






Deliverable 5.2 – TANDEMS Policy Framework Report

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¹ **R** = Document, Report; **Dem** = Demonstrator, pilot, prototype; **DEC** = website, patent filings, videos, etc; **OTHER** = other

² **PU** = Public, **SE** = Sensitive



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EXECUTIVE SUMMARY

The document takes a deep dive into of the policy landscape for energy communities in three pilot regions: Antwerp (Belgium), Burgas and Gabrovo (Bulgaria), and Achterhoek (Netherlands). Conducted under the TANDEMS project, this study explores opportunities and challenges in establishing energy communities, highlighting the need for supportive regulatory frameworks to ensure their success.

Key insights

Energy Communities & EU Policy

- Energy communities are essential to the energy transition, empowering citizens, businesses, and local authorities to co-produce, consume, and manage renewable energy.
- The report analyses the EU legislative framework, including the Renewable Energy Directive (RED III) and the Electricity Market Directive (EMD), which encourage citizen participation and decentralized energy systems.

Country-Specific Developments

- **Belgium:** The Flemish government has made significant strides in implementing Renewable Energy Communities (RECs) and Citizen Energy Communities (CECs), though barriers remain in financial viability, grid integration, and market participation.
- **Bulgaria:** While legal recognition of energy communities has been introduced, challenges persist in financing, administrative complexity, and regulatory clarity, limiting their large-scale deployment.
- **The Netherlands:** The recent Energy Law (2024) defines energy communities but still restricts energy-sharing contracts. Amendments to allow supplier choice in energy sharing are under discussion.

TANDEMS Pilot Projects & Models

- **Belgium:** The Mechelen/Klimaan Otterbeek pilot demonstrated a model for energy access for vulnerable households, leveraging municipal cooperation and cooperative investments.
- **Bulgaria:** Two pilot models explored public-private partnerships and multi-family residential buildings, revealing obstacles in legal structuring, financing, and market integration.
- **Netherlands:** The BioZon pilot has influenced national policy discussions on energy sharing with supplier choice, while Naaberwind tested municipal support for local wind energy ownership.

Policy Recommendations

- Simplify regulations to facilitate energy sharing and reduce barriers and administrative burdens.
- Ensure fair pricing & eliminate excessive fees for energy-sharing services, especially for vulnerable households.



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- Enhance financial support mechanisms, such as subsidies, tax incentives, and dedicated funds.
- Increase digitalization & smart metering to improve energy-sharing efficiency.
- Promote public awareness & capacity building for local actors to drive community-led energy initiatives.

Through its analysis, the Policy Framework Report provides actionable insights for policymakers, energy regulators, and community stakeholders, aiming to accelerate the integration of energy communities as a cornerstone of Europe's sustainable energy transition.



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LIST OF ABBREVIATIONS

BRP	Balancing Responsible Party
CEC	Citizens Energy Community
DSO	Distribution System Operator
EED	Energy Efficiency Directive
EMD	Electricity Market Directive
PV	Photo Voltaic
REC	Renewable Energy Community
RED	Renewable Energy Directive
VEKA	Flemish Energy and Climate Energy
VREG	Flemish Energy Regulator



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1 INTRODUCTION

The Policy Framework Report provides a comprehensive analysis of the current policy landscape for energy communities in three pilot countries: Belgium, Bulgaria and the Netherlands. The report focuses on the respective regions of the province of Antwerp in Flanders, Belgium; the municipalities of Burgas and Gabrovo in Bulgaria; and the Achterhoek region in the province of Gelderland, the Netherlands. These regions, selected under the TANDEMS project, serve as pilot areas for exploring the opportunities and challenges related to energy communities.

Energy communities are gaining recognition as a vital component of the energy transition, empowering citizens, businesses and local authorities to jointly produce, consume and manage renewable energy. However, the effective establishment and operation of energy communities require supportive policy frameworks, which often vary significantly across national and regional contexts.

The report is structured into several thematic sections:

Energy Communities in the EU Legislative Framework

This chapter examines the existing legal, institutional, and operational frameworks posited in current EU strategic documents. It discusses all relevant legislation and formulated EU level recommendations for policy improvements.

National level developments in Belgium, Bulgaria and the Netherlands

Drawing on findings from real-world models and projects as well as the policy dialogues initiated by the project partners, these chapters highlight the current situation in each of the pilot countries. Here, we will discuss the ways policy affects the projects being implemented as well as the barriers to the creation and scaling of energy communities, ranging from legal and financial obstacles to administrative and technical challenges. Each country chapter ends with policy recommendations.

Policy Recommendations

Based on the analysis of existing frameworks and identified barriers, each country chapter features actionable policy recommendations to facilitate the widespread adoption and success of energy communities in the pilot regions and beyond.

Through this analysis, the Policy Framework Report aims to provide insights and practical solutions for advancing energy communities as a cornerstone of the energy transition, contributing to more sustainable and resilient local energy systems.



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2 ENERGY COMMUNITIES IN THE EU LEGISLATIVE FRAMEWORK

The European Union has developed a comprehensive policy framework to promote energy communities, recognizing their role for fair energy transition to a sustainable and decentralized energy system. This framework is primarily established through key directives and initiatives that encourage citizen participation and the adoption of renewable energy sources.

The Renewable Energy Directive III³ (RED III) came into force in October 2023, and sets a binding target for the EU to achieve at least 42.5% renewable energy in gross final energy consumption by 2030, with an aspirational goal of reaching 45%. It continues to promote Renewable Energy Communities (RECs), allowing citizens, small businesses, and local authorities to collectively produce, store and consume renewable energy. RED III also introduces simplified procedures for deploying renewable technologies, such as solar panels and heat pumps, to facilitate rapid implementation.

