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SunSharing

SunSharing- Supporting Solar Energy Communities in SEE

Report on the state of play regarding solar PV energy communities and crowdfunding initiatives in Bulgaria

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1. Executive Summary

This report is written under the SunSharing project, financed by the European Climate Initiative (EUKI). It aims to evaluate the circumstances surrounding Energy communities and Crowdfunding initiatives, by defining key issues and opportunities in the partner countries – Bulgaria, Croatia, Greece, and North Macedonia.

In this document the focus is on the Bulgarian experience, while the other countries have their own separate reports and can be found on the SunSharing projects website.

Key issues in the sector to be addressed by the SunSharing project

There is high potential for rooftop solar energy penetration, especially on the roofs of beneficiaries such as the residential buildings, schools, public utilities and municipal buildings owners, however as a result of the lack of experience, awareness and proper legislation, both citizens (investors) and owners/operators of buildings, holding enough space for PVs penetration, are missing out on economic, social and environmental benefits.

The main issues that need to be tackled remain the lack of proper legislation on creating and running energy communities and crowdfunding. In Bulgaria, specifically, there is no legislation on energy communities, since so far, there is no transposition of the Directive 2018/2001/EU on the promotion of the use of energy from renewable sources, as well as Energy communities".

Energy communities (EC) and more specifically citizen-based EC are seen as an important instrument for the penetration of more renewable power at local level, alleviation of energy poverty and vulnerability in general. However, in Bulgaria there are still no viable practices in forming and operating such communities. One of the main reasons for this is the lack of legislation, incentives and the first good practices to pave the road towards more facilitated penetration of such systems. In this regard, governance models on citizen-based energy communities are urgently needed, where all non-technical (administrative, legislative and other) issues are tackled.

Another issue is the lack of enough communication between investors (citizens), potential beneficiaries (residential buildings, schools, municipalities, public utilities) and policymakers.

Embedding the project in the target country's climate policy framework

The transposition of Directive 2018/2001/EU is belated and there is no draft legislation on energy communities. The development of a regulatory framework that creates incentives for consumers is seen as a major step in the Integrated Plan in the Area of Energy and Climate.

In order to increase the flexibility of the energy system through energy demand response, Bulgaria is still in planning phase to enact proper legislation, so as to establish conditions that promote active consumer behaviour, opportunities for associations through aggregators or energy communities and their active participation in demand response in the different market segments.

To achieve the national RES targets set, PV installed capacity needs to be tripled. To do so energy community formation should be promoted.

Citizens' inclusion in the energy transition process has to be further encouraged, as part of the Municipal`s strategies to increase energy efficiency and RES installed. This is also seen as an essential step for the country's cost-effective development of renewable energy. Such new cooperation models – energy communities – could be of high benefit for the local authorities as they increase the share of RE, but also tackle energy poverty, which is a widespread issue in Bulgaria, among other Balkan countries.

2. General overview of the adoption of legislative framework for energy communities

Traditionally, the Bulgarian Energy sector has for the longest relied on fossil fuels and Thermal power plants. Even though there is an ongoing shift in the structure of the energy sector, the focus of Bulgaria's national energy policy still relies heavily on large and expensive energy projects, focusing on nuclear and gas power plants, accompanied by some recent growth in the interest towards renewable energy, specifically solar power, in the form of large-scale PV plants. Because of this, there is a looming threat for the country's energy infrastructure to be left obsolete and increasingly uncompetitive.

There is a growing need for strategies that can assist the development of the energy sector by diversifying the energy sources used and introducing new, smaller players into the market. **Both can be implemented through the introduction and popularization of Energy Communities.**

The European Commission has already introduced a directive on the topic of Energy communities, however, despite the final deadline for EU countries to incorporate the Directive (EU) 2018/2001 into their legislation having passed already, the Bulgarian government has not yet adopted the definitions of Energy Communities into its legislation, due to which the EC has started an infringement procedure, which may end up in court[1]. There is a current discussion on the topic withing the relevant government branches, however up to the date of this report, there is no concrete plan on how to incorporate it.

