category in the auction mechanism that protects the communities from unfair competition against projects in a commercial scale .

Abbreviations

CEC	Citizen Energy Community
EU	European Union
EED	Energy Efficiency Directive, Directive 2023/1791
EMD	Electricity Market Directive, Directive 2019/944
EMR	Electricity Market Regulation, Regulation 2019/943
EPBD	Energy Performance of Buildings Directive, Directive 2024/1275
ESCO	Energy Service Company
IDP	Internally Displaced People
LSG	Local Self-Government
MinEnergo	Ukrainian Ministry of Energy
NEURC	National Commission for State Regulation of Energy and Public Utilities
NGO	Non-Governmental Organisation
OSS	One-Stop Shop
RDNA3	Third Rapid Damage and Needs Assessment
REC	Renewable Energy Community
RED	Renewable Energy Directive, Directive 2018/2001
RES	Renewable Energy Source
REScoop	The European Federation of energy communities
SAEE	State Agency for Energy Efficiency and Energy Savings of Ukraine
SME	Small and Medium Enterprise

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