

NO REGRET STRATEGY

FOR A RAPID AND SUSTAINABLE DECARBONIZATION OF THE WESTERN BALKANS COUNTRIES

Policy Analysis

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The views expressed in this document represent solely the views of the authors and do not necessarily reflect the views of the RESET Centre for Sustainable Energy Transition and the European Climate Foundation.

INTRODUCTION

This policy analysis was prepared by the RESET Centre for Sustainable Energy Transition, a think-tank based in Sarajevo, through research conducted in Bosnia and Herzegovina, Serbia, and Montenegro. It forms part of the project “*Citizens Energy for the Western Balkans – CE4WeB*”, financially supported by the European Climate Foundation (ECF).

The impetus for this project arises from the slow and fragmented nature of the energy transition in the Western Balkans. The process faces significant resistance and structural obstacles, and local actors often perceive the transition not as a developmental opportunity, but as a threat. Alongside national transition policies, frameworks supported by international actors, primarily the European Union (EU), the region's most influential partner, play a critical role.

Against this backdrop, the concept of citizens energy, or locally driven energy transition, has been placed at the centre of this research. It is a vital lever for decarbonization, demonopolization, decentralization, and democratization of the electricity sector. Moreover, its role in enabling a just transition and addressing energy poverty, both pressing challenges across the Western Balkans, makes it an essential focus for policy innovation and citizens engagement.

As part of the development of this policy analysis, three national reports were prepared for countries with significant coal dependency - Serbia, Bosnia and Herzegovina, and Montenegro¹. These reports assessed the current state of citizens energy and identified key bottlenecks and barriers hindering its accelerated development. Drawing on the findings, a set of policies, instruments, and measures were proposed to position citizens energy as a central driver of the energy transition and as a practical mechanism for decarbonizing domestic electricity consumption. The national reports, along with their conclusions and recommendations, were presented to key domestic stakeholders during national workshops. Feedback and proposals from these discussions were integrated into the final version of this policy analysis.

This analysis is intended to support both national and international energy policymakers in designing urgently needed new policies and measures. Existing policy frameworks have proven insufficient in delivering the expected outcomes of the transition process and do not guarantee the achievement of climate neutrality targets, which these countries committed to by signing the Sofia Declaration.

Beyond policymakers, the recommendations also serve as a resource for other domestic activists providing them with additional arguments in their advocacy for the fulfilment of the right of citizens, businesses, and local communities to claim their rightful role as active participants and primary beneficiaries of the energy transition, rather than passive observers or disproportionate bearers of its costs.

1) The share of electricity production from coal-fired thermal power plants in 2024 was 62% in Serbia, 58% in Bosnia and Herzegovina and 39% in Montenegro.

EXECUTIVE SUMMARY

All Western Balkan countries have committed to aligning with EU energy and climate policies, aiming to achieve climate neutrality by 2050. *Despite more than two decades of energy transition efforts, largely supported by the EU through the Energy Community, the outcomes remain deeply concerning.* The region lags significantly behind the EU across all key dimensions of the transition: coal phase-out and just transition programs, renewable energy deployment, transport electrification, energy efficiency improvements, and the reduction of energy poverty.

A particularly troubling aspect is the chronic lack of investment and the widespread resistance to current energy transition policies among citizens and businesses. These groups, often relegated to the role of passive observers, disproportionately bear the financial burden of the transition while remaining excluded from its benefits and decision-making processes.

Previous analyses of international support mechanisms, especially those led by the EU, have identified the prevailing "top-down" model of policy transposition as a major contributor to these shortcomings. In this model, national governments and state-owned energy companies are treated as the EU's primary partners, sidelining local actors and civic initiatives.

To accelerate the transition, particularly the decarbonization of electricity consumption, a paradigm shift is urgently needed. This analysis advocates for a hybrid approach that combines "top-down" policy alignment with robust "bottom-up" support for citizens energy. *In particular, fostering prosumer models and enabling citizens participation are essential to democratizing the energy transition and unlocking its full potential across the Western Balkans.*

This document begins by outlining the strategic importance of citizens energy as a cornerstone of the energy transition in the Western Balkans countries that remain economically less developed than EU Member States. In such medium- and lower-income contexts, citizens energy empowers local actors to enhance economic, social, and community resilience, while positioning them at the heart of a sustainable, fully renewable, affordable, and inclusive energy future.

The analysis then provides a country-by-country overview of the current state of citizens energy development. For each country, it details the regulatory, economic, social, and technical barriers that hinder progress. While specific challenges vary across national contexts, a common finding is that support systems for citizens energy are generally weak and poorly targeted. Subsidies tend to be insufficient and disproportionately benefit market-based producers and wealthier segments of the population, leaving small-scale actors and vulnerable groups behind. In addition, significant physical constraints have been identified - particularly the poor quality of distribution networks at the low-voltage level which limit the ability of prosumers to connect and contribute to the grid in many areas.

