COUNTRY REPORT - SERBIA

Household Prosumers and Public Support Schemes in Serbia:

Rooftop PV Uptake, Accessibility and Policy Recommendations

Analysis of policies and programmes supporting household rooftop PV and prosumer development

Authors of Analysis:
RES Foundation Team

CENTAR ZA UNAPREĐENJE ŽIVOTNE SREDINE

Eko svest

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Country Report — Serbia

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Table of contents

1 **Executive Summary** 3

Headline quantitative indicators 3

Priority recommendations 4

Limitations 5

2 **Introduction and Scope** 6

Objectives and research questions 6

Scope of analysis 7

Structure of the report 7

3 **Legal and regulatory framework governing prosumers in Serbia** 8

Overview 8

Core concepts and legal definitions 8

Primary legislation shaping prosumer rights and obligations 9

Secondary legislation and regulatory instruments implementing the framework 10

How the secondary instruments work together in practice 10

Grid access governance, technical requirements and administrative process 10

Metering, settlement and tariff treatment of surplus 12

Gaps, implementation issues and EU alignment 12

4 **Policy Support and Subsidy Scheme Mapping** 13

SURCE Programme Architecture and Institutional Set-Up 13

Financial and Technical Design Features 14

SURCE Scheme Database Extract 15

5 **Implementation and Accessibility** 17

Administrative procedures 17

Application and approval processes 18

Grid connection requirements 19

Transparency and information availability 19

Implications for accessibility 20

6 **Outcomes and Uptake** 22

Registered household prosumers and installed capacity 22

SURCE implementation results 23
Budget absorption and financial performance 24
Municipality-level uptake patterns 25
Subsidized prosumers and register lag 27
Key outcome findings 28

7 Barriers and Challenges 29

Administrative barriers 29
Financial barriers 29
Technical and implementation constraints 29
Social inclusion gaps 30
Key conclusion 30

8 Just Energy Transition Implications 31

9 Policy Recommendations and Roadmap 32

Priority recommendation matrix 32
Implementation roadmap 33
Monitoring dataset for future calls 33
Final recommendation logic 33

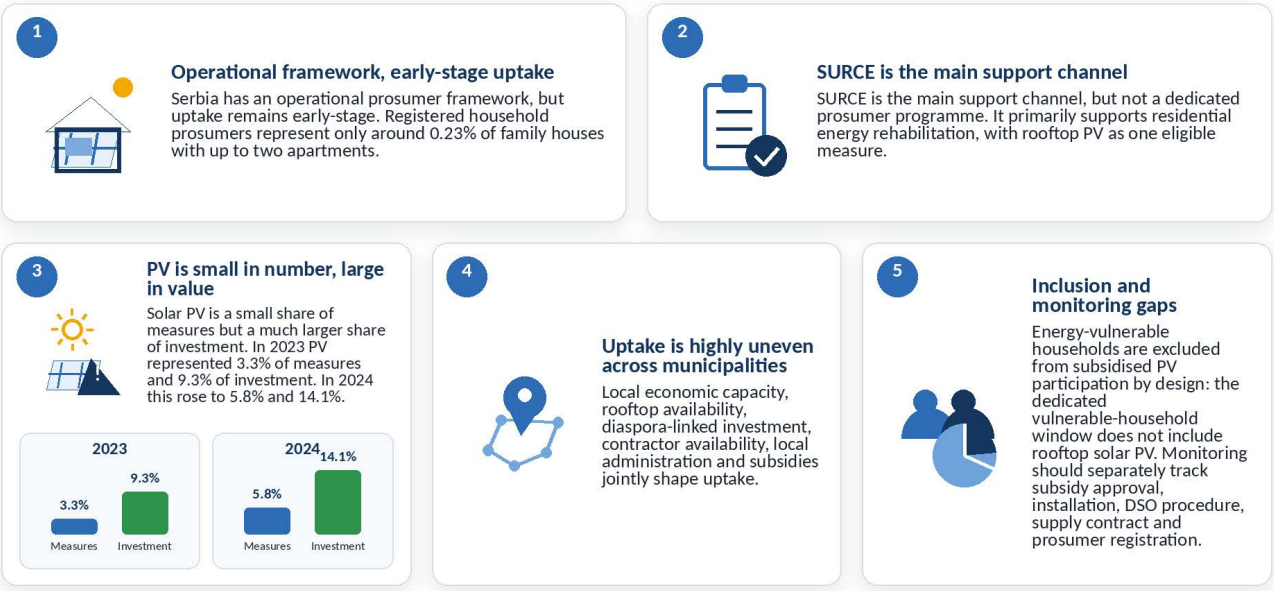
Endnotes 34

1 Executive Summary

Serbia has developed one of the more operational household prosumer frameworks in the Western Balkans. The legal basis for prosumers is in place, the connection and registration procedure for rooftop PV is defined, and public support schemes have begun to support households in becoming electricity self-producers. The evidence collected for this report shows that Serbia's prosumer transition remains at an early stage, is territorially uneven, and is still shaped by household investment capacity, housing conditions, local implementation capacity and access to information.