The Electricity Market Directive⁴ (EMD) has been recently updated through Directive (EU) 2024/1711, reflecting the evolving needs of the energy market. The new directive strengthens the framework for Citizen Energy Communities (CECs) by expanding their scope and ensuring fair treatment in market participation. It promotes transparency in grid access and pricing, streamlines administrative procedures, and removes barriers that hinder the participation of smaller, community-driven energy actors. The directive emphasizes the integration of CECs into national energy strategies, enabling them to play a central role in decentralized energy systems.

Beyond these directives, recent EU policy developments further reinforce the role of energy communities. The Action Plan for Affordable Energy⁵ aims to address energy affordability issues and ensure that vulnerable citizens benefit from the energy transition. However, shortcomings in its current implementation limit the full potential of energy communities in tackling energy poverty. The Citizens Energy Package⁶, expected to be further developed, presents an opportunity to reinforce citizen-led energy initiatives and ensure equitable access to renewable energy solutions.

The REPowerEU Plan, adopted in response to the energy crisis and geopolitical tensions, provides additional momentum to the development of energy communities. REPowerEU aims to reduce the EU's dependency on fossil fuel imports, particularly from Russia, by accelerating the deployment of renewable energy and enhancing energy efficiency. Energy communities are a central element of this plan, as they offer local, citizen-driven solutions for renewable energy production and consumption. The plan includes financial support mechanisms, such as grants and loans, to facilitate the creation and scaling of energy communities, as well as streamlined permitting processes for renewable energy projects.

³ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32023L2413&qid=1699364355105>

⁴ <https://eur-lex.europa.eu/eli/dir/2024/1711/oj/eng>

⁵ https://energy.ec.europa.eu/strategy/affordable-energy_en

⁶ https://energy.ec.europa.eu/news/work-begins-citizens-energy-package-ensure-fair-and-inclusive-energy-transition-2024-12-19_en



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The Energy Efficiency Directive (EED) complements these efforts by supporting community-led initiatives in energy savings and demand-side management, further empowering citizens to contribute to the energy transition.

A key challenge remains the financing of Energy Communities, which has been recognized at the EU level. Commissioner Jorgensen⁷ has acknowledged the need for dedicated financial support to ensure that Energy Communities can develop and expand, contributing to the just transition. Mechanisms such as the Just Transition Fund, Horizon Europe, and other financing instruments are expected to play a crucial role in facilitating these efforts.

Member States are required to create supportive legal and regulatory frameworks for energy communities, addressing obstacles such as financing, administrative complexity and technical challenges. Although implementation varies at national level, the common EU framework ensures that energy communities have the opportunity to develop across Europe. Legislative synchronization remains a challenge, as countries implement directives at different speeds.

The TANDEMS project plays a crucial role in supporting Energy Communities across Belgium, Bulgaria, and the Netherlands. A core objective is to analyze national implementation gaps and advocate for more robust support mechanisms at both national and EU levels. The project collaborates closely with REScoopEU, which provides key insights into the progress and challenges faced by energy communities in different countries.

In Belgium, the implementation status of EU Directives related to Energy Communities varies between the three regions: Brussels Capital Region, Flanders and Wallonia, since they have different legal transpositions. This leads to a fragmented implementation landscape, with each region progressing at its own pace in aligning with EU directives on Energy Communities. In this report, special attention is paid to Flanders region.

In Bulgaria, the first steps towards implementing the Energy Community frameworks were taken in October 2023. In January 2023, the European Commission had referred Bulgaria to the Court of Justice of the EU for failing to incorporate the EU Renewable Energy Directive into national law.

In the Netherlands, the new Energy Law was passed through parlement in 2024 and will go into effect in 2026. This law includes the definition of a citizen energy community (CEC) and a renewable energy community (REC). There is, however, still some debate about the conformity to the European definitions. Energy sharing has also been included in the law, it does however come with the restrictions that the active customers have to be serviced by the same supplier. With the EMD transposition, expected in 2025, this restriction will be lifted.

TANDEMS is also actively engaged in collaborations with five sister projects and has contributed to discussions at the EU Sustainable Energy Week. These collaborations aim to share best practices, enhance policy advocacy, and strengthen the role of energy communities in the broader energy transition.

Despite significant progress, challenges remain in aligning national policies with EU directives, addressing financial and technical barriers, and raising awareness of the benefits of Energy

⁷ https://ec.europa.eu/commission/presscorner/detail/en/speech_25_767



Communities. The EU's policy framework continues to evolve, with a focus on fostering inclusivity, innovation, and sustainability in energy markets. TANDEMS and its partners remain committed to advocating for fair and effective policies that empower citizens and communities in the energy transition.



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3 BELGIUM

3.1 Current developments

The concept of Citizen Energy Communities and Renewable Energy Communities as established in the European Renewable Energy Directive 2018/2001 and the Electricity Market Directive 2019/944 has subsequently been transposed into Flemish Energy Decree in 2021 (by an amendment of the Energy Decree of 8 May 2009). A REC is defined as an open and voluntary cooperative initiative in which citizens, businesses, and public authorities collectively produce, consume, store, and/or sell renewable energy. The primary objective is not purely economic (generating profit), but rather to provide environmental, social, and/or economic benefits to its members or the local community.

