



SunSharing

SUPPORTING **SOLAR ENERGY** COMMUNITIES
IN SOUTHEAST EUROPE

Lessons learned from supporting the development of citizen energy communities and crowdfunding initiatives in the countries of Southeastern Europe

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Executive summary

The SunSharing project aims to trigger the development of PV-based energy communities and crowdfunding initiatives, thus supporting the installation growth of solar PV technologies in the implementing countries. Such developments will contribute to the decarbonisation of the power sector, reaching renewable energy targets and reducing carbon dioxide emissions in the implementing countries. Consequently, this will also boost the energy security of the implementing countries by reducing dependence on fossil fuel.

This report brings forward lessons learned in Bulgaria, Croatia, Greece and North Macedonia during the implementation of the SunSharing project. The report synthesizes potential solutions for energy community development and development of crowdfunding initiatives aimed at supporting PV-based projects.

The recommendations are made in order to support replication of good practice examples and moulding of the national policies concerning energy communities in the eco-system that would be supportive of such citizen associations and crowdfunding initiatives. SunSharing project presented best practice examples and guidebooks for supporting energy communities, [available from the project website](#) in all languages of the project implementation.



Building a sustainable future with energy communities

As the world moves toward a renewable future, the concept of energy communities has become a powerful tool for local empowerment, energy independence, and environmental sustainability. But what are they? Energy communities promote sustainable, democratic, and locally produced energy, which encourages active participation of citizens on a local level. Citizen energy communities (CEC) provide opportunities for local employment, helping the local economy but also reducing greenhouse gas emissions along the way. They are citizen initiatives developed in response to the need for more sustainable and decentralized energy systems. Their main purpose is to enable citizens, local communities, organizations, and others to produce, consume, and share renewable energy.



1. Bulgaria

LESSON LEARNED: Use Municipalities and NGOs as the leading drivers in energy community initiatives - Gabrovo's innovative public-private partnership

Gabrovo, Bulgaria, provides an inspiring example of leveraging public-private partnerships for renewable energy. In 2023, the municipality, along with a local NGO initiated a crowdfunding campaign to finance a 99.55 kW solar installation at a regional landfill.

The campaign attracted 73 investors, primarily local citizens and small businesses, emphasizing the importance of community engagement. Gabrovo's local government played a pivotal role in mobilizing support, demonstrating the value of using municipal platforms to promote renewable energy projects.

SMEs generally lack the incentives to initiate such projects, seeing as their execution takes very long, thus becoming unproportional to the expected financial result. This is why strategic partnerships with NGOs/non-profit organizations such as EnEffect further boosted the project's visibility, showcasing how collaborations can amplify the impact of energy initiatives. By ensuring transparency and fostering a sense of collective ownership, Gabrovo has set a benchmark for other municipalities aiming to embrace renewable energy.

Financial incentives and accessibility

Tailored financial mechanisms, such as subsidies, tax incentives, and crowdfunding platforms, are vital for engaging citizens and small businesses. Bulgaria's Gabrovo project demonstrates the effectiveness of localized crowdfunding, while ZEZ Sun highlights the need for structured financial roadmaps.

Social inclusion and community engagement

Energy communities thrive when they address local needs and foster inclusivity. Gabrovo's focus on local investors and Eneffect's continuous support illustrate how social impact can drive participation.

LESSON LEARNED: Introduction of criteria for the creation of an EC in energy renovation programs for multi-family residential buildings

One of the more prominent issues faced when trying to establish an energy community within residential buildings is getting the condominium on the same page. Especially in older buildings, where the type of residents varies widely – from young families to older residents and single households – the priorities and financial capabilities can be incompatible. Since any kind of installation on the communal spaces of the building require the permission of everyone, this becomes one of the steps where many energy companies fail before they've even begun. This is where the procedure of energy renovation programs for multi-family residential buildings becomes a golden opportunity – the condominium has already come together and agreed on an energy-related matter and they're ready to invest in the energy efficiency of their homes. The energy renovation programs for multi-family residential buildings in the country are related predominantly to the installation of thermal insulation on the external enclosing structures rarely to other types of energy saving measures. At the same time, it has been proven that this type of measures contributes mainly to increasing the thermal comfort in the building and to a very small extent to a real reduction in heating bills. One suitable option for the real reduction of bills are building-integrated photovoltaic power plants, as the roof areas of multi-family residential buildings represent a great opportunity for the implementation of such types of installations.