The conclusions of this analysis emphasize that accelerating the energy transition in a sustainable and socially supported manner requires a strategic shift, from the current focus on *decarbonizing domestic production to a new emphasis on decarbonizing domestic consumption* of electricity. In the Western Balkans, households, small and micro enterprises, and local service sectors represent the dominant share of electricity consumption. *Therefore, energy policies, transition strategies, and support mechanisms must adopt a bottom-up approach that prioritizes the development of citizens energy.*

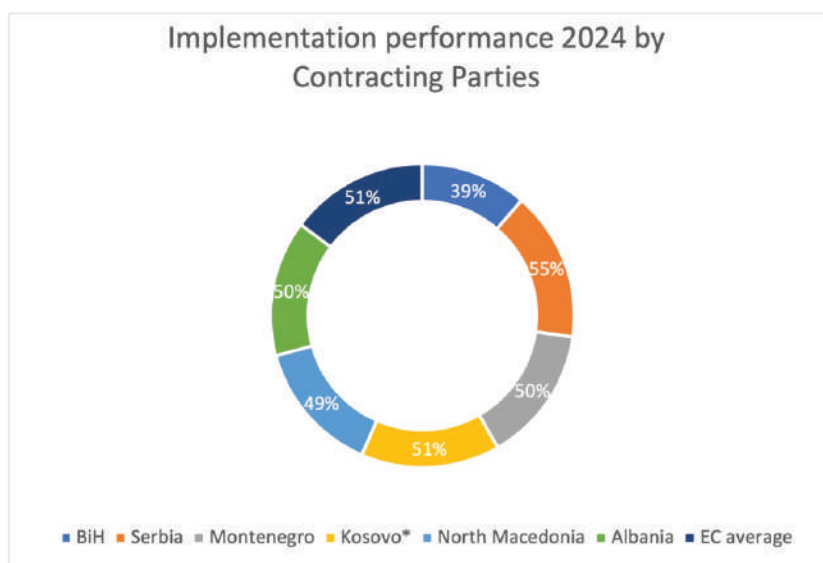
EXECUTIVE SUMMARY

Achieving this shift demands substantial changes in both EU and national energy and climate policies. The current EU support framework for the Western Balkans, as well as national strategies, must be reoriented to empower local actors and democratize the transition process. To this end, the document presents eight targeted recommendations for domestic stakeholders, particularly national governments, and seven for international actors, with a focus on the EU. These recommendations aim to support citizens energy as a “no regret” strategy for advancing the energy transition in the Western Balkans.

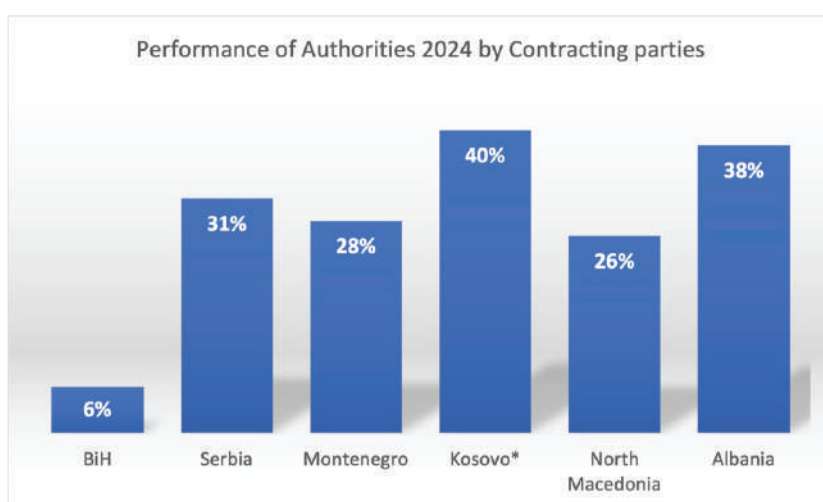
The importance of citizens energy has already been recognized within the EU, notably through the “Clean Energy for All Europeans” package, which enshrines the rights of citizens to actively participate in the energy system. Reflecting this vision, the project underpinning this research was named “Citizens Energy for the Western Balkans”. The core message of this analysis is clear: *citizens in the Western Balkans deserve the same opportunities, rights, and roles in the energy transition as their counterparts in the European Union.*

1. The State of Energy Transition and the Process of Decarbonization of Domestic Consumption in the Western Balkans

All the countries of the Western Balkans, with the exception of Kosovo*, are candidates for EU membership and are at different stages of the accession process. Through the establishment of the Energy Community in 2006, they also assumed the obligation to harmonize their legal and regulatory framework in the field of energy and energy policies with the rules and regulations of the EU, and by signing the Sofia Declaration², they also assumed the obligation to achieve climate neutrality by 2050. Although the energy transition process has been going on for 20 years, the results are almost devastating for all countries in the region, which is best seen from the latest Energy Community annual report on the implementation³:



The root cause of this situation lies in the absence of a clear vision and the evident reluctance and disinterest of key actors, namely, governments and state-owned energy companies, to accelerate the energy transition. This is reflected in the aforementioned report, where government performance is rated in the lowest category in terms of effectiveness:

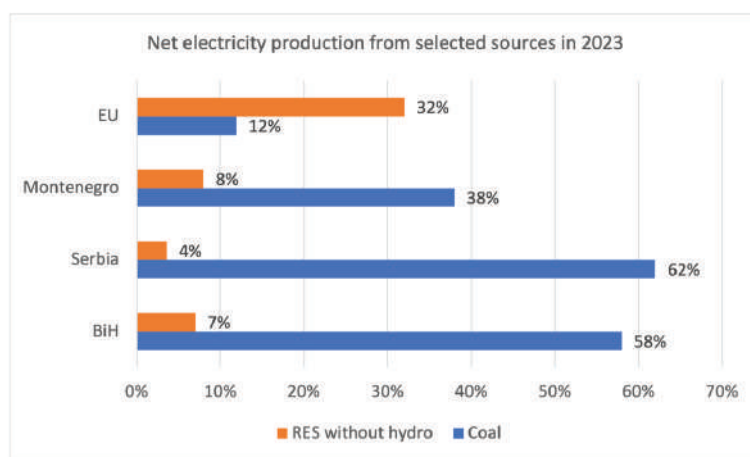


2) Sofia declaration: <https://www.rcc.int/docs/546/sofia-declaration-on-the-green-agenda-for-the-western-balkans-rn>

3) Annual implementation report 2024, Energy Community <https://www.energy-community.org/contracting-parties/performance.html>

The underlying reasons for resistance by authorities and state-owned energy companies to the energy transition are thoroughly examined in the study *"Chaotic and Fake Decarbonization of Power Sectors in the Western Balkans"*⁴.

This resistance has contributed to a significant delay in renewable energy investments across the region, particularly in modern technologies such as wind and solar. As a result, the decarbonization of the electricity sector remains stalled. This lag is clearly illustrated by comparative data on electricity generation sources in the countries covered by this research, especially when contrasted with EU benchmarks⁵:



The data clearly demonstrate that Western Balkan countries are significantly lagging behind the EU in both the energy transition and the shift toward renewable energy sources (RES) .

Beyond the previously mentioned domestic barriers, international energy policies, particularly those shaped by the EU, have also played a role in this stagnation. Many of these policies, concepts, and support mechanisms have been misaligned with the region's realities. EU strategies often attempt to transplant models, dynamics, and timelines into the Western Balkans without adequately accounting for local specificities or critically assessing why past efforts have underperformed. This has led to a reductive narrative that blames authorities in the region for either lacking the will or capacity to implement EU policies - an explanation that is only partially accurate.

A key issue lies in the EU's persistent reliance on a top-down approach, which has failed to deliver meaningful results in the region despite substantial financial and technical assistance. In the electricity sector this is evident in the disappointing pace of decarbonization. Most EU support has been channelled toward state-owned utilities and, to a lesser extent, large private investors, while citizens, small and micro companies, and local communities remain largely excluded from the transition.

To accelerate the energy transition and decarbonize domestic electricity consumption, a paradigm shift is needed: from top-down to bottom-up. This means reorienting policies to actively support the development of citizen-led energy initiatives and empowering local actors as central drivers of change.

4) „Chaotic and Fake Decarbonization of the Power Sector in Western Balkans“, RESET, 2023, https://www.reset.ba/images/2023/11_novembar/Chaotic%20and%20fake%20decarbonization%20on%20WB%20RESET%20web.pdf

5) Note: The data for the countries of the region are calculated on the basis of the reports of the national regulatory agencies, and the data for the EU are from the following source: <https://www.consilium.europa.eu/en/infographics/how-is-eu-electricity-produced-and-sold/#0>

6) Author's note: The above statement does not apply to Albania when it comes to generation sources since it produces electricity entirely from RES, while the statements presented in the text apply to Kosovo* and North Macedonia, as well.

2. What Is Citizens Energy and Why Does It Matter in the Western Balkans?

Citizens energy refers to the active involvement of individuals, businesses, and local communities in the energy transition, particularly through improving energy efficiency and decarbonizing domestic energy consumption. Energy savings and more efficient use of electricity represent a universally beneficial, “no-regret” strategy. They deliver tangible benefits to individual users while contributing to broader societal goals. In the context of the Western Balkans, the decarbonization of domestic electricity consumption is especially critical. It serves as a cornerstone for a successful and sustainable energy transition and a meaningful contribution to global climate action.