The main public support mechanism relevant for household rooftop PV in the **2023–2026 period is the Clean Energy and Energy Efficiency for Citizens project (SURCE).** [1] While SURCE has reached significant scale as a residential energy rehabilitation programme, rooftop PV remains a relatively small share of supported measures and a much larger share of investment value. This might be attributed to the fact that solar PV is more capital-intensive and administratively specific than other, more conventional energy efficiency measures.

The evidence does not support a simple conclusion that broad, untargeted rooftop PV grants should be expanded as the default prosumer policy instrument. Public support is most defensible where it removes clear access barriers, supports underserved municipalities, or enables participation of households that would otherwise be excluded. In particular, energy-vulnerable customers were not eligible for rooftop PV support under the dedicated vulnerable-household windows in 2024 and 2025. Inclusive prosumer participation remains unresolved.



Source: Serbia prosumer and subsidy scheme analysis

Figure 1 Key messages on prosumer uptake

Headline quantitative indicators

Table 1 Headline quantitative indicators for the analysis. Sources: Prosumer register data[2], Census 2022[3], SURCE report[4], State audit institution report[5], RES Foundation analysis, websites of Serbian LSGs.

Indicator	Value / finding	Comment
Household prosumers in disaggregated municipal dataset	5,016	Prosumer register data as of 31st March 2026.
Installed household prosumer capacity	~42.5 MW	Prosumer register data as of 31st March 2026
Household prosumer penetration	~0.23%	Share of family houses with up to two apartments
Average household prosumer system size	~8.5 kW	Typical system scale
Publicly traceable subsidized household prosumers, 2023–2024	751	Based on incomplete publicly available local and SURCE data
SURCE 2023 households supported	11,380	All measures, not only PV
SURCE 2023 implemented measures	13,660	All energy rehabilitation measures
Solar PV share in supported measures, 2023 / 2024	3.3% / 5.8%	Measure-count share
Solar PV share in investment value, 2023 / 2024	9.3% / 14.1%	Confirms higher cost intensity
Financial implementation rate of SURCE 2023 call	90.4%	Ministry disbursement vs effective contracted value
Household contribution in 2023 tripartite contracts	~55%	Strong leverage, but affordability barrier
Energy-vulnerable households with access to PV support	No	PV excluded from dedicated vulnerable-customer window
Knjaževac 2025 PV subsidy pipeline	38 systems	Equivalent to 59% of registered household prosumer stock at 31st March 2026

Priority recommendations

Table 2 Priority recommendations

Area	Recommendation	Rationale
Subsidy policy	Avoid treating broad untargeted PV grants as the default policy response; assess public support against additionality, cost per kW, affordability and distributional effects.	Subsidies may accelerate uptake but do not automatically ensure equitable access.
Social inclusion	Develop a dedicated inclusive prosumer pathway for energy-vulnerable households, using 100% support, on-bill financing, public-hosted PV, collective self-consumption or energy community models.	Vulnerable households were excluded from PV support under the dedicated 2024 and 2025 support windows.
Social inclusion	Address property-legality and ownership barriers for vulnerable households through alternative delivery models, technical assistance, or public/collective PV schemes.	Property legality, while reasonable precondition, stands as prohibitive obstacle for mitigation of energy poverty adverse effects.
Tax treatment	Assess VAT exemption or similar low-administration fiscal measures as an alternative or complement to grant schemes.	VAT exemption may reduce transaction costs, but fiscal and distributional effects should be assessed.
Monitoring	Track PV support through all stages: application, approval, contract, installation, DSO procedure, metering, supply contract and registration. Publish monitoring data in reports by the regulator.	Subsidy data and prosumer register data measure different stages and can diverge significantly.
Transparency	Publish anonymized, machine-readable data on subsidy outputs and PV implementation.	Current data are fragmented and do not allow full assessment of implementation performance.
Targeting	Use municipality-level uptake indicators to prioritize low-penetration areas.	Public support should address territorial disparities, not only subsidize demand where uptake is already strong.
Information channels	Test targeted outreach in municipalities with strong diaspora links and high private investment potential.	Diaspora may contribute investment capacity and transfer of practices.

Limitations

This analysis combines legal and regulatory review, subsidy scheme documentation, SURCE implementation and financial data[6], State Audit Institution findings[7], RES Foundation monitoring[8] and a municipality-level prosumer database constructed for this study. Public data on subsidy beneficiaries are incomplete and uneven across local self-governments. The prosumer register[9] reflects completed and registered installations, while recent subsidy calls may create a pipeline of future registrations not yet visible by the cut-off date; these indicators are therefore treated separately.

