

Advancing Just Energy Transitions

Community Energy Projects in Central and Eastern Europe

Policy brief

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INTRODUCTION

Moving our societies to carbon neutrality is a huge challenge but crucial in reaching climate mitigation goals. Part of this challenge is to decarbonize the electricity, heating, and transport sectors, e.g. by shifting to renewable energy sources (RES), investing in crucial electricity grids, and improving energy efficiency. In order to be able to realize these changes on the ground we need to be fair and inclusive towards citizens. One approach to engaging citizens actively in the energy transition is to broaden their role from being energy consumers to also being energy producers—labeled as “prosumers” (Campos & Marín-González, 2020). Since the first citizen-owned wind farms in Germany emerged in the 1990s and 2000s, “community energy” or “citizen energy”¹ have become concepts widely known and researched (Van Der Schoor & Scholtens, 2019). Community energy projects thrive across Western and Northern Europe. By 2050, they could supply 37% of the total European energy (Caramizaru & Uihlein, 2020; REScoop MECISE, 2019).

In Central and Eastern Europe (CEE)² the role of communities in shaping and driving the energy transition is recently gaining prominence in many countries (Orhan Seda, 2022). This region stands at a critical juncture in its journey to develop a diversified energy system, with more RES solutions, and facing numerous challenges in involving citizens in the energy transition process (Mišík & Oravová, 2021).

This policy brief delves into the situation of community energy initiatives in CEE countries, highlighting ongoing research and capacity-building efforts on commu-

nity energy initiatives supported by the German Federal Environmental Foundation (DBU)³ and draws conclusions from a review of ongoing activities.

WHAT IS COMMUNITY ENERGY AND WHAT ARE THE BENEFITS AND CHALLENGES IN PRACTICE

Community energy initiatives represent situations in which a group of engaged citizens join forces to meaningfully invest in the energy sector, distinguished by their commitment to local ownership, decentralized electricity production for the local benefit, and characterized by democratic governance and active community engagement (REScoop, 2019). The benefits associated with community energy initiatives are manifold (Busch et al., 2021), ranging from reduced energy costs and stimulating the local economy through job creation, to empowering citizens and communities by democratizing energy governance. Moreover, citizen engagement in decision-making processes can ensure that energy solutions align better with local needs and preferences, fostering a collaborative spirit that strengthens social ties and the overall well-being of the community (Shortall et al., 2022). Additionally, these initiatives can help achieve a greater societal acceptance of overall RES projects and demystify renewable technologies as a result of direct involvement (Azarova et al., 2019). Energy communities can take different organizational forms such as associations and cooperatives (Caramizaru & Uihlein, 2020), and can be supported by various governmental instruments (Leonhardt et al., 2022).

Since 2019, EU frameworks have recognized energy communities. The Clean

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Energy Package established citizens' and communities' rights to become prosumers. This encompasses two EU legal categories: Renewable Energy Communities (RECs) and Citizen Energy Communities (CECs), defined respectively in the revised Renewable Energy Directive (EU) 2018/2001 and the revised Internal Electricity Market Directive (EU) 2019/944. Despite slight differences, both definitions emphasize that energy communities must prioritize environmental, social, or local economic values over just sole profits from investing in RES projects such as wind, solar, or bioenergy and others (Proka et al., 2022). Alongside EU efforts, various entities across Europe, such as umbrella organizations, cooperative networks, and funding institutions, have actively promoted and supported the expansion of energy communities (Debourdeau et al., 2024).

At the same time, energy communities in Europe also face numerous challenges. They include navigating complex regulatory settings, securing adequate financing, addressing technical expertise

gaps, ensuring electricity grid integration, overcoming social acceptance barriers, and competing in energy markets. These challenges underscore the need for supportive policies, financial incentives, information and capacity building, technical assistance, and community engagement to enable energy community initiatives (Koukoufikis et al., 2023).