In this aspect, the promotion of the construction and implementation of PV power plants, in the form of energy communities during the implementation of the energy renovation programs for multi-family residential buildings can be achieved, for example, by increasing the grant element, if the Association manages to join forces to create an energy community

LESSON LEARNED: Introduction of requirements in the law on territorial planning for the construction of new buildings to include the implementation of pre-defined energy communities

There are now various examples in Bulgaria where new building complexes include in their planning stage the installation of photovoltaics on the rooftops of the buildings. This way residents become part of an unofficial energy community just by buying their property in the building – the electricity produced is usually only used for the common spaces such as lighting, the elevators, etc., however, with better planning and larger installations it can also be distributed to the apartments so that the residents can take better advantage of the electricity produced, reduce their bills and most importantly use green energy, contributing to the energy transition.

Buildings subject to new construction must meet the definition of a building with close to zero energy consumption, and soon to be buildings with zero emissions. Undoubtedly, the high requirements define the requirement that the building envelope structures – roofs and facades, be implemented with photovoltaic panels. This type of construction inevitably leads to the creation of an energy community, namely a community between the owners of the individual properties in the building.

This process should be actively supported and facilitated through comprehensive legislation that provides clear guidelines and incentives for establishing energy communities. In addition to offering legal and regulatory frameworks, governments and policymakers could actively encourage and prioritize the development of these initiatives by making the creation of energy communities a mandatory requirement.

2. Croatia

During the SunSharing project, various initiatives worked on establishing CEC, through which three CEC emerged and were registered in 2024: My Energy Community, DVD Spickovina and The Energy Community of Northern Adriatic. The engagement of those communities, acting together with the Forum of energy communities in Croatia, continues in order to help the Government in formulating a supporting and enabling legal framework for energy communities in Croatia.

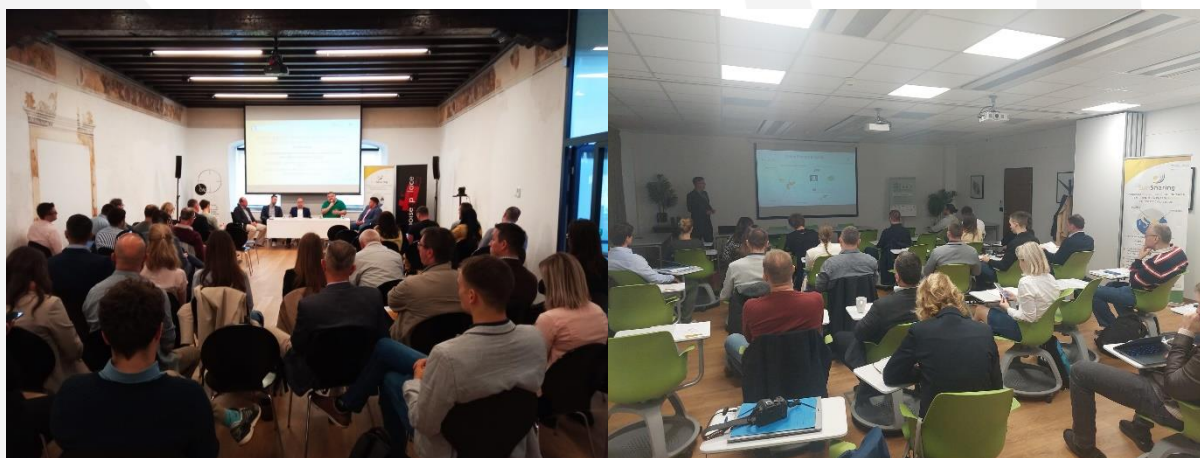


Figure 1 Conference on the topic of energy communities in Croatia in 2023 and a workshop for local governments in 2024

LESSON LEARNED: Form an umbrella organization to support the energy communities

Umbrella organizations like REScoop.eu and the Energy Communities Forum ¹in Croatia play a pivotal role in supporting citizen energy communities. REScoop.eu, the European federation of energy cooperatives, represents over 2,500 energy communities across Europe, involving 2 million citizens in the energy transition. It emphasizes democratic member control and community focus, aligning with cooperative principles. In Croatia, the Energy Communities Forum, initiated by the Green Energy Cooperative (ZEZ), serves as a national network fostering

¹ <https://www.zez.coop/forum-energetskih-zajednica/>

energy communities to empower citizens with direct ownership and decision-making in energy production. These organizations provide platforms for sharing best practices, resources, and knowledge, simplifying the establishment and operation of energy communities.

A significant advantage of umbrella organizations is their ability to engage decision-makers more effectively. By acting as collective representatives of multiple energy communities, they gain greater visibility and credibility with policymakers and stakeholders. This collective strength enables them to advocate for legislative changes that favor community energy projects, such as simplified permitting processes, better access to funding, and incentives for renewable energy initiatives. Their unified voice ensures that the needs and challenges of citizen energy communities are consistently represented in discussions on energy policy and regulation.