Energy communities can engage in various activities within the energy market, including the production of electricity from renewable sources, management of energy storage systems, provision of energy services, and promotion of energy efficiency. They can also supply electricity to their members or even to the wider public, as well as engage in energy sharing.

As of September 2024, the Flemish government is actively developing its enabling framework for energy communities (both CECs and RECs). While a comprehensive framework is still in progress, several initiatives at both local and federal levels demonstrate a commitment to fostering community energy projects.

Local Initiatives:

- **Municipal Engagement:** Some municipalities have proactively included local participation clauses in public tenders for renewable energy projects on publicly owned property, ensuring community involvement in energy transition efforts.
- **Technical Assistance Hubs (TEAH):** Established to support local actors, these hubs provide subsidies and assistance in forming energy communities, with a focus on aiding those affected by energy poverty.
- **Energy Houses:** Operating at the municipal level, Energy Houses offer information, financial aid, and other support to citizens and collectives. Their services encompass energy consumption reduction, facilitation of renovations, and initiation of community solar photovoltaic (PV) projects.

Regulatory Assessments and Recommendations:

- **Energy Sharing Framework:** Implemented since 2023, this framework allows for energy sharing among communities. However, a cost-benefit analysis conducted by VITO for the Flemish Energy Regulator (VREG) indicated that, under the current regulatory and market conditions, energy sharing does not yet offer significant benefits to the grid.
- **Regulatory Framework Evaluation:** In 2024, the Flemish Energy and Climate Energy (VEKA) evaluated the existing legal framework for energy communities, identifying several barriers that need to be overcome:

1. Finance & Organization:



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- Energy sharing has high administrative and financial entry barriers, limiting accessibility for small actors.
 - Energy communities require stable funding models, but many struggle with financial viability.
 - Lack of clear incentives makes participation uncertain for investors and citizens.
2. Market & Economy
- The current energy market is not adapted to decentralized, collective energy models.
 - Economic feasibility remains unclear due to unpredictable financial returns.
 - Energy suppliers have concerns about losing market share and impose additional costs or requirements on energy-sharing participants.
3. Technology
- Technical implementation (metering, grid management) is complex, especially in multi-user settings (e.g., apartment buildings).
 - Integration of energy sharing into digital platforms (Fluvius, VREG) is still evolving.
 - Lack of technical knowledge among smaller stakeholders limits participation.
4. Institution & Governance
- Regulatory frameworks exist but remain complex for new participants.
 - Lack of clarity on roles and responsibilities of energy communities, cooperatives, and grid operators.
 - Governance models vary, making it difficult to scale up successful projects.
5. Regulation
- While EU and Flemish regulations enable energy sharing, the practical application is still evolving.
 - Current laws do not fully support collective investments in energy infrastructure (e.g., shared solar panels).
 - Standardized contracts, administrative simplification, and better coordination are needed to lower participation barriers.

Operational Protocols:

- **Energy Sharing Procedures:** Collective self-consumption is currently permitted at the building level, with energy sharing beyond this scope facilitated for RECs and CECs. VREG has approved a protocol developed by Distribution System Operators (DSOs) that outlines the management and notification processes for energy sharing within communities, including volume calculation, data exchange, monitoring, and complaint handling.

Registration and Oversight:

- **Energy Community Registration:** The VREG maintains a public registry for energy communities. However, the current lack of stringent registration criteria and oversight raises concerns about potential corporate misuse and legal ambiguities. Strengthening the screening process to ensure compliance with established criteria is recommended to prevent abuse and maintain the integrity of energy communities.



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In summary, while Flanders has initiated several positive steps toward supporting energy communities, there is a recognized need for a more robust and comprehensive enabling framework. Ongoing evaluations and the implementation of recommended measures are essential to fully empower RECs and CECs in contributing effectively to the region's energy transition.

Additionally, at the federal level (Belgium), **federal support schemes for offshore renewable energy projects** now include provisions that enable energy communities to participate in the financing and ownership of offshore wind developments.

3.2 TANDEMS models in the policy context

In Mechelen (Belgium), TANDEMS explored how the energy transition could be accelerated when the municipality and its' social housing company collaborates optimally with renewable energy cooperatives as Klimaan and organised citizens in multi-family buildings. In a neighbourhood of social houses, namely 'Otterbeek', all 197 living units have been equipped with solar panel installations. Furthermore, collective solar panel installations were promoted for condominiums or multi-family buildings.

This TANDEMS-model is characterized by a 'social access for all' and the 'learning by doing' approach:

3.2.1 Social access for all

What most vulnerable households (meaning: social tariffs beneficiaries, social house tenants, those living in smaller flats, low-income segments of the population, or those with health or mobility limitations) have in common, is that usually energy transition and climate change is not the first priority in their daily survival. It is not that they are not concerned or worried about climate change and the energy transition, but that they usually lack technical knowledge and the required investment capital or situational context to take effective action. Providing support and guidance to make the step requires important social work in communication, information, co-creation, etc.

In addition, if the energy transition is exclusive for the better-off groups, those able to access all available subsidies, it will leave the more vulnerable in the end stuck with fossil fuel solutions, leading to more inequality and a rise in social tensions, which will then might even delay needed policy changes to speed up the transition out of fossil fuels. We have no choice but to realize a socially fair energy transition. The TANDEMS pilots in Mechelen demonstrate that there is a large potential in using all rooftop PV for production of renewable energy, allowing a cheap renewable energy source for all in a fossil-free future. Green energy tends to be cheap energy. Solar panels at the Otterbeek pilot demonstrate a production of energy at 6 ct/kWh.