Across the European Union a bottom-up approach to energy decarbonization, anchored in citizens energy, is gaining momentum. This shift is embodied in the slogan “Clean Energy for All Europeans” and reinforced by key policy documents. The “Manifesto of Collective Action - Community-Led Initiatives and the European Green Deal” emphasizes that:

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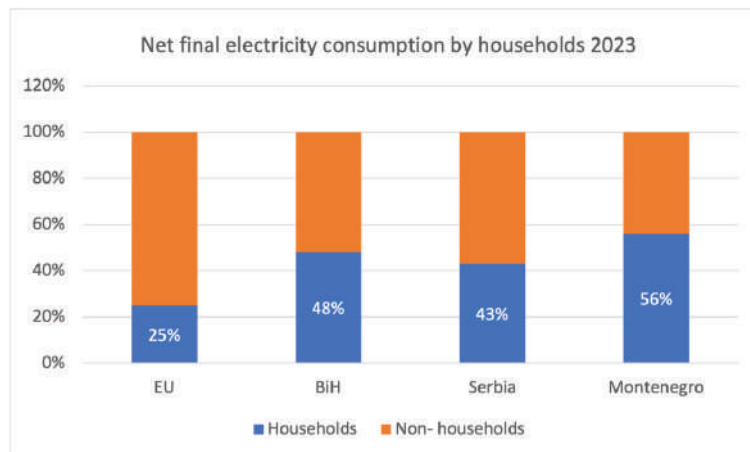
“Transformative change requires both individual and collective action accompanied by systemic change... [demanding] support for people to become active change-makers as citizens, as active consumers, in their communities and in their workplaces.”

For the Western Balkans, embracing citizen energy is not just a policy option, it's a strategic imperative. It offers a pathway to democratize the energy transition, empower local actors, and overcome the limitations of top-down approaches that have so far failed to deliver inclusive and resilient outcomes. In this context, the deployment of rooftop solar photovoltaic (PV) systems is a cornerstone of a people-centred energy transition. It enables individuals, local businesses, and communities to actively engage in and benefit from the transition, whether through prosumer status or by forming renewable energy communities (REC) and citizens energy communities (CEC).

Rooftop solar systems are particularly well-suited to the Western Balkans due to their scalability, accessibility, and adaptability. They empower households, local businesses, and municipalities to generate their own electricity, adopt energy efficiency measures, and implement energy management practices. This not only lowers energy bills but also contributes to reducing energy poverty. By embracing rooftop solar, local actors enhance their economic and social resilience while affirming their central role in shaping a sustainable, fully renewable, affordable, and inclusive energy future.

Rooftop solar technology offers a compelling solution for the Western Balkans due to its affordability, rapid deployment across diverse conditions and locations, and the low cost of the electricity it generates. Beyond its role in decarbonizing electricity consumption, rooftop solar also enables the transition away from traditional heating systems, particularly individual fireplaces, which remain the dominant heating method in the region, by facilitating the adoption of electric heat pumps.

One of the key advantages of rooftop solar is its production at the point of consumption, which enhances energy efficiency and grid resilience. Moreover, it has minimal environmental and biodiversity impact, as it utilizes already built surfaces and preserves natural land and ecosystems. This approach is especially relevant for middle- and low-income countries like those in the Western Balkans, where households represent the largest share of electricity consumption and are the primary drivers of demand. This contrasts with EU Member States, where industrial and commercial sectors typically dominate electricity use:



In countries where electricity consumption is concentrated at the lowest distribution level (i.e., 0.4 kV), particularly within households, energy policies should prioritize the development of citizens energy through a bottom-up approach. This stands in contrast to more developed EU Member States, where energy policies typically focus on dominant electricity consumers such as industry, commercial services, and transport, and are implemented primarily through top-down mechanisms.

Promoting electricity generation at the point of consumption not only empowers local actors but also reduces the need for costly investments in transmission infrastructure to meet current and future demand. At the same time, it enhances the efficiency of the distribution system by lowering energy losses across the network.

Beyond the previously mentioned benefits, the strategic importance of citizens energy in the Western Balkans, given the region's heavy reliance on coal and electricity imports, is reflected in several key dimensions:

- a. Energy Independence:** Generating electricity from domestic renewable sources for self-consumption directly enhances national energy autonomy and reduces dependence on external supply.
- b. Security of Supply:** Localized self-consumption at the point of use strengthens security of supply by minimizing exposure to grid disruptions and import volatility.
- c. Social Justification:** Producing electricity for personal or community use reduces the need for large-scale RES investments, which often carry financial and permitting risks for investors. It also lowers the demand for costly transmission infrastructure expansions.
- d. Economic Viability:** Investments in citizens energy, particularly rooftop solar, are economically sound. The cost per kilowatt-hour (kWh) of self-generated electricity from PV is typically lower than the retail price from suppliers, making it a sustainable and profitable strategy both in the short and long term.
- e. Decarbonization of Domestic Consumption:** Citizens energy is uniquely positioned to decarbonize household electricity use. Unlike commercial RES projects, which often feed into broader markets, energy produced through citizens energy initiatives is primarily consumed locally, ensuring direct environmental and climate benefits.

3. How far has Citizens Energy Come in the Region, and what are the Main Obstacles to Faster Development?

As previously noted, the research on the state of citizen-led energy initiatives was conducted in three countries: Bosnia and Herzegovina, Serbia, and Montenegro. The findings are presented by country.