2 Introduction and Scope

Objectives and research questions

Serbia has introduced a legal and regulatory framework that enables households to become electricity prosumers by installing rooftop photovoltaic systems, consuming part of the electricity they produce and delivering surplus electricity to the grid. This development is taking place in a wider regional context of EU acquis transposition, electricity market reform and gradual changes in support mechanisms for distributed renewable energy.

The next phase of prosumer development will not be determined only by the existence of legal rights or subsidies. It will increasingly depend on the economic and regulatory answers to several practical questions: what is the value of a kilowatt-hour produced by a household rooftop PV system; what is the value of avoided or shifted consumption; how much does it cost to build, connect and operate a small rooftop plant; and how do subsidy schemes affect who can participate in this transition.

These questions are becoming more important as net metering is gradually being phased out or redesigned across the region, while new market concepts such as energy sharing, dynamic electricity price contracts and demand response enter national legal frameworks. In this changing environment, prosumer policies need to be assessed not only by the number of installations they generate, but also by their accessibility, distributional effects, implementation performance and contribution to a broader bottom-up energy transition.

Serbia's National Energy and Climate Plan (NECP) provides the strategic policy framework within which household prosumers, rooftop PV support and distributed renewable energy should be assessed. The NECP does not treat prosumers only as isolated household investments, but as part of the broader 2030 transition agenda: increasing renewable energy deployment, improving energy efficiency in buildings, reducing final energy demand, modernizing the electricity system and enabling more active participation of consumers. For this report, the NECP is therefore used as a strategic benchmark: subsidy schemes and prosumer regulation are assessed not only by the number of supported installations, but also by whether they contribute to wider policy objectives, including renewable energy uptake, consumer participation, affordability, transparency and just transition.

The purpose of this report is to assess Serbia's household prosumer framework and subsidy schemes, with a focus on household rooftop solar PV. The report examines how the legal and regulatory framework functions, how public support schemes have been designed and implemented, what available data show about uptake, and what barriers remain for wider and more equitable participation.

The analysis is guided by the following research questions:

- How is the household prosumer framework defined and regulated in Serbia?
- Which subsidy schemes have supported household rooftop PV in the 2023-2026 period, and how are they designed?
- What do available data show about prosumer uptake, installed capacity and municipal distribution?
- What role have subsidies played in accelerating uptake, and what are their limitations?
- What administrative, financial, technical and information barriers affect participation?
- To what extent do current schemes enable or exclude vulnerable households from prosumer participation?
- What changes would improve the effectiveness, accessibility and transparency of future prosumer support?

Scope of analysis

The report focuses on **household prosumers in Serbia**, with particular attention to rooftop solar PV systems installed for self-consumption and surplus delivery to the grid. For the purposes of this report, the term "prosumer" is used in a practical policy sense to refer primarily to household electricity consumers who also produce electricity from rooftop PV systems and are registered as prosumers under Serbian law.

The core period of analysis is **2023-2026**, reflecting the implementation period covered by the assignment and the period in which subsidy schemes and prosumer uptake became more substantial. Where useful for context, earlier developments are briefly mentioned, particularly the introduction of the prosumer framework and the first public support schemes.

The report covers:

- the legal and regulatory framework for household prosumers;
- connection, metering, registration and settlement arrangements;
- public subsidy scheme relevant for rooftop PV implemented under the framework of the SURCE project through local self-government calls;
- available implementation results for 2023 and 2024 calls;
- available 2025 subsidy results where they indicate a future prosumer pipeline;
- municipality-level prosumer uptake based on the prosumer register;
- selected explanatory variables, including housing structure, local economic strength, diaspora-related investment capacity and subsidy exposure;
- accessibility and equity implications, including the position of energy-vulnerable households.

The report does not attempt to provide a full economic cost-benefit analysis of rooftop PV, nor does it evaluate the climate or emission-reduction claims of energy efficiency programmes. Emission-reduction estimates are outside the scope of this analysis. The focus is instead on legal, institutional, financial and implementation conditions for household prosumer development.

The report also distinguishes carefully between different types of evidence. The prosumer register is treated as a credible source for formally registered prosumer stock up to the cut-off date of **31 March 2026**. Subsidy results for 2025, where available, are treated as a pipeline since subsidised households have not yet completed contracting, installation, DSO procedures, supply contracting and formal registration.

A further limitation relates to transparency of subsidy data. Publicly available information on local subsidy implementation is incomplete and uneven across municipalities for 2024 and 2025 calls. For this reason, the report uses traceable subsidy data cautiously and avoids treating the absence of published data as proof that support was not provided.