Overall, technically it is possible that with collective PV on flats or with collective PV-installations for social renters, a large and cheap available renewable energy can be provided for the more vulnerable segments of the population.



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3.2.2 Learning by doing

In practice, however, the above theory looks less appealing. In Flanders, whereas individual villa owners have capital to invest in solar panels for their own use, providing themselves with cheap renewable energy, in flats and energy sharing communities this is harder to become a reality.

- **Acting quickly is dealing with risks.** In Otterbeek, direct action and a learning by doing approach, has meant that the partners had the opportunity to not lose time with preliminary studies, vision building, etc. As the context is changing so quickly, studies might have been outdated before the action-phase would have followed. By starting in an early phase with action, solar installations were realised and are actually directly benefiting social households. The energy cooperative Klimaan mobilised the investment capital of some better-off fellow-citizens. The role of the municipality was to provide a minimum price (contract for difference) for excess energy that is not consumed so that the investment costs could always be gained back within the lifespan period of the solar installations. Such security mechanisms allow quick action experiments to be realised in a safe way.
- **A financial business case is fundamental.** In the long-run energy sharing, or any other business cases, will only survive if they are profitable. In Flanders, individual house owners are able to profit from their renewable energy, but when a collective installation is needed, as is the case for a condominium or for sharing between social renters, a long range of additional costs makes access to renewable energy much more expensive for those groups:
 - Energy suppliers introduced a high additional fixed fee for energy sharing usually between 60 and 150 euro, making it a loss-making activity for all that share small volumes of energy.
 - Additional grid fees are required once energy is shared through the grid, even for sharing within one multi-family building. From the moment the grid is used, also energy shared was subjected to all kind of taxes going from VAT, taxes based on channelled kWh and grid fees.

It is important to note that in Otterbeek, the project was beneficial in bringing available renewable energy to the social renters at an affordable cheap price. The business case was profitable for the own energy production and consumption within the household where the solar panels were installed. However, the number of beneficiaries could have been much higher if the business case of sharing excess energy also with social renters in other houses, was a positive business case.

- **Legally, technically and administratively possible.** By setting up the energy sharing communities, we demonstrate that it is possible. Legally, energy can be shared and administrated. However, a long range of permission requirements to share data, informing people how complex systems work, lacking tools and data platforms for cheap and automated handling of transactions, a lacking API to communicate easily with management data of the DSO, etc..., showed that important efforts and as such human resources were required to guide vulnerable, often less digitalized, groups of beneficiaries through this process. Lastly, fiscality and VAT-rules issues were also exposed. For example, private



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persons can handle small amounts without VAT, while energy cooperatives handle with 21% VAT on energy services, and energy suppliers deliver energy at 6% VAT.

In conclusion, energy sharing as a concept has high potential to make the energy transition more social and fairer, produce larger volumes of renewable energy, and involve citizens more actively in the energy transition. Over time, the hurdles to smoother procedures and automated transaction administration will follow, provided at least intended obstacles in the financial business case can be removed.

3.3 Policy recommendations

These policy recommendations are the result of:

- The findings of the TANDEMS project pilots implemented in Belgium (Flanders), which highlighted the potential and challenges of energy sharing and community energy projects.
- Ongoing communication, feedback, and continuous policy dialogue with key stakeholders, including municipalities, energy cooperatives, citizens, and energy suppliers, ensuring that the recommendations are grounded in practical realities and address diverse perspectives.

The recommendations aim to provide actionable guidance for policymakers to create a more enabling and equitable framework for Renewable Energy Communities (RECs). They also seek to foster the wider adoption of successful models, promoting a just energy transition that benefits all citizens, especially the most vulnerable. Additionally, they address identified barriers in regulation, finance, technology, and governance to unlock the full potential of energy sharing and community-driven renewable energy initiatives.

The role of public authorities

- Public authorities, such as municipalities, provide risk absorbing instruments to engage more vulnerable households as forerunners in the energy transition, not leaving them out with the burden of being the last fossil fuel users. Allow also risk free experimental environments for them.
- ETS2 and the European Social Climate Fund gives authorities the means not only to provide carbon subsidies for the vulnerable, but also the opportunity to involve backward groups into the transition towards renewable energy. Comfortable and affordable housing and accessible mobility are most important cornerstones of pro-poor climate transition. Energy communities and pro-poor organizations are well positioned partners to build together inclusive transition paths with collective action in favour of vulnerable groups. The budget of the European Social Climate Fund can be reserved for upscaling such actions and providing social guidance and communication costs as risk mechanisms for those initiatives.

Energy sharing

- Provide regulation that avoids overcharging the service of sharing electricity between citizens, especially when the sharing occurs between more vulnerable societal groups, for instance:
 - No additional energy sharing fees allowed for social tariffs consumers.



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- No additional tariffs allowed for sharing within one building: no grid-fees, no government taxes whatsoever, no possibility for energy suppliers to add additional service charges. Maybe such a tariff, whether forbidden or with reduced rates, can be extended to energy shared with other vulnerable groups, privileging rather those groups instead of disadvantaging them compared to private house owners.
- In Flanders, energy suppliers justified their additional too expensive administrative share, because of reasons that could have been avoided.
 - Because they were attributed Balancing Responsible Party (BRP)-responsibility for energy sharing, while BRP-responsibility could better be assigned to the DSO as the Brussels region did in Belgium.
 - Manual administration as the energy sharing was communicated through side data processes, which are harder to automate. It would be better if energy sharing can be handled through the standard automated data sharing tools as used for normal energy supply through the basic grid.
 - Energy suppliers were asked by the government to administrate and collect all kind of taxes on energy (and thus also for shared energy). Providing tax rebates on shared energy and automate tax payments on shared energy at DSO-level might reduce this burden and reason for tax collection administration fees. It can also be forbidden to charge additional tax collection fees to consumers and maybe government can pay out directly energy suppliers for their role in energy sharing.
- When measures are not possible for overall energy sharing between citizens, specific measures can at least be provided within condominiums and for sharing with a vulnerable target group.
- Open source and cheap to use software and platforms to serve energy sharing have to be developed.