Not only is there a lack of legislation, we must also note the lack of institutional support from the Bulgarian authorities. Currently, there are no single portals and information campaigns on how citizens can build their energy facilities. There is no concept on how to implement the RED II requirements to service such projects within one stop shops, for instance. Setting up photovoltaic panels for personal use is a complicated and slow process, especially if we plan to feed excess power to the grid, that most citizens find too challenging to even attempt. The procedures are too intricate and there is no easy access to information for them, and on top of that most PV installation companies are unwilling to take on small-scale projects due to their low margin of profit. **Thus, there is strong need for aggregated projects, such based on citizen communities.**

On the other hand, there are also individual consumers living in large urbanized areas willing to invest in PVs for self-consumption, who find difficulties in installing their own installation, due to the condominium law and the fact that the roof is a common space, requiring permission from all neighbors. It has to be clearly noted that currently legislation and practises are open only for individual

[1] https://ec.europa.eu/commission/presscorner/detail/en/ip_23_163

consumers to become prosumers, while no community incentives are available. These struggles are also a factor in the formation of **decentralized citizen communities.**

The EU definition of Energy communities divides them into two types: Citizen Energy Communities and Renewable Energy Communities (CEC and REC). Both are used to engage citizens in the energy production, however, they differentiate in certain aspects[2]:

	Citizen Energy Communities	Renewable Energy Communities
Members	Individuals, local authorities, including municipalities or small and micro enterprises	Natural persons, local authorities, including municipalities or small and micro-enterprises, provided that the membership of private enterprises does not constitute their main commercial or professional activity
Geographical Limitations	There are no geographical restrictions; Member States may also allow the creation of international civil energy communities	Shareholders or members must be located near the renewable energy projects that are owned and developed by the renewable energy community.
Permitted activities	Activities only in the electricity sector. Electricity generation, distribution and supply, consumption, aggregation, storage or energy efficiency services, renewable energy generation, electric vehicle charging services or provision of other energy services to shareholders or members	They can be active in all energy sectors: production, consumption and sale of energy from renewable sources
Technologies	Technologically neutral	Limited to renewable energy technologies

When it comes to incorporating an Energy community in Bulgaria, citizens have available several different options. We can divide them into two types – "bottom up" and "top-down"[3].

- Bottom-up:
    - Cooperative – a legal entity with the explicit purpose of bringing benefits to its members. A key characteristic is that each member gets one equal vote, regardless of how much they've invested, making everyone equal in the decision-making processes.
    - Partnership – here, contrary to the cooperative, votes are proportional to the individual capital contribution of the members. The profit can either be reinvested into

[2] Legal analysis of renewable energy communities and the possibilities for their development in Bulgaria, Green Peace, Raya Maneva, 2020

[3] https://www.e3analytics.eu/wp-content/uploads/2021/06/E3A_Bulgaria_Analysis_of_Energy_Communities_EN_FINAL.pdf

the company or distributed between the members, depending on the internal decision.

- Trusts, Foundations, NPOs – usually established for the purpose of public benefit, not profit. These organizations can use projects' profits to benefit the entire community even when there are community representatives who cannot afford to participate.

- Top-down:
  - Community choice aggregators – with this form of an EC, local municipalities aggregate the demand for electricity among residents and seek offers from utility providers or system/plant builders to procure electricity for all participating customers in the area through direct producer contracts.
  - Public enterprise for utility services – Utility provider companies, property of the municipalities, that use the company to execute this activity on behalf of the citizens. Not as common as the previous forms of legal entities
  - Public-private partnerships (PPP) with local partners – Municipalities and other local governments may decide to enter into public-private partnership contracts with civic groups/local SMEs in order to provide (cheaper) electricity and other benefits to a given community

3. Overview of the existing energy communities or cooperatives *(in case no communities are recognized)*

Energy Communities in the true sense of the concept do not exist in Bulgaria. However, there are some examples of cumulative entities that resemble the intent of ECs. One of the first in Bulgaria being a residential building in Sofia – the owners of the 117 apartments gathered funds to build a solar panel installation on the rooftop. It was done via the condominium, and the electricity produced is sold in its entirety, generating revenue, used for the building's maintenance. No-self consumption mode is available at this practice. What it has in common with a regular EC is the communal agenda and the collective effort to produce clean energy, however, it cannot be classified as a classic EC, since none of the electricity from the installation is directly used to satisfy the members' needs.