Additionally, these organizations help build strong partnerships with local authorities, businesses, and other stakeholders, fostering a collaborative approach to the energy transition. Their role extends beyond advocacy, offering technical assistance, financial guidance, and educational resources to reduce the complexities and risks associated with such initiatives. By creating a robust support network and driving policy changes, umbrella organizations like REScoop.eu and the Energy Communities Forum empower citizens to actively participate in the energy transition, promoting sustainability, local development, and equitable access to renewable energy benefits.

LESSON LEARNED: Legal frameworks and simplified processes

A recurring barrier across these countries is the lack of comprehensive legal frameworks to support energy communities. Clear regulations that define their scope and simplify administrative procedures are crucial. Although this is the case for all countries, special case

in Croatia can refer to significant barriers arising from the current legislative framework:

Simplifying the Registration Process for Energy Communities

The process of obtaining a license for energy activities to gain recognition as an energy community is overly complex and financially burdensome for most citizen initiatives.

A simplified approach based on minimal criteria is proposed, allowing energy communities to apply for registration in the Energy Communities Registry without requiring a license. Additional licenses would only be needed when communities engage in complex activities like energy market services.

Post-establishment control would focus on essential criteria, such as being based in Croatia, adhering to open membership and the principle of "one member – one vote," and prioritizing local community benefits over profit-making. Activities could include renewable energy production, consumption, storage, and related services.

Flexibility in Ownership and Membership Rules

Current restrictions on ownership within energy communities hinder participation by key stakeholders, such as municipalities and public institutions. Adjustments are recommended to enable broader participation while limiting decision-making rights for related entities to prevent corporate dominance. This would allow essential contributors like municipalities to provide resources without compromising the community's governance principles.

Expanding Legal Frameworks for Energy Communities

The requirement for energy communities to operate under non-profit financial laws restricts their flexibility and scope. Removing this requirement or allowing other legal forms, such as cooperatives or limited liability companies, would enable communities to develop diverse business models, participate in energy markets, and distribute

surplus revenue transparently. This change would also attract a wider range of participants, including businesses and municipalities.

Removing Administrative Barriers

The current requirement for cooperatives and other entities to register specific energy-related activities in the business register, which courts often reject, is a significant barrier. Simplifying this process by recognizing energy communities based on minimal criteria, without requiring licenses or specific business activity registration, would reduce bureaucratic obstacles and accelerate the establishment and development of energy communities.

LESSON LEARNED: Establishment of an Information Center for Energy Communities

Provisions related to energy communities should be clearly defined and aligned with relevant laws and subordinate regulations (bylaws), including official interpretations of unclear provisions to eliminate ambiguity and facilitate their practical application. It is proposed to establish an information center for energy communities that would provide expert support and enable easier access to accurate and up-to-date information.

The center would offer:

- reliable and current information on energy policies and regulations,
- interpretations of legal provisions to facilitate practical application,
- step-by-step guides with examples of documentation for energy communities,
- professional support and practical advice for all interested stakeholders.

This center would encourage coordination and collaboration among citizens, small businesses, experts, regulators, and government bodies. By doing so, it would accelerate the establishment of energy communities, increase trust and interest in renewable energy projects, and lay the foundation for broader community involvement.

3. Greece

During the SunSharing project, various initiatives supported the development of Energy Communities (ECs) in Greece, culminating in the organization of two roundtables with stakeholders. The first roundtable (Figure 2) was held on the sidelines of the 1st conference of the Energy Communities' Coalition (DESMI). DESMI is a national representative body for participatory citizen energy schemes, built on core values of democracy, inclusion, sustainability, and justice. The scope of DESMI is to provide unified representation for ECs in Greece. Currently, 20 ECs participate in DESMI, collectively implementing energy projects with a total nominal capacity exceeding 7.5 MWp. The 1st DESMI conference took place in Athens on 21 October 2024, where citizens, local authorities, and NGOs participated to discuss issues concerning ECs in Greece.

The second roundtable (Figure 3) was organized at the Ministry of Environment and Energy in Greece with national authorities on 14 November 2024. Specifically, representatives of the Hellenic Electricity Distribution Network Operator (HEDNO), the Regulatory Authority for Energy, Waste and Water (RAAEY), local authorities of Kozani, and the Ministry of Environment and Energy participated in the meeting to discuss various issues concerning ECs in Greece. Initiatives organized in the context of the SunSharing project gathered the concerns of ECs, and the roundtable with national authorities provided an opportunity to evaluate these concerns and analyze potential legislative changes, aiming to further boost the implementation of local solar PV-based initiatives.