3.1. Bosnia and Herzegovina (BiH)

Bosnia and Herzegovina currently ranks lowest among Energy Community member states in implementing energy packages and related measures. Moreover, the country has yet to adopt its National Energy and Climate Plan (NECP), whose draft has been widely criticized as lacking ambition. These shortcomings reflect a broader absence of strategic vision among decision-makers regarding the energy transition, particularly in recognizing the potential and importance of citizens energy as a driver of change.

Citizens energy in Bosnia and Herzegovina is largely marginalized and undermined by entrenched energy lobbies and a lack of strategic vision. Rather than being embraced as a cornerstone of inclusive and sustainable decarbonization, and a key contributor to energy security and independence, it is often perceived as a burdensome obligation imposed externally through the transposition of EU regulations.

Under these conditions, the main obstacles and bottlenecks include:

- a. *Weak and incomplete essential legislation* for the development of citizens energy initiatives.
- b. *Delays in adopting bylaws, procedures, and technical rules*, often exceeding legal deadlines. These documents are frequently vague and overly complex, especially from a technical standpoint, creating the impression of intentional obstruction.
- c. *There is limited awareness and education among local actors*, including citizens, businesses, and municipalities. This lack of engagement, combined with the above barriers, renders key stakeholders passive in the energy transition. Trust and public support are eroding, as these actors bear the costs of transition, through rising energy prices and contributions to renewable energy subsidies, without experiencing tangible benefits.
- d. *An underdeveloped and inadequate support system* for citizens energy since existing subsidies are insufficient and disproportionately benefit market-based producers and wealthier segments of the population, leaving grassroots initiatives without meaningful backing.

In addition to the regulatory and institutional challenges, a range of technical barriers continues to hinder the development of citizens energy in Bosnia and Herzegovina. These include:

- a. *Outdated and poorly maintained distribution networks*, particularly in rural areas, which limit the integration of distributed energy resources (DER).
- b. *Unfavourable characteristics of low-voltage (LV) networks*, especially in sparsely populated regions. Long LV feeder lines and other structural limitations reduce the capacity to accommodate distributed generators (DG).
- c. *Insufficient funding for the revitalization and modernization of electricity distribution infrastructure*, with current allocations based on existing network tariff structures, falling short of actual needs.
- d. *Implementation challenges in network reconstruction projects*, such as the installation of MV/LV transformers to enhance LV network capacity for PV prosumers. These are often delayed due to complex and time-consuming permitting procedures⁷.

7) In BiH, the situation regarding obtaining construction permits has further deteriorated due to ambiguities about the use of state land.

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- e. *Low levels of digitalization*, reflected in the limited deployment of smart meters and other enabling technologies.
 - f. *Underutilization of existing software tools*, including Geographic Information Systems (GIS), Meter Data Management (MDM), and SCADA systems, which are critical for assessing distribution network conditions and streamlining DG connection approvals, especially on LV networks.
 - g. *Limited human and organizational capacity within distribution system operators (DSOs)* to manage the integration of DGs and other DERs, and to transition toward smart grid-based operations.

3.2. Serbia

Unlike Bosnia and Herzegovina, Serbia is currently the highest-rated Energy Community member in the Western Balkans in terms of energy transition progress, despite having fulfilled only about half of its formal commitments to date. The country has adopted its National Energy and Climate Plan (NECP) and has been implementing the prosumer model for citizens energy over the past three years. However, despite legislative efforts and subsequent amendments, Serbia has yet to establish the necessary bylaws, rules, and procedures to fully operationalize renewable energy communities (REC) and citizens energy communities (CEC). As a result, key mechanisms, such as the recognition of energy communities and the granting of active customer status, remain unavailable in practice.

Serbia currently has 5,061 active prosumers, categorized into three groups: households (3,667), residential communities (5), and companies and public institutions (1,389). Together, they account for a total installed solar capacity of 101 MW. Notably, the number of residential communities participating as prosumers remains extremely low. This is primarily due to outdated regulations governing the management of housing associations and the use of shared property, particularly rooftops, which are not aligned with the technical and legal requirements for solar panel installation. These regulatory barriers significantly complicate the process and discourage many residential communities from participating.

Although the government, in collaboration with local municipalities, issues biannual calls for co-financing prosumer investments, covering up to 50% of the required investments, the overall installation rate has slowed. Among households, the average number of new rooftop solar installations dropped from 3.6 per day in 2023 to 2.5 per day in 2025. A similar trend is observed among companies and public institutions, where the daily connection rate declined from 1.6 to 0.9 over the same period.

Two key conclusions emerge from this trend. First, there appears to be a slowdown in the responsiveness of connection approvals by the distribution system operator. Although connection procedures are clearly defined by law and governed by relatively short legal deadlines, delays persist. For legal entities, the connection of consumer-producer power plants can take several months, while for households, the process typically extends up to one month. Second, the system for educating, promoting, and informing citizens about prosumer opportunities seems to have faltered. Following an initial surge in applications, interest has stagnated, suggesting that outreach efforts have not sustained public engagement. Additionally, recent amendments to the law may have contributed to the slowdown. Under the new provisions, prosumers can only access the net metering system until the end of 2026, after which the system will transition to net billing. This looming change likely dampens enthusiasm among households, who may perceive reduced financial benefits or increased uncertainty.