Another example is in the municipality of Burgas, where as a starting point, in 2019, as part of an energy efficiency renovation of the municipal building, solar panels were installed on the rooftop with 30 kWp capacity. The whole project cost EUR 1,16 mln., 35% of which was funded by the municipality and 65% - by the European Fund for Regional Development (EFRD). After the successful completion of this project, also co-funded by the EFRD followed 5 community kindergartens, as well as some residential buildings. The Municipality of Burgas stated that one of the main issues faced by the potential residential EC is that in order to establish an installation on a rooftop, one needs permission by all residents of the building, and due to cultural scepticism and overall lack of information, people are unwilling to trust unfamiliar concepts and refuse to grant such permissions.

As an example, for a solar energy community, established in the stage of planning of a building, there is a construction company in Plovdiv – "Modar Suits and Retail", which represents a state-of-the-art building complex designed to be energy-efficient, eco-friendly, and technologically advanced. The centrepiece of the complex is its rooftop solar panel installation, producing free energy for the building's common areas, such as elevators, lighting systems, security cameras, hydrophore system, and others. In addition, they have integrated a number of charging stations for electric vehicles, that

allow residents to charge their cars with the electricity produced from the photovoltaic installation. The building complex serves as a compelling example for what future projects of this calibre can look like and how Energy communities can seamlessly be integrated into city planning. By incorporating rooftop solar panel installations, advanced grid systems, and smart home technologies, it showcases the potential for collaborative energy initiatives and community-driven sustainability.

4. Assessment of obstacles and potential for development of ECs

When it comes to the specific obstacles impeding energy communities, several factors can be assessed as key – the lack of specific legislation and simplified procedures, the overall lack of awareness and complexity of gathering relevant information, the financial capabilities of those interested in the communities, and the overall cultural mindset towards this concept and any new unfamiliar topics.

The first issue we can define is the current **regulatory status of EC** – there not an established legislation concerning the activities of producer-consumers (prosumers) and energy communities. The deadline has passed for the transposition of the Directive 2018/2001/EU on the promotion of the use of energy from renewable sources, as well as Energy communities and still, the concept has not been introduced into local laws. We have to keep in mind, however, that the mere transposition may not be enough, as experts in the field express concerns about the effectiveness of this measure, stating that there also exists a multitude of laws, by-laws, and regulations that need to be updated and harmonized as well, to effectively implement these concepts. In addition, there is an absence of clear provisions to regulate the ability to feed excess electricity back into the grid.

When it comes to the relevant regulations on EC, another key factor that obstructs their development is **the issue of taxation** – since the final goal of an Energy community is not to generate profit, but deliver sustainable energy for its members, it is reasonable to argue that these cooperations should not be treated as commercial entities. Currently, they are burdened with various taxes, fees, and administrative payments, the cumulative amount of which may sometimes even surpass the profits from the surplus energy sold. Owners of grid-connected RES installations are obliged to pay access fees, a 5 percent tax on surplus sales revenue, and potentially a 10 percent corporate tax on electricity income.

Thirdly, there is very **low awareness on the existence and possibilities of the EC among citizens** – the potential participants in the face of households, municipalities, and SMEs often do not even know of this concept, and even if they are familiar with the idea it proves to be very hard to find concrete information regarding procedures, requirements, administrative processes, etc. Specifically, when it comes to citizens who are not professionals in the energy sector, the lack of information on the subject can be overwhelming and discourage most from even attempting such initiatives.

Another key issue deterring the development of ECs is the **access to financing**, which can be the most challenging part for households, as very few citizens in Bulgaria have high enough disposable income to devote to projects that are not of immediate necessity, such as renewable energy projects. It is crucial that banks and financing institutions provide preferential and flexible instruments to support renewable energy initiatives and that relevant grant programs are adequately communicated and supported in ways to ensure optimal resource allocation.