Figure 2 1st DESMI conference for ECs in Greece in 2024 and a roundtable with EC members and stakeholders on the sidelines of the conference.



Figure 3 A roundtable with national authorities at the Ministry of Environment and Energy in Greece in 2024.

LESSON LEARNED: Increasing self-consumption of ECs to mitigate concerns about the lack of electrical capacity.

The grid's limited capacity to accommodate new PV projects is a significant barrier to the growth of renewable energy projects. Although the grid's capacity in Greece is constrained for integrating new projects, the key point is to establish policies that prioritize grid access for small-scale PV projects operating under a framework that promotes self-consumption. This

approach will not only reduce grid congestion, but will also support the decentralization of energy systems, which is crucial for a sustainable energy transition. By prioritizing grid access for smaller, community-based PV systems, these policies encourage fair participation for citizens in the energy market and align with European directives. Coupling these efforts with policies that incentivize self-consumption further promotes efficient use of locally generated PV energy to meet immediate needs, reduces grid congestion, and addresses the critical issue of limited electrical capacity for new PV installations by enabling ECs to invest in these projects.

LESSON LEARNED: Concerns about legislative updates

Aligning with European directives to promote energy self-consumption and balance production and consumption, the Net-Billing policy has been established as the primary energy framework for RES projects in Greece. However, the key considerations of its implementation are as following:

- **Educational initiatives to communicate the transition to Net-Billing:**

The transition to Net-Billing as the primary energy policy has raised concerns about the economic viability of new projects, particularly for smaller ECs unfamiliar with market dynamics. In order to communicate the benefits provided by the Net-billing policy, workshops and resources to educate ECs on the Net-Billing policy should be organized and developed, emphasizing how to maximize their profitability. In this way, ECs could be well-informed about the opportunities the new policy offers to leverage the opportunities given by the new policy. A critical component of this effort could be the establishment of a "one-stop shop" platform to serve as a centralized hub for training, guidance, and administrative support. This platform would provide ECs with easy access to workshops, training programs, and resources, enabling

them to understand the Net-Billing framework and its long-term advantages.

- **Transitional incentives to bridge the gap between Net-Metering and Net-Billing policy:**

The previous primary energy policy was Net-Metering, which allowed consumers to utilize the energy produced by their PV system to cover their energy consumption without requiring to modify their consumption power profile to align with the production power. To this end, transitional incentives could be offered, such as grants or subsidies, to bridge the gap between the former Net-Metering and the newer Net-Billing policy, thus potentially playing a critical role in creating a more attractive model for adopting PV projects under the Net-Billing policy. These incentives could provide ECs with the necessary financial resources to realign their activities, invest in required technologies or infrastructure, and enhance their operational flexibility to further leverage the benefits of the new energy policy.

LESSON LEARNED: Financial feasibility of PV projects

The high installation costs for investing in PV systems and the uncertainties in production and consumption power hinder the assessment of the financial feasibility of RES projects for ECs. A key challenge in transitioning to the Net-Billing model is the lack of smart meters, which makes difficult to predict the expected daily production and consumption power profiles over a multi-year analysis to assess the financial feasibility of the investment. To address this issue, the installation of smart meters in residential and commercial buildings is required, and, their deployment has already begun². Additionally, in order to facilitate and mitigate the risk of

²<https://www.eib.org/en/projects/pipelines/all/20220823>

impacting financial viability of the investments, the crowdfunding initiatives could be supported by the Greek legislative and regulatory framework enabling ECs to raise funds from community members and external investors. Finally, as already stated transitional incentives could be offered, such as grants or subsidies, to bridge the gap between the older Net-Metering system and the newer Net-Billing model.

LESSON LEARNED: The role of storage systems

Energy storage systems can balance the energy produced by a PV system and consumed within the EC. This approach improves the EC's self-consumption and self-sufficiency, contributing to enhance the grid stability by reducing the energy transactions between the EC and the grid. Consequently, it could facilitate PV penetration despite the lack of electrical space in the grid. To further examine that, Figures 1a and b present the self-consumption (SCR) and self-sufficiency ratio (SSR), respectively, achieved by installing different PV-storage sizes in an EC. The examined EC is assumed to be in Western Macedonia and consists of 10 residential consumers. Their consumption and production data collected by meters in the University of Western Macedonia's living lab named SMART LL³.