COMMUNITY ENERGY INITIATIVES IN CENTRAL AND EASTERN EUROPE

Whether already part of the EU or aspiring to join, countries in CEE must pursue ambitious goals in achieving climate neutrality by 2050, following EU rules on climate, energy, and nature (European Commission, 2019). This is pressing given the region's heavy reliance on fossil fuels, such as in Poland, Czech Republic, Moldova, Serbia, Kosovo, and North Macedonia (Ember, 2023; Kardaś Szymon, 2024). Furthermore, some CEE countries are significantly impacted by energy poverty (lack of affordable energy services) including Bulgaria, Romania, Hungary, Albania, North Macedonia, and Montenegro (Heeman et al., 2022; Oikoplus, 2022). Additionally, the situation is exacerbated by frequent power outages in countries like Kosovo due to technical and financial difficulties, and Moldova primarily as a consequence of the Russian invasion of Ukraine (Bytyci, 2021; Jordan & Mcgrath, 2022).

The economic crisis sparked by the war in Ukraine has highlighted the importance of ramping up RES, along with energy efficiency. With fossil fuel prices fluctuating, and energy supply cuts and security issues, there is a pressing need to diversify the energy mix (Orhan Seda, 2022). CEE countries have the opportunity

to shift towards more RES, but also here uncertainties exist on affordability, technicalities, and environmental challenges.

One promising element of the solution for these countries might lay in citizen-driven energy communities that promote inclusive, democratic, sustainable, and decentralized energy systems. While CEE countries are still in the early stages of developing community energy initiatives, they are facing various financial, legal, and socio-technical barriers, with similar but also unique challenges, making generalizations difficult (Mišík & Oravcová, 2021). Transposing the EU legislation on energy communities into their legal framework is essential (Caramizaru & Uihlein, 2020). However, the regulatory frameworks of CEE countries present several challenges. The legacy of centralized energy systems from the socialist times is not fit to accept decentralized energy concepts - such as providing access of energy communities to the (often old) grid system (Anczewska et al., 2024). Financial support for energy communities is often not sufficient. Many people also don't know much about the concept of energy communities or don't understand their benefits in addition to the lack of trust for recently introduced EU policies and negative connotations with concepts such as "cooperatives" and collective ownership in post-socialist states (Lowitzsch et al., 2020; Spasova & Braungardt, 2021). Plus, technical skills and expertise are often missing (Orhan Seda, 2022). This diverse landscape of challenges spans the region, from Bulgaria to Hungary, Moldova, and Latvia to North Macedonia, showcasing a broad spectrum of environmental, socio-economic, and legal hurdles (DBU, 2024).

SUPPORTING COMMUNITY ENERGY UPTAKE IN CENTRAL AND EASTERN EUROPE

Numerous national and international entities, both public and private, play crucial roles in the development of energy communities in CEE countries. They provide legal, technical, and financial support, promoting a sustainable energy transition with citizens leading the way. The German Federal Environmental Foundation (DBU) is particularly focused on enhancing energy communities in the region in partnerships with local and international civil society, academia, and public and private institutions.

The diversity of approaches to supporting citizen energy initiatives can be clustered based on different characteristics. In this context, projects supporting the uptake of community energy initiatives can focus on societal awareness raising, capacity building, stakeholder engagement (empowering citizens), and environmental stewardship, or developing concrete model/pilot projects focusing on technological innovation, legal adjustment, economic empowerment, and knowledge exchange - often these characteristics are interlinked.

Based on this characterization, insights are provided from 13 DBU-funded projects supporting community energy concepts, running in 8 CEE countries (Albania, Czech Republic, Greece, Hungary, Latvia, Moldova, North Macedonia, and Slovakia). These projects aim to ramp up the participation of citizens and create the needed conditions for the establishment of innovative energy communities.

Capacity Building in Local Communities

Projects in Latvia and Moldova focus on building capacities for renewable energy

communities, especially in rural areas.⁴ From Latvia's efforts to promote renewable energy communities in rural regions via initiating dialogue processes to Moldova's focus on practical guidance and the development of rural bioenergy production via training of stakeholders and information events, these projects aim to enhance local capabilities, foster energy democracy, and promote environmental sustainability. Germany's positive experiences will be shared as good practices in both countries.

Developing Pilot Community Energy Projects

Projects in Greece, North Macedonia, and Moldova demonstrate concrete pilot initiatives.⁵ These range from developing the first community-led agri-photovoltaic (the co-production of solar energy and food) project in Greece and North Macedonia, the development of a citizen energy biomass pilot project in rural Moldova, and the installation of a PV-solar system on a building in North Macedonia combined with training courses on their use. Each pilot project explores innovative models of community energy, integrating renewable energy production with different practices or leveraging citizen engagement.