Lastly, we must mention the **historical and cultural factor –** in many post-communist countries, the memories of forced collectivization during the communist regime are still vivid, although mainly among older generation, who are very untrusting towards community projects and specifically unfamiliar

"foreign" concepts. This factor is especially important when we consider that the majority of those citizen are the ones who live outside of large developed urban areas and that they represent usually energy-poor households with the heaviest carbon footprints, who could benefit the most from localized, private, green energy.

Despite the issues explained so far, there are also various factors that support the development of solar energy communities in Bulgaria.

When it comes to renewable energy sources, photovoltaic energy is the most accessible - PV panels offer the most cost-effective in terms of initial investment expenses. There is no need for terrain evaluation, unlike for geothermal or wind power installations, and the process of the installation itself is straightforward and less complex, with many specialized companies available to design and execute such projects.

Additionally, solar panels are highly modular, making them adaptable to all sizes and types of roofs to make the most out of the available space. In addition, because of that flexibility in size and type of panels, the project can also account perfectly for the financial frame of the energy community.

When it comes to renewable resources that can be tapped into, Bulgaria, like the rest of the Balkan countries, has excellent solar resources. There is sufficient sunlight that can be gathered during the day, and in combination with the right electricity storage systems, it is perfectly achievable to ensure the installation can provide enough electricity to satisfy the community's needs.

According to data gathered by the Energy System Operator (ESO) 2TW of energy was produced from PV installations in Bulgaria in 2022, bringing it to an increase of about 36%, compared to the previous year[4]. These upward trends have been steadily growing over the past few years, showing that the interest of Bulgarian energy producers in PV installations is constantly increasing. This is important because as previously stated, the regular citizens are hesitant to embrace new unfamiliar concepts and by increasing the commercial use of solar power, it is a matter of time before the households start showing interest and actively participate in this sustainable energy solution.

5. Local government's role in energy communities and citizen energy initiatives

Local governments can and should play a leading role in battling the issues faced by energy communities. From lawmakers to local municipalities, all levels of governing bodies can be actively promoting and enabling citizen communities. The Municipalities could assist the transition to a greener and more sustainable energy paradigm, by initiating projects for Energy communities and inviting citizens and small companies to get involved. This way, by encouraging local projects for renewable energy, they can create new jobs and increase economic activity, while simultaneously developing local infrastructure and placing them in a good position for applying for EU funds.

It is crucial to the introduction of energy communities for the Renewable Energy Directive to be adapted into Bulgarian Law – not only transposed but coordinated with all other relevant local

[4] https://www.eso.bg/fileObj.php?oid=4528

legislation in order to guarantee straightforward and transparent principles. Additionally, changes to existing legislation can be introduced, such as the changes in Law on the organization of the territories from the beginning of 2023, where several requirements that had so far slowed down projects were eliminated, and thus will allow significantly faster and more efficient movement of project documentation, which in some cases can take months. One of the main changes was the removal of the requirement for a building permit for solar panels with a power of up to 20 kW for own needs, which are most rooftop installations. Another was significantly easing the procedures for joining new installations with a total capacity of up to 1 MW for roof and facade structures, by reducing the requirements for research and issue of a statement on the conditions and method of joining to 15-40 days.

Starting by educating the consumers, one-stop shops (OSS) should be established where the citizens can find all relevant information regarding requirements, regulations, procedures, and all other details concerning energy communities. These OSSs can be in physical offices as well as working online to ensure that citizens can receive reliable information regardless of where they live.

Regulations should be made transparent when it comes to using and sharing batteries, charging stations, production installations, etc. As well as describing what the relationship with traders and end suppliers can be. Projects producing green energy for citizens without the intent of profit should be able to take advantage of certain benefits in the interest of motivating all levels of society to take part in the transition towards a greener and sustainable Europe.