As illustrated in Figures 4a and 4b, storage systems enhance the SCR and SSR of an EC. Specifically, the greater the size of the storage system installed, the greater the levels of SCR and SSR it provides. In this way, the installation of high storage systems could enhance the grid stability and mitigate the lack of electrical space by reducing the energy transaction with the grid and provide financial benefits in ECs by decreasing the energy purchased for the grid

³<https://livinglab.ece.uowm.gr/about/>

and therefore reducing the electricity cost. However, the high investment costs for installing a storage system is a critical factor to the profitability of a PV-storage system investment. To explore this, Figure 4 presents the Net Present Value (NPV) provided by installing various PV-storage system sizes in the EC considering the storage system's installation cost ranging from 200 - 500 €/kWh. The techno-economic inputs of determining the NPV are described in Table 1.

Table 1: Input Parameters

Input parameter	Value	Input parameter	Value
PV degradation	0.2% ⁴	Production charge [€/kWh]	0.16 €/kWh
Inverter efficiency	95% ⁴	Networks charge	0.027 €/kWh ⁵
O&M cost	2% ⁴	Energy Taxes	0.017 €/kWh ⁵
Discounted rate	4% ⁴	VAT	6 % ⁵
Inflation rate	2% ⁴	PV installation cost	1000 €/kWp ⁴

⁴N. S. Kelepouris, *et al*, "Cost-Effective Hybrid PV-Battery Systems in Buildings Under Demand Side Management Application," in *IEEE Transactions on Industry Applications*, vol. 58, no. 5, pp. 6519-6528, Sept.-Oct. 2022, doi: 10.1109/TIA.2022.3186295

⁵A. I. Nousdilis, *et al*, "Profitability of Building Integrated PVs Enhanced by Storage and Load Management," 2023 *EEEIC / I&CPS Europe*, Madrid, Spain, 2023, pp. 1-6, doi: 10.1109/EEEIC/ICPSEurope57605.2023.10194609



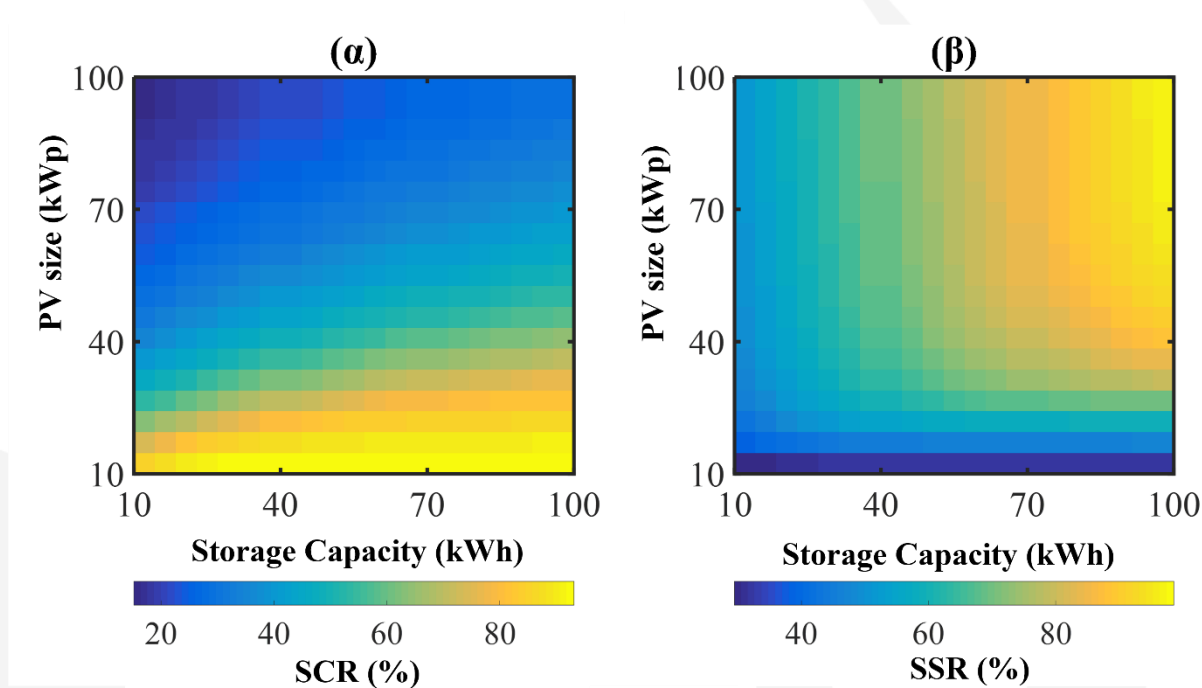


Figure 4 Impact of PV-storage size on EC's (a) SCR and (b) SSR.