Structure of the report

The report moves from the legal and regulatory framework to the design of SURCE as the main support scheme, then to implementation, uptake, barriers, just transition implications and recommendations. The evidence logic combines primary legal and programme documents with SURCE reporting, State Audit Institution findings, RES Foundation monitoring and municipality-level prosumer data prepared for this study.

3 Legal and regulatory framework governing prosumers in Serbia

Overview

Serbia's prosumer framework rests on two main legislative pillars: the Energy Law, as the system and electricity-market framework law, and the Law on the Use of Renewable Energy Sources, as the renewables-specific lex specialis. The latter introduced the dedicated prosumer category kupac-proizvođač (buyer-producer, hereinafter: prosumer): a final customer who connects a renewable electricity generator to internal installations to cover own consumption and may export surplus to the grid. [10]

Household prosumers have operated under net metering (neto merenje), while other customer categories may use net billing / net settlement (neto obračun). The key implementing act -the Government Decree on criteria, conditions and settlement between prosumers and suppliers -sets an annual settlement cycle (1 April–31 March), allows intra-year carryover of surplus, and provides that any year-end surplus is transferred to the supplier without compensation. [11]

The consolidated Energy Law provides that net metering applies no later than 31 December 2026 and moves new household prosumers to net billing from 1 January 2027, with grandfathering linked to submission of a metering adaptation request by 31 December 2026. [12] This makes the future rules on export valuation, contract transparency and consumer protection increasingly important.

Key actors in the framework are the distribution system operator Elektrodistribucija Srbije (EDS), suppliers including the guaranteed supplier for households and small customers, the transmission system operator EMS for transmission-connected cases, the regulator AERS, and relevant ministries and agencies. Operators have obligations to prioritise acceptance of prosumer injections subject to system security, install metering capable of separately measuring import and export, and maintain the prosumer register. [13]

Core concepts and legal definitions

The renewables law defines a prosumer (kupac-proizvođač) as a final customer that connects its own renewable generator to internal installations to cover own consumption, with the right to export surplus to the transmission, distribution or closed distribution system. [14] Prosumers may generate, store and export electricity, including via an aggregator, but cannot combine this status with RES support schemes such as feed-in tariffs or market premiums and cannot obtain guarantees of origin as prosumers. [15]

Capacity limits are built into the legal framework. Installed capacity cannot exceed the approved connection capacity of the final customer. Additional caps include 10.8 kW for households and 150 kW for non-household prosumers, with special rules for non-three-phase connections.

Residential housing associations (stambena zajednica) may also exercise prosumer rights for shared installations on common parts of the building, with specific metering options. The production facility must have a separate metering point, arranged in line with the decree and DSO rules. Existing metering points for common consumption and for individual participating members remain unchanged. Members of the housing association who jointly build the production facility must regulate their mutual relations through a contract. This contract must include the plan for allocating produced electricity among members and the name of the association manager or professional manager. The contract is submitted to the supplier for billing purposes, and the manager must notify the supplier of any changes.

Because all electricity produced by the facility is injected into the grid, on-site self-consumption is not possible. Consumption from the grid therefore remains unchanged, meaning that network charges are unaffected by the volume of electricity generated. [16]

Secondary legislation distinguishes net metering from net billing. Net metering settles the difference between electricity exported to and imported from the system, while net billing settles the difference between the value of imported electricity and the value of exported electricity. This distinction directly affects incentives, billing transparency and possible tax treatment once exports become monetised. [17]

The Energy Law also aligns Serbia with broader EU electricity-market concepts, including active customers and citizen energy communities. Active customers are recognised as having the right not to face disproportionate or discriminatory technical, administrative requirements or charges. Citizen energy communities are defined as legal persons based on open and voluntary participation and community-benefit objectives. [18] [19]

Separately, the renewables law defines renewable energy communities as legal persons controlled by members located near the renewable energy installation and focused primarily on environmental, economic or social benefits. Serbia therefore has a two-track community-energy landscape: renewable energy communities under the renewables law and citizen energy communities under the Energy Law. The Energy Law provides common market-operation provisions for both categories, but practical implementation still depends on detailed secondary rules and DSO procedures. Secondary legislation is evolving but still does provide for the complete framework. There are no legal deadlines for completion of secondary legislation. [20]

Primary legislation shaping prosumer rights and obligations

Serbia does not have a standalone electricity market law; instead, the Energy Law functions as the framework legal act governing energy activities, system operators and the organisation of electricity markets.