Empowering vulnerable groups

- Recognise third party investments for the sake of vulnerable target groups, so that they can be given equal advantages. House owners that renovate or invest for social rental, should have the same premiums and advantages as their tenants themselves. Citizens to invest in solar panels and other energy transition measures for the vulnerable should be allowed the same possibilities and support as the beneficiaries of their investment.
- Allow experimental room for learning by doing, which is more effective than preparatory studies, research, developing burdening control and monitoring systems, etc. Let quick and effective action be in the centre when orienting support budgets of diverse programs. Also in the next steps, making flexibility services, neighbourhood batteries and access to charging EVs at a charge cost fair compared to those with private individual solar panels, are next challenges requiring 'learning by doing' solution development to keep all citizens involved in the climate transition.
- Recognise that involving vulnerable groups requires more intensive investments in communication, information sharing, participatory co-creation. Local ambassadors can be used, even as embedding actions in other local events reaching also vulnerable groups. For this intensive guidance and communication events, subsidised human resources will always be needed and will be hard to become part of a commercial business model. Energy communities, generate sometimes volunteers of less vulnerable society groups, that are genuine in their motivation to provide time for socially and environmentally sound actions. They provide additional reflections, time for action and network support. Additional means



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for adequate coaching and coordinating such volunteers can have a multiplier effect in what can be reached.

Ensuring fair energy transition requires targeted support for vulnerable households, including risk-absorbing instruments, fair regulations, and accessible participation in energy sharing. By leveraging policy measures, Social Climate Funds, and community-driven initiatives, authorities can promote fair access to renewable energy while preventing financial burdens on disadvantaged groups.



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4 BULGARIA

4.1 Current developments

Bulgaria's policy framework for energy communities reflects some progress in aligning with European Union directives, yet significant challenges remain, particularly regarding practical implementation and support mechanisms. The recent amendments to the Renewable Energy Act and the Energy Act introduce a legal definition for energy communities, a necessary first step for compliance with EU legislation such as the Renewable Energy Directive III (RED III). However, these amendments fall short of fostering the widespread establishment and development of energy communities across the country.

The Energy Act, as amended in 2023, defines Citizen Energy Communities (CECs) and recognizes their potential role in energy generation, distribution, and consumption. While this inclusion marks a positive shift towards enabling citizen participation, the law does little to address the structural barriers that hinder the mass roll-out of energy communities. Key obstacles such as access to financing, administrative complexities, and the lack of dedicated support mechanisms remain largely unaddressed.

A significant shortcoming of the legislative framework is its failure to simplify the process of establishing energy communities. Administrative requirements are still burdensome, and no specialized governmental body or streamlined procedure has been introduced to guide citizens or organizations through the process. Without a supportive ecosystem, the establishment of energy communities remains a daunting task, especially for small and local actors who lack the resources to navigate complex regulatory environments. Compounding this issue is the long postponement of market liberalization for households and the continuation of subsidized electricity prices. These policies, while providing short-term relief, fail to motivate consumers to participate in energy communities and make energy sharing practically impossible under the current structure.

Furthermore, while the Energy Act aligns with EU requirements by recognizing energy communities, it does not provide sufficient financial or technical support. Banks and financial institutions in Bulgaria often do not recognize energy communities as viable entities, leaving them without access to tailored financial products or investment opportunities. The absence of subsidies, grants, or favourable tax conditions further exacerbates the challenge, making it difficult for energy communities to achieve financial sustainability.

Public awareness and community engagement are also inadequately addressed. The legislation does not include measures to educate citizens or promote the benefits of energy communities. Without targeted campaigns or outreach efforts, the potential for grassroots movements to drive the energy transition remains untapped.

In conclusion, while Bulgaria has made progress by incorporating the concept of energy communities into its legislative framework, the current policy lacks the robust support and facilitation mechanisms necessary for their mass roll-out. The long delay in market



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liberalization and subsidized electricity prices further hinder the development of energy communities, limiting consumer motivation and preventing energy sharing. For energy communities to thrive and contribute meaningfully to the country's renewable energy targets, the government must introduce more comprehensive measures, including financial incentives, streamlined administrative processes, and capacity-building initiatives. Without these enhancements, energy communities in Bulgaria will struggle to move beyond theoretical definitions and isolated pilot projects.

4.2 TANDEMS models in the policy context

Two models were developed in Bulgaria to test the environment and pave the way for mass roll-out of the energy communities in the country. The first model is based on Public-private partnerships with strong engagement of the local authorities and the second one is based on community organised within multifamily residential building. The main steps of the establishment of energy community for each model as well as the challenges faced are presented hereafter.

4.2.1 *Public private partnership*

Gabrovo and Burgas initiated pilot projects and two energy communities were established in these cities, following the initially developed model. The main steps of the model and the challenges faced are presented here:

I. Preparatory Activities

- a. Initial decision on what kind of project will be developed.
- b. Selection of a potential site for the installation.
- c. Business model development and approval.
- d. Preparation of administrative documents.
- e. Approval from the Municipal Council and announcement of an open call.