As illustrated in Figure 5, the integration of storage systems contributes to further utilizing PV production, thus potentially increasing the NPV of such investments. However, the installation cost of storage systems significantly impacts the profitability and financial feasibility of PV-storage investments. Specifically, when the storage investment cost is 200 €/kWh (Figure 4a), the most profitable investment is installing a PV system of 35 kWp with storage of 85 kWh, providing an SCR of 70% and an SSR of 84% for the EC. At a storage investment cost of 350 €/kWh (Figure 4b), the most profitable investment is installing a PV system of 25 kWp with storage of 35 kWh, resulting in an SCR of 72% and an SSR of 62%. Finally, when the storage investment cost is 500 €/kWh (Figure 4c), the most profitable investment is a PV system of 20 kWp with storage of 10 kWh, achieving an SCR of 69% and an SSR of 48%. As a result, reducing the investment cost of storage allows for the installation of larger storage capacities, facilitating PV production management, providing additional financial benefits for EC members, and decreasing energy transactions between the EC and the grid. Recognizing this

issue, a subsidy to mitigate the investment cost of integrating storage systems could enable ECs to install larger PV systems, reduce grid dependency, and contribute to addressing concerns about the lack of electrical capacity.

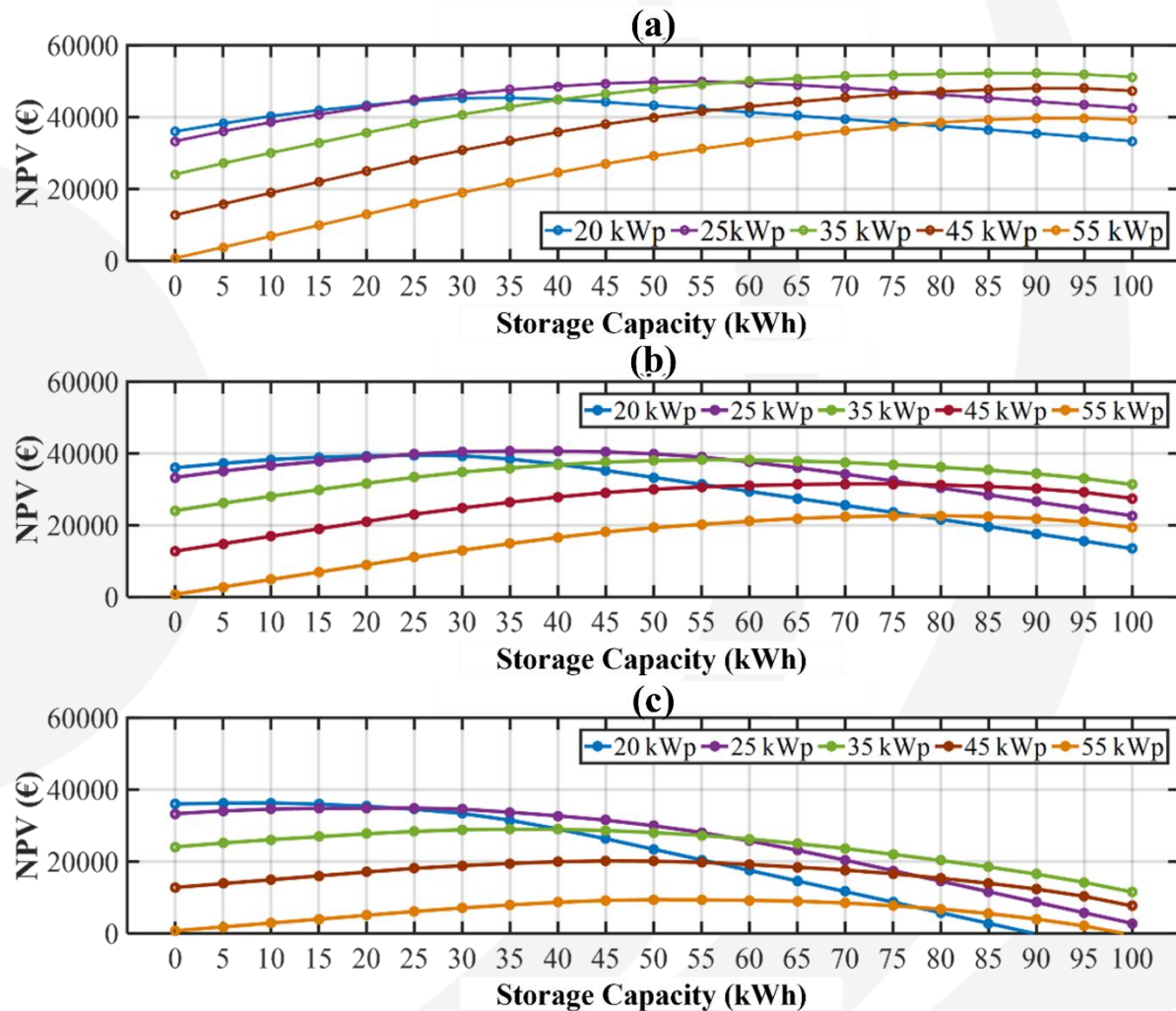


Figure 5 The NPV of PV-storage systems is evaluated with zero compensation for power injection into the grid, considering the storage system's installation cost of: (a) 200 €/kWh, (b) 350 €/kWh, and (c) 500 €/kWh.