Empowering Marginalized and Under-represented Citizens

Projects in Albania and North Macedonia aim to empower marginalized and/or underrepresented citizens in the face of energy challenges and the transition to renewable sources.⁶ In Albania, the focus is on developing recommendations, policy advice, and training material for gender-just energy communities. This involves

engaging female rural entrepreneurs, low-income households, and young people. In North Macedonia, a project seeks to empower energy-vulnerable citizens of the Albanian minority by establishing energy communities, using the method of "*citizens' assembly*" at the municipal level.

Feasibility Studies for Integrating Energy Communities in Neighborhood Development

The focus of projects in the Czech Republic and Slovakia is on engaging stakeholders in the development of new districts encompassing decarbonized energy systems and exploring the potential of community energy.⁷ In Slovakia, a feasibility study examines the potential for the integration of energy communities in the development of new housing with an alternative heat and power supply at the neighborhood level in the Mayer Malacky district. In the Czech Republic, the project in the city of Židlochovice conducts a feasibility study for an energy community integrated into the development of a planned zero-energy district. Both studies aim to implement pilot energy community initiatives and to draw recommendations for comparable developments in these countries.

Institutionalizing Community Energy Capacities and Knowledge Exchange

Projects in Hungary and the Czech Republic, emphasize the creation and support of coordinating associations for energy communities as a means of fostering knowledge exchange and capacity building.⁸ The development of special institutions, in Hungary the municipal energy development agency and in the Czech Republic the Union of Community Energy shall

support the share of information about model community energy projects, financing opportunities, and manuals on how to set up community energy projects and shall serve as central hubs for community energy initiatives. Both projects draw on mutual knowledge exchange with German partners, making use of best practice examples by German NGOs.

CONCLUSIONS

Energy communities are crucial for advancing a just clean energy transition, yet their progress varies across CEE countries. In CEE countries, the development of energy communities is deeply influenced by historical legacies and present socio-economic conditions, with socialist and communist pasts influencing their establishment, compounded by limited capacity and fragmented understanding of newly introduced citizen-led energy concepts. Several national legislations recognize the importance of energy communities, with some, however, still overlooking the matter and adding bureaucratic hurdles. Socio-economic disparities hinder progress in some parts, particularly for marginalized citizens. Despite EU legislation supporting citizen participation in generating, consuming, and sharing electricity, further efforts are needed for the implementation of community energy initiatives on the ground. Unlike Western and Northern Europe's grassroots initiatives established for decades now, initiatives in CEE states are faced with a top-down approach to community energy mainly coming from recent EU legislation. Adopting EU legislation can be challenging often due to the lack of local contextualization, strict national legislation, overwhelmed

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authorities without enough capacities, and infrastructure difficulties coupled often with socio-political resistance to change.

In a nutshell, to foster energy communities as enablers of just energy transition, it is important to develop targeted concepts tailored to the specific context. This can be done by supporting projects aiming at awareness-raising and capacity-building activities, best practice dissemination, scrutinizing policies and financial scarcities, and ultimately deriving valuable learning experiences. Sharing experiences and consolidating results between projects in CEE strengthens networking among stakeholders, promoting effective grassroots implementation of community energy initiatives. Finally, research on country-specific enabling and hindering factors is needed to support the adoption of tailored and evidence-based policies and regulations for the uptake of community energy initiatives.

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- 1 We use the term “community energy” in this paper to account for the many different terms used in this context such as, “renewable energy communities”, “citizen energy communities”, “citizen energy”, “community-led energy initiatives” etc.
- 2 CEE countries in this context are Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Greece, Kosovo, Latvia, Lithuania, Moldova, Montenegro, North Macedonia, Poland, Romania, Serbia, Slovakia, Slovenia, and Ukraine.
- 3 <https://www.dbu.de/en/promotion/project-funding/international-projects/citizen-energy/>
- 4 For Latvia, see <https://www.dbu.de/en/projektbeispiele/catalysing-and-building-capacities-for-renewable-energy-communities-in-rural-latvia/>. For Moldova, see <https://www.dbu.de/en/projektbeispiele/practical-guidance-on-community-energy-as-regional-self-help-in-moldova/> and <https://www.dbu.de/en/projektbeispiele/rural-biogas-plants-in-the-client-model-in-the-republic-of-moldova/>
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