Challenges: The establishment of energy communities requires extensive preparatory work, including investments and human resources. Given that these initiatives are still at a pilot stage in Bulgaria, it is essential to create clear conditions and rules to build trust among potential participants. Currently, there is a lack of political support, and while legislation allows for full flexibility in this process, it also means that these communities must start from scratch. Developing contractual and legal models for cooperation is a fundamental challenge that must be addressed.

II. Fund Raising

- a. Active communication campaign and administration.
- b. Official closing of the campaign once the funds are raised.

Challenges: There is a lack of political support for promoting energy communities, which poses a significant barrier to their development and wider adoption.



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III. Project Implementation

- a. Establishing the community.
- b. Construction works and commissioning.

Challenges: There is no specific legal form for energy communities in national legislation; existing legal forms are used, which complicates the process of establishing energy communities. Furthermore, commercial banks do not recognise energy communities and do not have specialised products targeted at them.

IV. Operation and Management

- a. Monitoring and maintenance.
- b. Reporting.
- c. Accounting.

Challenges: There is no option to share energy with community members who are not part of the free energy market, hence no variety of models exist.

Overall, the establishment of energy communities requires substantial preparatory work, including significant investments and human resources. As these initiatives remain in a pilot stage in Bulgaria, it is crucial to create clear conditions and rules to foster trust among potential participants. Currently, there is a lack of political support, and while existing legislation provides flexibility, it also leaves these communities to build frameworks from scratch. Developing contractual and legal models for cooperation is one of the primary challenges that must be addressed.

There is no specific legal form tailored to energy communities, and existing structures are being adapted or used as a workaround. Simplifying these processes could accelerate progress. Additionally, banks do not yet recognize energy communities as viable entities, limiting their access to financing.

Another critical barrier is the inability to share energy with community members, mostly homeowners, as they are not part of the free energy market, resulting in a lack of diverse models, such as shared energy, sales, or solutions for multifamily buildings and small settlements. Addressing these gaps is essential for unlocking the full potential of energy communities in Bulgaria.

4.2.2 Multi-family residential buildings

The model investigates the opportunity to establish energy community in multi-family residential building situated in Gabrovo.

I. Preparatory Activities

- a. Business model development and approval.
- b. Preparation of administrative documents.



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Challenges: The establishment of energy communities requires extensive preparatory work, including investments and human resources. However, the representatives of the households in the building lack capacity on the topic and technical support is required, in this case provided by TANDEMS project. In addition, the lack of smart metering and the discriminatory regulations makes a model based on energy sharing unprofitable, as the households are supposed to pay network taxes even for their own produced energy which at the end leads to higher expenses. For this specific case, it is foreseen that the municipality will purchase the electricity produced by the community even without being a member, as the much higher prices of energy for public authorities allows at least avoidance of financial losses for the citizens.

II. Fund Raising

- a. Fundraising for the installation.

Challenges: The lack of political support for promoting energy communities presented a major challenge for the TANDEMS project team – not only to assist in establishing the community but firstly to explain to the homeowners' association what an energy community is and what benefits it offers.

III. Project Implementation

- a. Establishing the community.
- b. Construction works and commissioning.
- c. First general assembly of the community.

Challenges: There is no specific legal form for energy communities in national legislation; therefore, the legal form regulated under Condominium Ownership Act is the only opportunity in this case. This complicates the model as the above-mentioned Act does not consider such kind of initiative. Furthermore, commercial banks do not recognise energy communities and do not have specialised products targeted at them.

IV. Operation and Management

- a. Monitoring and maintenance.
- b. Accounting.

Challenges: In this case, the condominium falls under the requirements of the Accounting Act, resulting in obligatory additional accounting expenses. Given the small scale of the PV plant (about 16 kWp) and the minimal income or savings it generates, this leads to unjustified additional costs for the community members.

Overall, energy sharing remains unfeasible due to the lack of network digitalization, the absence of net metering, and the need for regulatory updates. These technical and legislative barriers prevent the effective implementation of energy community models, limiting their potential benefits. Additionally, households continue to benefit from regulated and subsidized electricity prices, reducing the financial incentive to participate in such initiatives. As a result, the current market conditions make the energy community model less attractive for residential consumers. Overcoming these challenges requires policy adjustments, infrastructure



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modernization, and the introduction of financial mechanisms that encourage participation. Until these changes are implemented, the full potential of energy communities cannot be realized.

4.3 Policy recommendations

These policy recommendations are the result of:

- The findings of the models and projects cited above.
- Implemented project in Gabrovo and Burgas and developed model for energy community in multifamily residential building.
- Ongoing communication, feedback and continuous policy dialogue with local and national authorities, as well as multiple meetings and discussions with key stakeholders.

Encouraging the widespread adoption of energy communities in Bulgaria offers significant benefits, such as boosting renewable energy production, driving local economic growth, and fostering stronger community involvement. Local authorities play a crucial role in initiating pilot projects, demonstrating best practices and supporting citizens for the establishment of energy communities. These policy recommendations focus on empowering municipalities to lead the process as only well-executed and effectively communicated projects can pave the way for the broader integration of energy communities nationwide.