LESSON LEARNED: Addressing the energy poverty

ECs could participate in additional services proving a social impact by addressing energy poverty. Specifically, by pooling resources and enabling collective action, ECs reduce energy costs, empower vulnerable households, and reinvest profits into community projects like

energy efficiency upgrades. To mitigate energy poverty, targeted subsidies, the distribution of a portion of the energy produced by ECs' PV projects, and public-private collaborations can support the inclusion of energy-poor households.

LESSON LEARNED: Demand-side management and flexibility services

The establishment of the Net-Billing policy could motivate prosumers to shift their loads, increasing self-consumption and self-sufficiency, and consequently benefiting from further reductions in electricity costs. By encouraging prosumers to align their energy consumption with PV production, the policy promotes more efficient energy use within households and ECs. This represents the first step toward establishing demand-side management (DSM) models and modifying consumption profiles to balance energy consumption with PV production.

In this way, the DSM models not only reduce grid dependency and provide financial benefits to the prosumers, but also enhance grid stability by balancing energy production and consumption. Additionally, familiarizing prosumers with load-shifting incentives and concepts would further facilitate the integration of DSM into EC operations. This integration enables ECs to provide flexibility services, such as increasing collective self-sufficiency or offering ancillary services that enhance network operation. This could potentially contribute to expanding the concept of ECs into creating microgrids, capable of providing additional services to the community and the upstream grid.

4. North Macedonia

North Macedonia: CDI Macedonia is showing the way

Despite legislative hurdles, North Macedonia has seen pioneering efforts in energy community development, led by CDI Macedonia in the municipality of Brvenica. Formed in 2023., this association installed a 12 kW rooftop PV system for self-consumption under a net-metering scheme.

Although the community cannot be formally registered due to the lack of legislation, CDI Macedonia has laid the groundwork for future initiatives by creating a network of energy communities. This network facilitates knowledge sharing and supports the democratization of energy production.

Key recommendations from CDI Macedonia include establishing a robust legal framework to define energy communities and simplify their registration. Additionally, fostering inclusivity through tailored co-investment schemes for underserved groups and promoting regional cooperation could accelerate the adoption of renewable energy across the country.

Knowledge sharing and regional cooperation

Sharing best practices and fostering collaboration across borders can accelerate the growth of energy communities. CDI Macedonia's network model offers a blueprint for regional cooperation, promoting peer learning and joint advocacy.

LESSON LEARNED: Establish a Comprehensive Legal Framework for Energy Communities

The lack of legal recognition for energy communities in North Macedonia remains a key barrier. While energy cooperatives are mentioned under the Law on Cooperatives, their role is limited, and there are no clear legal distinctions or criteria specific to energy communities. A robust legal framework should clearly define the types of energy communities, their eligible activities, and the rights and obligations of members. This should include distinctions between cooperatives, associations, and other potential organizational forms. The new legal framework must harmonize with laws on cooperatives, housing, agriculture, and land use to avoid conflicting regulations. A coordinated approach can prevent regulatory gaps or overlaps that could hinder energy community development.

Given the current lack of rules on registration, it is important to establish a clear and accessible process for officially recognizing energy communities as distinct legal entities. Simplified administrative procedures would encourage participation and reduce bureaucratic delays. CDI Macedonia's experience demonstrates the urgency of this recommendation, as the inability to formally register the community limits its capacity to engage in energy projects and participate in broader energy transition efforts. Furthermore, the legal framework should align with other regulations, such as the Law on Housing, to ensure that building owner communities can jointly invest in on-site electricity and heat generation for both shared and individual needs.

The legal framework must also establish clear rights and obligations for all entities involved in energy communities, including suppliers, distribution system operators, and community members. Mechanisms for monitoring and controlling energy community activities are essential to ensure compliance and effective governance.

LESSON LEARNED: Develop One-Stop Shops and Provide Targeted Administrative Support

Many citizens are hesitant to engage in energy projects due to a lack of understanding and uncertainty regarding financial returns. CDI Macedonia's efforts to support various organizations revealed that even with co-financing available, some organizations are reluctant to co-invest, mostly due to the complexity of the process and insufficient knowledge about the long-term benefits of investing in renewable energy.