The Energy Law confirms that electricity generation for own needs does not require a licence, even where surplus electricity is exported to the system. [21] For typical rooftop PV installations (also for ground-based plants below 10.8 kW capacity) this removes a major administrative barrier, while construction-related requirements depend on the general construction-permitting regime and simplified procedures for works that do not require a full building permit, nor any other construction procedure for installations below 10.8 kW capacity. [22]

Because prosumer status relies on metering data and registry entries, the Energy Law's confidentiality rules for operators and Serbia's Personal Data Protection Law provide the main privacy and data-handling framework for DSO, TSO and supplier processing of prosumer data. [23] [24]

The Law on the Use of Renewable Energy Sources is the key primary legal source for prosumers. It embeds the prosumer concept, sets capacity limits, and requires suppliers to offer household and small-customer prosumers a full supply contract with net metering or net billing. It also fixes the annual settlement endpoint on 1 April and provides that a prosumer has no claim for electricity delivered in excess of imported electricity over that period. On the system side, it requires operators to prioritise injections subject to system security and to install meters that separately record imports and exports. [25] [26]

The renewables law also recognises renewable energy communities and their rights to produce, consume, store and sell renewable energy. However, practical deployment of community models still depends on secondary rules, metering arrangements, data exchange and DSO implementation procedures. [27]

Secondary legislation and regulatory instruments implementing the framework

Serbia's prosumer regime is made operational primarily through Government decrees and through grid and market rulebooks approved or overseen by AERS. The most relevant instruments are summarised below.

Table 3 Main legal instruments governing prosumer framework in Serbia

Instrument	Year	Key prosumer relevance
Energy Law (consolidated)	2014–2024	Licensing and permit exemptions for own-use generation; active customer and citizen energy community concepts; transition from net metering and shift of new households to net billing from 2027.
Law on the Use of Renewable Energy Sources	2021–2023	Defines prosumer; capacity caps; supplier obligation to offer net metering/net billing; annual settlement; priority take-off; metering and registry duties; renewable energy communities.
Decree on settlement between prosumers and suppliers	2022	Defines net metering/net billing; annual settlement (1 April–31 March); carryover; year-end surplus without compensation; charging/tax basis; data exchange rules.
Decree on conditions of delivery and supply of electricity	2023–2025	Connection approvals and supply contracting; projected consumption/production; metering adaptation evidence; billing and complaint rules.
Distribution Grid Code and EDS procedures	various	Technical connection requirements, metering point adaptation, bidirectional metering, registry entry and operational steps for household and larger prosumers.

How the secondary instruments work together in practice

Two decrees are particularly decisive for day-to-day prosumer functionality. The prosumer–supplier settlement Decree specifies the annual settlement cycle and makes the no-compensation surplus rule operational: where total exported electricity exceeds total imported net electricity at the end of the settlement period, the determined surplus is transferred to the supplier without remuneration.[28] It also defines the treatment of taxes, excise duties and other charges under net metering by linking them to the calculated consumed electricity.[29]

The electricity delivery and supply Decree integrates prosumers into the formal connection and supply-contracting architecture. Connection approval requests must include projected annual consumption and, for prosumers, projected annual production.[30] The decree also simplifies the process by excluding prosumer production objects from the connection-study requirement that otherwise applies to distribution-connected generation.[31] It further links prosumer status to metering compliance by requiring the DSO's notice confirming metering point adaptation as part of the documentation for the full supply contract.[32]

Grid access governance, technical requirements and administrative process

The renewables law creates direct obligations for DSOs and TSOs toward prosumers. Operators must, subject to system security, prioritise taking electricity delivered by prosumers and must install meters enabling separate import/export measurement at the point of delivery.[33] Operators must also establish and maintain a prosumer register containing specified fields such as identity, type of prosumer, technology, location and approved capacities.[34]

For household prosumers, the connection and registration process is legally relatively simple and largely non-discretionary. The DSO does not decide whether a household may become a prosumer beyond checking technical correctness of the installation, conformity of equipment, metering readiness and compliance with applicable rules. In practice, delays may occur, but the main issue is implementation capacity and respect of legal timelines[a] rather than broad DSO discretion.

EDS sets out a simplified pathway for households with direct metering and small-scale installations. To acquire prosumer status, the customer must build a generating facility not exceeding the approved connection capacity (and not exceeding 10.8 KW threshold for household prosumers and 150 kW for legal entities), adapt the metering point, and conclude a full supply contract with net metering or net billing. Status is acquired through entry in the prosumer register.[35]

Metering adaptation is procedurally regulated. The customer or authorised party submits a request to the relevant distribution area; EDS secures a de-energised condition, removes seals and the existing meter; a certified contractor performs adaptation works and issues conformity documentation; EDS then inspects, reseals and restores supply.[36] Exporting electricity to the distribution system before acquiring prosumer status, meaning the relevant contract and registry entry, is not allowed and may lead to supply suspension under the Energy Law framework.[37]