Legal and Regulatory Framework

- Develop a clear legal framework to support the establishment, management and operation of energy communities, ensuring that their rights and responsibilities are well defined.
- Initiate legislative changes to make smart metering mandatory for all new buildings/facilities and regulate the replacement of existing meters with smart meters.
- Prepare provisions for access to finance, technical assistance and fair market access.
- Simplify administrative procedures for setting up and registering energy communities, reducing bureaucratic obstacles.
- Establish a one-stop shop or a dedicated municipal department to address energy community-related issues.
- Provide tax incentives, subsidies or technical assistance grants to energy communities.
- Ensure policy consistency and stability to encourage long-term investments and develop a roadmap for expanding energy communities with clear goals and milestones.

Capacity Building and Community Engagement

- Development of educational programmes and training initiatives to raise awareness of citizens and potential participants about energy communities and their benefits.
- Provide technical training to local authorities and support local capacity building, including sessions on project management, financing and renewable energy technologies.
- Create a support network where municipalities that have initiated energy communities can mentor new ones, sharing best practices and lessons learned.
- Develop campaigns to raise citizen awareness of the benefits of energy communities, encouraging local support and participation.
- Facilitate partnerships between energy communities, local authorities, and businesses to leverage resources, technical expertise, and community support.

Financial Support and Market Access



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- Establish a dedicated fund to provide low-interest loans or technical assistance grants to energy community projects, which will help overcome initial investment barriers.
- Promote partnerships between energy communities, local banks and financial institutions to provide easier access to financing opportunities.
- Develop mechanisms to allow energy communities to access the grid and enter into power purchase agreements with utilities or energy traders by establishing clear guidelines and procedures.
- Guarantee fair pricing of excess generation.

Local Economic Development and Transparency

- Prioritize the use of local labour and services by energy communities to stimulate local job creation and economic growth.
- Support energy communities to form partnerships with local businesses, universities and research institutions to leverage local expertise and resources.
- Implement a system to monitor and evaluate the performance and impact of energy cooperatives, including analyses of their contribution to renewable energy production, greenhouse gas emission reduction, job creation and local economic development, and use the findings to improve policies, address potential challenges and further improve the enabling environment for energy cooperatives.

The implementation of these policy recommendations can create an enabling environment for the mass adoption of energy communities in Bulgaria, empowering them to take control of their energy sources and contribute to the country's sustainable development goals.



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5 THE NETHERLANDS

5.1 Current developments

The Netherlands has been behind in the transposition of the EU directives into national law, due to the fact that the old Electricity law of 1998 and the gas law were being fully revised and combined into one law. This process was completed in December of 2024. The new law will go into effect in January 2026.

The new Energy Law includes a definition of an energy community. Instead of choosing to create two different definitions distinguishing a CEC from a REC, it was chosen to formulate a general definition for an energy community that would be in line with the CEC definition and create additional articles that are optional for an energy community to add to its by-laws to create the definition for a REC. This approach has led to some confusion and debate as to its conformity to EU directives.

Although energy communities were not defined in the energy law before, energy communities are actually very common in the Netherlands. This is due to the common practice of cooperatives and associations in Dutch business and culture. These energy cooperatives have enjoyed a wide range of support from local, regional and national government programmes.

The new Energy Law also describes the activity of energy sharing. This activity is, however, limited to active customers that have a contract for energy sharing with the same energy supplier. Energy suppliers are not mandated to offer this type of contract to their customers. These restrictions are not in line with the EMD definition of energy sharing in which is clearly stated that energy sharing should not restrict active customers to freely choose an energy supplier. Therefore, the government has proposed an amendment to the new Energy Law in which energy sharing, with a freedom of supplier choice, is facilitated. The proposed legislation has been published for consultation and is expected to be considered by the parliament in mid-2025.

To make the energy market more accessible for energy communities, the new Energy Law exempts energy communities from the requirement of having a license to supply to household consumers under the conditions that the energy community only supplies to its own members and does not supply more electricity than it produces over the period of a year. Also, the ministry can define a maximum size for the energy community. The exact number of members has yet to be determined.

This legislation allows energy communities to be more flexible in their contract forms with less demanding overview than would otherwise be the case. Energy communities will, however, still require Energy Service Providers to facilitate all the processes and procedures necessary for energy sharing and energy supply. It is still unclear if, how, and to what benefit this legislation will be used by energy communities.

In the Netherlands there exists a net metering system for households with solar panels. Over the period of a year the energy fed back to the grid is 'offset' against the energy you take from it, including taxes. This gives PV owners a great tax advantage and financial benefit. Although



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this scheme was great for the investment of PV on residential buildings initially, the state is now missing out on substantial tax income. Also, this scheme does not incentivize own use or energy sharing, which in a country with so much solar as the Netherlands, is very necessary to keep energy prices reasonable during sunny days. The scheme will, therefore, be terminated in 2027. It is expected that this will increase the desire for households to share their access energy with other users.

5.2 TANDEMS models in the policy context

Two models were developed under the TANDEMS project to address key challenges in establishing energy communities.

5.2.1 *Energy sharing with free choice of supplier*

The BioZon pilot, where locally produced electricity is being shared with the members of the energy community, has played an exemplary role in the development of energy sharing legislation. It is to say that the practice of energy sharing as demonstrated in BioZon is codified in the Energy Law.

For the proposed amendments to the Energy Law allowing energy sharing with free choice of supplier some key challenges have been identified:

- The implementation of energy sharing with free supplier choice requires significant adjustments in the systems of grid operators and suppliers.
- Suppliers may charge for the implementation of energy sharing, which can negatively impact the business case.
- Energy sharing is not a priority for grid operators.
- A long implementation period is needed.

The proposed amendments to the Energy Law mark an essential first step toward enabling energy sharing with the freedom to choose a supplier. Addressing the identified challenges will be crucial for the effective and fair implementation of this model in the future.