Based on the above analysis, the following conclusions can be drawn:

- a.** *The concept of citizens energy in Serbia has gained traction through the prosumer model.* However, the full legal and regulatory framework necessary for broader citizens energy development, particularly regarding active customers, renewable energy communities, and citizens energy communities remains incomplete.
- b.** *Education, public awareness, and technical support for local actors* represent significant bottlenecks hindering the further expansion of citizens energy initiatives.
- c.** *Revenues generated from RES fees* continue to be directed toward subsidizing market-based electricity producers, rather than supporting the growth of citizens energy. Meanwhile, budgetary resources and international loans are being used to subsidize prosumer investments.

From a technical standpoint, the condition of Serbia's distribution grid is unsatisfactory and represents a major barrier to the accelerated development of citizens energy. The limited capacity to absorb excess energy and connect new distributed generators is primarily due to the following factors:

- a.** *Aging and poorly maintained infrastructure*, particularly in rural areas, where large portions of the network are outdated and prone to failures.
- b.** *Unfavourable characteristics of low-voltage (LV) distribution networks*, especially in rural regions, include long LV feeder lines that reduce efficiency and grid stability.
- c.** *Low levels of digitalization across the distribution system.* Of the more than 3.8 million electricity meters installed nationwide, only 200,000 are advanced (smart) meters, with just 138,000 deployed in households.
- d.** *Insufficient investment in network revitalization and modernization*, resulting in limited upgrades and inadequate preparation for increased deployment of distributed generation (DG).
- e.** *Underutilization of existing software tools*, such as GIS, MDM, and SCADA systems, for analysing distribution network conditions during DG connection approval processes, particularly on LV networks.
- f.** *Limited human and organizational capacity within the distribution system operator - EDS*, to manage the integration of DG and other distributed energy resources, and to lead the transition toward smart grid-based operations.

3.3. Montenegro

Montenegro has yet to adopt its National Energy and Climate Plan (NECP), which is essential for guiding the country's energy transition and climate action. Although a key regulation completing the legislative framework for citizens energy was adopted in mid-2024, the necessary bylaws related to prosumers and other forms of citizen-led energy, along with additional rules required for the smooth development of citizens energy, remain pending. Despite this, the Law on Energy and accompanying bylaws adopted in 2020 enabled citizens to obtain prosumer status under a unique implementation model. Specifically, the State Electric Power Company (EPCG) has taken the lead in developing prosumer capacity by offering 100% financing to users, installing PV systems on household rooftops, and handling all administrative procedures⁸.

8) Actually, EPCG applies an ESCO model.

Montenegro stands out as the only country in the region to have introduced a CO₂ taxation system. EPCG, as the largest contributor to this tax, receives a substantial portion of the collected funds back through the ECO Fund. These funds are then reinvested into household PV installations, supplemented by other favourable financial mechanisms. To date, over 7,000 households in Montenegro have acquired prosumer status, with an additional 20,000 applications pending. The total installed capacity of prosumer systems is approximately 70 MW, although a significant portion remains formally unconnected to the grid. This disconnect stems from a lack of coordination between EPCG and the distribution system operator - CEDIS, as a result of technical challenges with prosumer connections, particularly in areas where higher-capacity prosumer systems have been installed.

Although the model currently applied in Montenegro has delivered tangible results, it also presents several limitations and raises important concerns. Beyond the issue of coordination with the CEDIS, a key challenge lies in the monopolization of citizens energy development by a single entity - namely the state-owned EPCG. The absence of bylaws governing prosumers, coupled with the lack of alternative models for technical and financial support, has made it nearly impossible for citizens energy initiatives to emerge independently of EPCG. This centralized approach has broader implications. The pace and scope of citizens energy development in Montenegro are effectively constrained by the physical and financial capacity of EPCG alone. This bottleneck is clearly reflected in the backlog of over 20,000 pending prosumer applications, underscoring the need for a more diversified and enabling framework.

During the initial phase of prosumer development in Montenegro, the technical challenges posed by the distribution network were largely unforeseen. Notably, the varying quality of the low-voltage (LV) network and its corresponding capacity to accommodate PV prosumers across different distribution regions and local grids were not adequately considered. Because the process for selecting prosumer locations and rated capacities was not coordinated with the distribution system operator - CEDIS, the installation of high-capacity PV systems in geographically concentrated areas with weak LV infrastructure led to adverse network effects. Chief among these was overvoltage near prosumer connection points. In response, CEDIS declined to approve grid connections for certain prosumers, resulting in friction and misunderstandings with EPCG.

This experience highlights the urgent need for a systematic approach to assessing the capacity of local distribution networks to integrate PV prosumers, commonly referred to as Hosting Capacity analysis, as a foundational element in prosumer development planning.