For larger installations, especially non-household installations in the 10.8–150 kW range described by EDS procedures, the process is more complex. It may include a separate connection document, design documentation, connection approval, a connection service contract, construction, fulfilment of connection obligations, signing of the full supply contract and trial operation before permanent operation.[38]

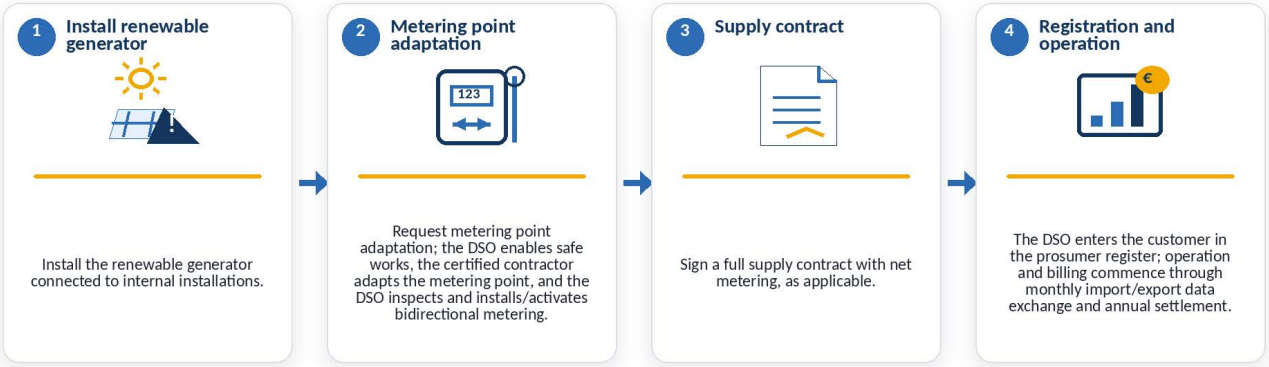


Figure 2 Typical household prosumer process flow

[a]There is legal deadline for connection of prosumer by the DSO once the contract with the supplier is made. However, DSO does not have a legal deadline to adapt metering point which i prerequisite for conclusion of the contract with the supplier

Metering, settlement and tariff treatment of surplus

Under the settlement Decree, the prosumer/supplier settlement period is one year, from 1 April to 31 March. Under net metering, surplus electricity can be carried forward between billing periods within the annual window. Any remaining year-end surplus is transferred to the supplier without compensation.[39]

Economically, this makes household net metering primarily a self-consumption optimisation tool. It incentivises sizing generation close to annual consumption and discourages systematic overgeneration, because year-end surplus has zero value.[40]

The Decree preserves fiscal and network charging under net metering. Suppliers calculate applicable taxes, fees and network access charges based on the calculated consumed electricity and relevant tariff methodologies and price decisions. Payment of network charges applies to the whole amount of electricity supplied from the grid[41]

The legal framework now anticipates wider use of net billing. Net billing already applies broadly outside household/residential-community net metering, and for many non-household cases the Decree allows mutual claims and valuation terms to be freely contracted. This creates flexibility, but also raises transparency and bargaining-power issues for smaller prosumers.[42]

The Energy Law's transitional provisions drive the shift: net metering applies no later than 31 December 2026, while new household prosumers enter via net billing from 1 January 2027, with grandfathering tied to submitting a metering adaptation request by 31 December 2026. Introduction of net billing increases the importance of transparent export valuation and consumer-facing contract safeguards.[43]

Gaps, implementation issues and EU alignment

Serbia has transposed key Clean Energy Package concepts relevant for distributed energy: prosumers, active customers, renewable energy communities and citizen energy communities. As an Energy Community Contracting Party, Serbia has therefore made significant progress in formal alignment. Functional alignment, however, depends on implementation -particularly export valuation, consumer protection under net billing, metering reliability and operational rules for collective models.[44]

The key remaining issues are: (1) year-end surplus under net metering has zero value; (2) strict sequencing means that export before contract and registry entry is prohibited; (3) household net billing from 2027 requires transparent export valuation and comparable contract terms; (4) community-energy concepts exist in law but require detailed operational rules on numerous aspects; and (5) clearer tax, VAT and accounting guidance is needed as exports become monetised.[45] [46] [47]

4 Policy Support and Subsidy Scheme Mapping

This chapter describes SURCE - Clean Energy and Energy Efficiency for Citizens, the main public support scheme rel-evant for household rooftop PV and prosumer development in Serbia in the 2023–2026 period. Earlier public calls, including the first 2021 support for household solar panels implemented through local self-governments, are relevant as background, but the present analysis focuses on SURCE because it is the principal ongoing programme with available implementation data, financial reporting, and explicit inclusion of rooftop solar PV.