Centralized platforms, or "one-stop shops," can provide guidance on regulatory procedures, financial mechanisms, and technical requirements. These platforms should offer comprehensive assistance to help communities start and manage energy projects. Municipalities can play a critical role by offering administrative and logistical support, especially in the early development phases of energy communities. Incentives should be established to enable local authorities and NGOs to partner and raise awareness about the benefits of energy communities. Disseminating clear and concrete examples of best practices is key to improving public understanding of the financial and social returns of collective investments in energy projects.

Flexibility in funding mechanisms is also vital. National subsidies, grants, and tailored co-investment schemes—accompanied by clear financial roadmaps and risk assessments—can build confidence among prospective participants. Additionally, tax exemptions and fiscal support mechanisms (e.g., reduced grid tariffs, VAT exemptions, and communal tax reductions) should be implemented to ease the financial burden on energy communities. Private sector involvement can be encouraged through tax incentives for companies that contribute to energy community projects.

LESSON LEARNED: Foster Inclusion of Underserved Communities

Energy communities have the potential to reduce energy poverty and empower underserved groups, such as low-income households, farmers, and rural communities. CDI Macedonia's Network of energy community initiatives has highlighted this potential, emphasizing the importance of ensuring wider participation. Provisions should be incorporated into energy community legislation to promote the inclusion of marginalized and energy-poor groups, such as through targeted subsidy programs or preferential loans.

Tailored co-investment schemes can enable low-income households to participate in energy projects with minimal upfront costs, ensuring they benefit from long-term energy savings and increased energy security. Municipalities, NGOs, and SMEs should prioritize initiatives that focus on underserved areas and energy-poor households. Cooperation among these stakeholders is critical to driving an inclusive energy transition.

LESSON LEARNED: Promote Knowledge Sharing and Regional Cooperation

CDI Macedonia's efforts to form a Network of energy community initiatives demonstrate the value of peer-to-peer knowledge transfer. This model could be scaled to fast-track the establishment and operationalization of energy communities across the region. Expanding this initiative into a formalized network would facilitate knowledge sharing, peer learning, and joint advocacy efforts. Such a network could also serve as a platform for exchanging best practices, providing a resource hub for emerging energy communities.

Public-private partnerships should be encouraged to support the formation and growth of energy communities, offering both technical and financial assistance. Municipalities and SMEs can play a pivotal role as drivers of local energy initiatives, with targeted support for pilot projects to test innovative business models. Additionally, technical training for stakeholders,

particularly in the management and maintenance of renewable energy systems like rooftop photovoltaics, is essential for ensuring long-term sustainability.

Clear communication of the benefits of collective actions, along with access to free feasibility studies and resource centres, can encourage broader participation. By learning from CDI Macedonia's early efforts, policymakers can build a resilient and inclusive framework that empowers local communities, promotes sustainable energy solutions, and accelerates the energy transition in North Macedonia.

LESSON LEARNED: Stimulate Economic Development and Job Creation

Energy communities should be leveraged as vehicles for local economic development. Policies should prioritize energy efficiency before investments in renewable energy for self-consumption, ensuring a cost-effective and sustainable approach. Support centres, modelled after successful initiatives like the ZEZ Cooperative, can improve the sustainability and profitability of energy projects.

Mapping potential projects at the municipal level and implementing pilot initiatives will help identify viable business models and promote scalability. Additionally, creating jobs within energy communities—through technical, administrative, and operational roles—can further stimulate local economies and strengthen the energy transition's social impact.

By addressing these strategic recommendations, North Macedonia can create a robust foundation for scaling energy communities, fostering inclusivity, and driving sustainable energy development with the support of public and private stakeholders.

5. Vision for the greener future

Through the experience of the SunSharing project, several most relevant lessons have been distilled from discussions with hundreds of stakeholders from the local level, local governments and national level stakeholders, By addressing **legislative gaps** and producing adequate legal framework for establishment and operation of ECs, enhancing **financial accessibility** (which includes elimination of financial burdens during the establishment and operation that are purely of an administrative nature), and **fostering social inclusion** (which can be led also by the local government units that include citizens in danger of energy poverty in ECs), countries in Southern Europe can harness the power of renewable energy to build resilient and empowered communities. This journey is not without its challenges, but the examples set by Greece, North Macedonia, Croatia, and Bulgaria offer a roadmap for success. As these nations continue to innovate and collaborate, they pave the way for a greener and more equitable energy future.