Based on the above, the following conclusions can be drawn:

- a.** *Citizens energy has gained traction in Montenegro, but its vision, development, and implementation have been delegated exclusively to the state-owned energy company EPCG, which operates as a monopolist and shapes the process according to its own technical, financial, and human resource capacities.*
- b.** *The legislative framework remains incomplete.* Key bylaws, procedures, and regulations necessary for the comprehensive and unhindered development of citizens energy in all its forms have yet to be adopted.
- c.** *Financial and technical support for citizens energy is limited, narrowly focused, and channelled solely through EPCG, leaving no room for alternative models or broader participation.*
- d.** *There is a persistent lack of awareness and education among local communities, citizens, and businesses regarding the principles and opportunities of citizens energy.*

From a technical perspective, the key obstacles to the further development of citizens energy in Montenegro include:

- a. Unfavourable characteristics of low-voltage (LV) networks**, particularly in certain distribution regions, where small conductor cross-sections and long LV feeder lengths limit the ability to integrate distributed generation (DG).
- b. Insufficient investment in the revitalization, upgrading, and modernization of distribution infrastructure** hampers the network's readiness for increased prosumer participation.
- c. Low levels of digitalization across the distribution network**, with CEDIS only recently initiating procurement of SCADA systems for the medium-voltage (MV) network.
- d. Underutilization of existing software tools and data**, such as GIS, MDM, and Automated Meter Reading (AMR) systems, which are not effectively leveraged to assess distribution network conditions or support DG connection approvals, especially on the LV level.
- e. Limited human and organizational capacity within the DSO** to manage the integration of DG and other distributed energy resources, and to lead the transition toward smart grid solutions.

The results of the survey conducted across Montenegro, Serbia, and Bosnia and Herzegovina are summarized in the following table:

State of Citizens Energy	BiH	Serbia	Montenegro	Remarks
Vision and understanding of the importance of the development of citizens energy	😞	😞	😞	
Legislation for Citizens Energy	😬	😬	😬	All three countries have adopted the necessary laws, but it is necessary to further refine them and harmonize them with EU directives
Prosumers - bylaws, rules, procedures, etc.	😞	😊	😞	Montenegro does not have a rulebook yet, while in BiH, there are rulebooks, but other accompanying acts and procedures have not yet been done
RES Communities - bylaws, rules, procedures for implementation, etc.	😞	😞	😞	Serbia and Montenegro have not done anything about it, and only one entity in BiH (RS) has a rulebook
Citizens Energy Communities - bylaws, rules, procedures for implementation, etc.	😞	😞	😞	
Active customers - bylaws, rules, implementation procedures, etc.	😞	😞	😞	
Education, public information and technical assistance	😞	😞	😞	There is no systematic approach, it all comes down to individual projects and the NGO sector
Involvement of local communities in support of the development of citizens energy	😞	😬	😞	In Serbia, local communities actively participate with the state in co-financing prosumers, but other support measures are mostly absent
A system of financial support for the development of citizens energy	😞	😊	😬	In Montenegro, financial support goes to the programs of the state-owned energy company
The state of the distribution network and DSO readiness to receive a large number of PV on the roofs	😞	😞	😞	
Legend 😞 poor 😊 good 😬 good, but...				

4. Conclusions

The research reveals that Western Balkan countries are falling alarmingly behind the rest of Europe in advancing their energy transition and decarbonizing domestic energy consumption.

The most significant lag is in the development of citizens energy, which remains largely unrecognized as a key pillar of the transition. It is not viewed as a viable, economically and socially sustainable driver of decarbonization, nor as a strategic tool for enhancing energy independence and security of supply. As a result, citizens, businesses, and local communities across the region continue to be treated as passive recipients of energy policy rather than active participants and leaders in the transition. This exclusion has contributed to a widespread negative perception of the energy transition among the general public.

For many, the transition is seen not as a developmental opportunity, but as a threat - an externally imposed obligation driven by EU directives. To date, the only tangible impact felt by citizens has been rising electricity prices and the broader inflation of goods and services. Meanwhile, the RES fee they pay is funnelled into opaque and often corrupt concession processes that benefit commercial investors, frequently at the expense of environmental integrity.

The prevailing top-down approach - characteristic of energy transition policies both within and toward the Western Balkans - has failed to deliver the expected outcomes. Modelled on EU transition frameworks and reliant on the transfer of best practices, this approach overlooks a fundamental reality: the socio-economic, social, and market conditions in the Western Balkans differ significantly from those in the EU⁹.

To accelerate the energy transition in a sustainable and socially supported manner, a paradigm shift is urgently needed. This means moving away from the current focus on "decarbonization of domestic production" and toward a strategy centred on the "decarbonization of domestic consumption."

Households, small and micro enterprises, and local service sectors represent the dominant share of electricity consumption in the region. Therefore, energy policies, transition strategies, and support mechanisms must adopt a bottom-up approach that prioritizes the development of citizens energy. Such a shift would not only speed up the decarbonization of domestic consumption but also ensure that the transition is fair, inclusive, and locally anchored. By empowering citizens and communities as active participants, this approach would foster broad political and economic support for the energy transition across the Western Balkans.