As part of the SunSharing project were conducted bilateral meetings with public authorities. According to local Municipalities the two main factors besides the lack of legislation are the lack of information and the financial situation of citizens. They believe it is their role, especially in less populated and poorer areas, to be an active player in the transition towards sustainability by encouraging the citizens to participate in communal projects and those funded by the EU initiatives. Authorities can also actively engage in disseminating comprehensive information and popularizing the energy community's concept by initiating extensive information campaigns, which should inform and educate citizens, companies, and other municipalities on the numerous advantages associated with this type of initiatives.

6. Overview and assessment of crowdfunding initiatives

Crowdfunding[5] is a fundraising method that involves various investors seeking to generate additional income while supporting innovative projects and ideas of SMEs and start-ups. Group financing, or crowdfunding, serves as a viable option for organizations that often struggle to demonstrate solvency, present a robust business plan or showcase a development strategy and because of this find difficulties securing loans from traditional financial institutions. In crowdfunding, the risk evaluation of a project rests with the individual investor, and the trust is earned through the strength of the idea and the potential behind the projects, instead of relying solely on the financial stability of the entrepreneur. Often backers of crowdfunding initiatives get in return the promise for receiving the products of the project first.

[5] https://single-market-economy.ec.europa.eu/access-finance/guide-crowdfunding/what-crowdfunding/crowdfunding-explained_en

Common areas of crowdfunding encompass artistic projects such as museums, music productions or games, start-up companies, innovative projects and other projects with social value.

Quite a few Bulgarian companies have used the method of crowdfunding through Kickstarter – an American public benefit corporation based in New York, that maintains a global crowdfunding platform focused on creativity. The largest Bulgarian project that has used this method is Halfbike[6], by the company "Kolelinia" (tr. BikeLine). During three rounds in 2019 they managed to gather USD 1,3 million for the development and production of innovative bikes that use less material than traditional ones and are designed around the body's natural standing position, combining the motions of cycling, running, and skiing into one single experience.

A common trend among those Bulgarian companies who have completed projects through Kickstarter is that they all state that they would use the crowdfunding initiative again as the method is highly efficient, and once they have gone through the process, they now know how to improve and be even more successful.

Unfortunately, there aren't any examples of crowdfunding being used for communal energy projects, however, with the development of the interest towards energy communities, hopefully this financing instrument will become more widely used as it can fit perfectly within the frame of these energy projects.

When conducting a crowdfunding initiative, one must first choose an online platform and find the optimal way of presenting the project looking for financing. In the stage of choosing a platform, the type of the project has to be taken into account - whether it will be of the type that provides a share to the investor or one that provides a reward for the funding. Different countries have different legal restrictions in this direction, which is why the more common option is the one with prizes. A key factor is defining the required funds and timeline, because if the entire sum is not collected in time, the money has to be returned to the investors.

In Bulgaria, crowdfunding was introduced into local legislation for the first time on 1 July 2022 under the Law on the Public Offering of Securities (LPOS) - According to that law, a provider of collective financing services can be a joint-stock company or a Ltd that has received the relevant license from the Financial Supervision Commission (FSC). The FSC issues a license to a company registered on the territory of Bulgaria, which meets the regulatory requirements under the Regulation (Art. 12) - both for the company and its activities, as well as the individual requirements for the members of its management and control bodies.

7. Conclusion

Energy communities have emerged as a prominent and increasingly discussed topic, that holds the capacity to be a leading factor in the energy sector. They empower individuals, households, businesses, and local communities to actively participate in the generation, consumption, and management of clean energy. Bulgaria should plan carefully its vision for the next few years. It is necessary to develop measures that support both energy communities and renewable energy sources in general. Such measures should encompass a range of initiatives, including direct assistance programs, support for citizen training, and enhanced investment in education and research. Key components are the transposition of the RED II and the modification of relevant laws and by-laws on the matter, as well as

[6] https://www.capital.bg/biznes/pazari/2021/09/10/4251475_pandemiiata_i_parite_na_tulpata/

nationwide information campaigns targeting citizens to ensure that households are capable and willing to be an active part of the green transition and the energy independence of their countries and Europe in general.