5.2.2 *Citizens support for on-shore wind*

The Naaberwind pilot, which is still in the development stage, is used as a test-case to develop municipal regulation regarding local ownership. Because the organisation of an energy community and the activity of energy sharing are now defined within the law, it is possible to refer to these definitions as requisite for local ownership of large-scale development projects.

Key challenges identified:

- Starting point was unclear, thus more professional approach is required.
- Defensive attitude by the local government due to insufficient preparation and a lack of clear communication strategy.
- Unclear messages to land owners.
- Lack of transparency about local ownership definition, conditions for participation and sharing the proceeds.



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As a pilot initiative, the Naaberwind project serves as a crucial learning experience for developing municipal regulations on local ownership. Recognizing and addressing these key challenges is the first step toward ensuring the success of similar future initiatives.

5.3 Policy recommendations

These policy recommendations are the result of:

- Participation in the Dutch Renewable Energy Association (NVDE) working group, which led to the drafting of a Position Paper on energy sharing with free supplier choice to support energy communities.
- Discussions with suppliers and grid operators to develop a workable energy-sharing model.
- Bi-weekly consultations with the Ministry of KGG to integrate NVDE's Position Paper into the amendments of the Energy law.
- Ongoing involvement in working groups on data exchange agreements and other regulatory aspects in the energy sector.

Some of the following recommendations are drawn from the official paper⁸ published by NVDE, developed by the above-mentioned dedicated working group in which AGEM, represented by Justin Pagden as a project partner in the TANDEMS project, actively contributed.

Energy sharing with free choice of supplier

- Use a fixed distribution ratio: Determine shared energy volumes using a fixed distribution ratio based on actual feed-in. This ensures predictability, reduces imbalance costs, and incentivizes recipients to use shared electricity while allowing necessary balancing adjustments.
- Allow virtual feed-in: If shared energy exceeds the recipient's consumption, the excess remains with them as virtual feed-in, preserving the fixed distribution key and simplifying energy allocation.
- Integrate energy sharing into grid allocation: Shared volumes should be included in grid operator processes to improve forecasting, minimize separate settlements, and ensure pricing reflects the actual value of shared energy.

Local ownership

- Ensure that citizens receive (or can find) clear and accessible information in a timely manner about all steps and rules in the participation process.
- Explain clearly what exactly is meant by local ownership.
- Evaluate the potential for wind energy projects on public land to maximize renewable energy opportunities.
- Actively support and promote community led wind energy initiatives by recognizing the importance of land ownership and engaging with landowners early in the process.
- Effective communication with local residents to help them understand the issue and gain their acceptance of the proposed solution.
- Clarify the role of land, landowners, and land positions in the decision-making process to ensure public understanding and participation, based on preliminary analyses about land

⁸ <https://www.nvde.nl/wp-content/uploads/2024/11/NVDE-aanbevelingen-energiedelen-met-vrije-leverancierskeuze.pdf>



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ownership and existing agreements to provide early guidance to landowners on available options for wind farm development.



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CONCLUSION

This report underscores the critical role of energy communities in facilitating the transition toward a sustainable, decentralized, and citizen-driven energy system. While the EU has established a comprehensive legislative framework, the extent and effectiveness of its implementation varies across Member States, presenting both opportunities and challenges.

The findings from the TANDEMS pilot projects in Belgium, Bulgaria, and the Netherlands highlight key barriers to the widespread adoption of energy communities, including regulatory complexity, financial constraints, administrative burdens, and insufficient technical infrastructure. Despite these challenges, the pilots demonstrate that with appropriate policies, targeted financial mechanisms, and most importantly strong engagement from local authorities, energy communities can make a significant contribution to the clean energy transition.

To support their successful deployment and ensure a just energy transition by integrating social equity considerations into energy policies, preventing energy poverty, and promoting community-driven solutions that benefit all societal groups, policymakers should consider the following priorities:

- **Streamlining regulatory frameworks** to facilitate energy-sharing initiatives.
- **Ensuring fair and transparent pricing structures** while introducing financial incentives to enhance economic feasibility.
- **Investing in smart grids and digitalization** to optimize energy management and integration.
- **Strengthening capacity-building initiatives and awareness campaigns** to encourage active participation from citizens and businesses.
- **Prioritizing support for vulnerable citizens** by developing targeted financial mechanisms and inclusive policies that ensure their active participation in energy communities.

Energy communities represent a cornerstone of the future energy landscape, providing social, economic, and environmental benefits. However, their full potential can only be realized through coordinated policy support at the local, national, and EU levels. This report offers concrete policy recommendations and practical insights to accelerate the development of energy communities and promote a more inclusive, resilient, and sustainable energy system.




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List of participating organizations

	AUTONOOM PROVINCIEBEDRIJF KAMP C (Kamp C)		BE
	VLAAMSE INSTELLING VOOR TECHNOLOGISCH ONDERZOEK N.V. (VITO)		BE
	DUNEWORCS BV (Duneworks)		NL
	ACHTERHOEKS ENERGIELOKET B.V. (Agem)		NL
	STAD MECHELEN (MECHELEN)		BE
	KLIMAAN (Klimaan)		BE
	ZUIDTRANT (ZuidtrAnt)		BE
	FONDATSIYA TSENTAR ZA ENERGIYNA EFEKTIVNOST - ENEFEKT (EnEffect)		BG
	OBSHTINA BURGAS (BURGAS)		BG
	MUNICIPALITY OF GABROVO (GABROVO)		BG
	OIKOPLUS GMBH (OKP)		AT



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