To make this possible, a substantial reorientation is required, both in EU energy policy and in the structure of international support systems for the region, as well as in national energy strategies and frameworks.

9) In the Western Balkans, the electricity sector is dominated by state-owned companies that are under the political influence of the government, energy poverty is a problem many times greater than in EU countries, the standard of living of the population is many times lower than in the EU, while the economy is less competitive. While in the EU, electricity consumption is dominated by industry, in the Western Balkan countries it is dominated by household consumption.

5. Recommendations for Domestic and International Decision-Makers

To unlock the full potential of the energy transition in the Western Balkans, decision-makers in the region should act swiftly and decisively to:

- a. *Recognize and prioritize citizens energy* as the region's most reliable "no regret" strategy for achieving energy transition goals and meeting full decarbonization targets by 2050. This requires a shift in focus - from decarbonizing production to directly decarbonizing domestic consumption. In this context, rooftop solar PV deployment on private, public, and commercial buildings stands out as the most practical, rapid, cost-effective, and socially inclusive pathway.
- b. *Urgently revise and upgrade legislation related to citizens energy*, and align it with the latest EU directives - Directive (EU) 2024/1711 and Directive (EU) 2024/1275. This includes removing legal and administrative barriers that hinder citizens' participation and investment in renewable energy.
- c. *Accelerate the adoption of missing bylaws, rules, and procedures* necessary for the implementation of renewable energy communities, citizens energy communities, and active buyer models. Existing bottlenecks, such as unclear procedures, excessive documentation, long deadlines, and high connection costs for prosumers, must be addressed through user-centred reforms and the adoption of best practices from comparable EU contexts.
- d. *Urgently abolish "feed-in" models and the practice of subsidizing the commercial production of electricity from renewable sources from funds collected from consumers through the RES fee*, among other things, to prevent congestion of the distribution network and thus make it difficult or completely impossible (as happened in some areas of North Macedonia) to connect citizens energy capacities. Available funds collected from fees should be redirected to support citizens energy projects and address energy poverty, while commercial projects, which are cost-effective in themselves, should be valorised through auctions, on the market, or through power purchase agreements (PPA), and not subsidized from funds collected from citizens and businesses.
- e. Given that all countries of the Western Balkans (except Montenegro) are about to introduce a *CO2 taxation system, a significant part of the money collected in this way should be directed to the development of citizens energy*, primarily towards the poorer part of the population and people in extreme energy poverty.
- f. *The focus of investments in network capacities should be redirected from the transmission grid to the development and modernization of the distribution network* (primarily for digitalization and automation) in order to ensure fast and transparent connection and efficient integration of a large number of small PV sources and the management of production and consumption at the lowest voltage level. Therefore, DSOs urgently need to prepare modernization plans, which are mainly based on digitalization, in order to increase the observability of networks (especially on the LV level) and thus start the transformation based on the concept of smart grids. At the same time, it is necessary to launch training programs for employees to increase the capacity to use modern digital technologies in order to make decisions based on real data on the network, consumption, and prosumers. Regulatory agencies should adopt a methodology for approving and monitoring such investments.

g. *Governments should provide assistance* for the establishment and development of centres of excellence for the energy transition and centres for information and education of the population and businesses at the local level.

h. *Develop special and permanent programs of education* and information of the population and introduce new subjects and programs at all levels of education that will promote energy transition and the development of citizens energy.

Of course, in order for these recommendations to be implemented in practice, it is necessary to change international policies and practices supporting the energy transition in the Western Balkans, in which the EU has a leading and most important role. Therefore, international actors supporting the energy transition, and in particular the EU, are recommended to:

a. *Analyse the scope and effects of its current policies and approaches* to the energy transition in the Western Balkans, and to pay special attention to the mechanisms and effects of financial assistance to the Western Balkan countries so far.

b. *Focus on the development of citizens energy as a first priority and a "no regret" strategy* that ensures an efficient, effective, and just transition and the achievement of the set decarbonization goals in the Western Balkan countries;

c. *In line with the above, allocate part of the funds earmarked for the Western Balkans in the new EU budget for direct and concrete assistance to local communities*, businesses and citizens for the development of citizens energy and addressing the problem of energy poverty, as well as for other energy transition projects at the local level through the establishment of a new mechanism through which local actors could directly access EU funds without the mediation of higher levels of government;

d. *Redirect the available technical assistance, which has so far been reduced mainly to technical assistance* to governments and state-owned energy companies, partly to local communities, businesses, and populations for the development and implementation of energy transition projects at the local level.

e. *Provide technical assistance (e.g. through ENTSO-E and DSO Entity) and financial support for the development and modernization of the distribution network*, and increase the capacity for the unhindered scale-up of citizens energy and the creation of conditions for the transition to the smart grid concept.

f. *Support efforts of the local actors to educate and inform stakeholders at the local level* about the importance and need for the energy transition and the development of citizens energy.

g. *Support the establishment and development of centres of excellence for energy transition* and centres for information and education of the population and the economy at the local level, and their connection with similar centres in EU countries.