SURCE is primarily a residential energy rehabilitation programme designed to support energy efficiency, sustainable heating and rooftop solar PV in participating local self-government units. Its relevance for prosumer policy comes from the inclusion of a specific measure for the **installation of solar panels for electricity production for own needs**, includ-ing accompanying installations, bidirectional metering and technical documentation required for connection to the distribution system. The programme objective is explicitly linked to increasing uptake of energy efficiency, sustainable heating and rooftop solar PV by households in participating local self-government units.

The chapter therefore treats SURCE as a **hybrid household energy transition scheme**: it supports conventional energy efficiency measures, heating-system replacement, and rooftop PV. For prosumer analysis, the central question is how well this broad programme design enables households to become registered prosumers.

SURCE Programme Architecture and Institutional Set-Up

SURCE is implemented through a **multi-level delivery m odel**. The Ministry of Mining and Energy defines the pro-gramme framework, allocates funds and signs agreements with local self-governments. Local self-governments then organize implementation at local l evel: they select eligible contractors, publish public calls for h ouseholds, assess applications, sign tripartite contracts, verify implementation and process payments.

This structure allows the programme to reach a large number of municipalities, but it also makes implementation dependent on local administrative, financial and technical capacity. The Ministry provides the framework and funding, but the actual interface with citizens is primarily local.

Table 4 Institutional architecture of SURCE

Actor	Role in the scheme	Relevance for rooftop PV / prosumers
Ministry of Mining and Energy	Defines programme framework, allocates funds, signs agreements with local self-governments, oversees implementation	Sets the overall framework under which PV support is available
Local self-governments	Apply for funds, provide co-financing, publish contractor and citizen calls, verify works	Determine actual local accessibility, timing and implementation quality
Households	Apply for support, select approved contractor, co-finance investment	Potential future prosumers if PV is installed and registration completed
Contractors	Implement measures from local rosters of approved economic operators	Install PV systems, prepare documentation and support technical compliance
DSO / supplier	Not subsidy administrators, but necessary for PV systems to become operational prosumers	Metering adaptation, bidirectional meter activation, supply contract and register entry
World Bank financing framework	Supports programme implementation and financing	Enables scale-up of household energy rehabilitation support

The programme includes a **regular household support window**, where rooftop PV is available, and a separate **energy-vulnerable household window**, where higher subsidy intensity is provided but rooftop PV is not included among eligible measures. This distinction is important for the later discussion of social inclusion and just energy transition.

NECP relevance for household prosumer support in Serbia

Serbia's NECP creates an important planning context for household rooftop PV and prosumer policies. Its measures related to renewable electricity, energy efficiency in households, distributed generation, consumer participation and grid modernization provide a policy basis for public support schemes such as SURCE. However, the NECP perspective also suggests that prosumer schemes should be evaluated against broader outcomes: contribution to renewable capacity, reduction of household energy demand, territorial distribution, inclusion of vulnerable households, and transparency of monitoring. This means that future support should not be assessed only through disbursed funds or number of subsidized systems, but also through indicators such as registered prosumer capacity, cost per kW, municipal uptake, beneficiary profile and contribution to NECP implementation.

The general delivery model also includes local self-government co-financing. Under the model described in RES Foundation's previous analysis [48], local self-governments apply for Ministry funding and usually need to secure co-financing[a], while citizens cover the remaining part of the investment. Selected local self-governments first establish a roster of qualified contractors and then publish calls for citizens. Support to citizens is awarded on a first-come-first-served basis and applications are submitted in person.

Financial and Technical Design Features

Regular household window

Under the regular household support window, citizens can apply for one or more measures from the programme list. The measures include building-envelope improvements, heating-system replacement, solar collectors, solar PV and technical documentation.

For rooftop PV, the relevant measure is usually described as installation of solar panels and accompanying installations for electricity production for own needs, installation of bidirectional metering equipment for measuring delivered and received electricity, and preparation of the necessary technical documentation and reports required by law for connection to the distribution system. RES Foundation's previous analysis records that citizens may receive support for this measure in the amount of **50% of total investment**, up to **420,000 RSD**, while for a package of measures that includes solar panels the subsidy may reach **65%**, up to **546,000 RSD** for this measure[b].

This design shows that the PV measure is not treated only as equipment purchase. It also includes the elements necessary for becoming a functional prosumer: technical documentation, installation of bi-directional meter and preparation of the technical report of the vendor upon completion of construction.

[a] Law on Budget for 2026 prohibits Government to ask for co-financing from the least developed local self-governments

[b] The amounts were increased for 2025/2026 calls to 440,000 RSD and 572,000 RSD respectively with unchanged upper limits for share of costs covered by subsidy.

Table 5 SURCE measure categories relevant for household energy transition [49]

Measure group	Examples of measures	Prosumer relevance
Building envelope	Windows, façade insulation, roof/ceiling insulation	Reduces consumption and improves self-consumption economics
Heating systems	Gas boiler, pellet boiler, heat pump, heating installation	Reduces energy use and changes household energy profile
Renewable thermal	Solar collectors	Renewable heat, but not prosumer status
Renewable electricity	Solar panels for electricity production	Directly relevant for household prosumers
Documentation	Technical documentation	Relevant where required for implementation and connection

Separate support for energy-vulnerable households

The programme also includes a social inclusion component. In 2023 and 2024, social inclusion top-up grants were used to reduce the co-financing burden for lower-income local self-governments. In 2024, the programme introduced a separate household-level support window for homeowners who receive energy bill discounts as energy-vulnerable customers in interested municipalities. Under that window, vulnerable households were required to finance only 10% of total investment for eligible energy efficiency measures.

However, this vulnerable-household window did **not** include solar panel installation. RES Foundation's analysis notes that solar panels were the only measure from the broader list that was left out of the vulnerable-customer call.

This is a key design feature. It means that energy-vulnerable households were offered higher subsidy intensity for certain energy rehabilitation measures but not access to subsidized rooftop PV and prosumer participation. The implications of this design choice are discussed in Chapters 7 and 8.

In 2025, vulnerable households eligible for subsidies included categories beyond vulnerable customers and all municipalities were obliged to invite vulnerable households to participate. Funding envelope for these subsidies is completely secured in the Budget of the Republic of Serbia without the co-financing requirements from the cities and municipalities [50].

Technical design of the PV measure

From a technical perspective, the PV measure is linked to the Serbian prosumer framework. A household receiving subsidy for solar panels does not automatically become a prosumer. The household still needs to complete installation, adapt the metering point, activate bidirectional metering, sign the appropriate supply contract and appear in the official prosumer register.

This distinction is important for interpretation of results. Subsidy approval, installation and formal prosumer registra-tion are different stages. The subsidy scheme co-finances the investment, but prosumer status is created only through completion of the electricity-sector procedure.

SURCE Scheme Database Extract

For the purposes of this study, SURCE was coded in the broader analytical database containing with several relevant components disaggregated by municipality including data on implemented measures from the regular household win-dow, the PV-specific measure, total number of prosumers, number of buildings with up to 2 apartments, to name a few.

Table 6 Analytical database extract: SURCE components relevant for prosumer analysis

Programme element	Period	Target group	PV eligi-ble?	Financial design	Implementa-tion level	Data availability	Analytical use
SURCE regular household support	2023	Households in participating LSGs	Yes	Generally up to 50% for individual measures; higher support for packages	Ministry + local self-governments	Implementation and financial reports available	Main evidence for programme design and uptake
SURCE regular household support	2024	Households in participating LSGs	Yes	Similar structure; PV share increased compared with 2023	Ministry + local self-governments	State Audit Institution findings; partial local data collected also by the RES foundation	Shows programme continuation and PV growth
Energy-vulnerable household window	2024–2025	Energy-vulnerable customers / homeowners	No	Higher support intensity, household contribution around 10%	Interested local self-governments in 2024 and all participating local self-governments in 2025	Partial data; RES monitoring	Key for equity analysis; PV excluded
SURCE regular household support	2025–2026	Households in selected municipalities	Yes	Local calls under SURCE framework	Local self-governments	Uneven local publication	Used as pipeline indicator where register data lag behind

2025 local calls results are treated as forward-looking pipeline data where they are available, not as confirmed registered prosumers.

5 Implementation and Accessibility

This chapter examines how the SURCE scheme functions in practice and how accessible it is for households seeking support for rooftop PV. The analysis focuses on four issues: administrative procedures, application and approval processes, grid connection requirements, and transparency of information.

For rooftop PV, implementation involves two linked but distinct processes. The first is the subsidy process, managed through the Ministry of Mining and Energy and local self-governments. The second is the prosumer registration process, which involves installation, metering adaptation, supplier contracting and entry into the official register. A household may be approved for subsidy support but still not appear in the prosumer register until all technical and contractual steps are completed.

Administrative procedures

SURCE is implemented through a decentralized model. The Ministry of Mining and Energy, as stipulated, defines the programme framework and allocates funds, while local self-governments manage citizen-facing procedures. This includes publication of local calls, selection of contractors, collection and assessment of household applications, contracting, verification of completed works and payment processing.

The standard implementation chain can be summarized as follows:

STEP	MAIN RESPONSIBLE ACTOR	DESCRIPTION
1 STEP 1	Ministry / local self-government	Agreement on programme participation and allocation of funds
2 STEP 2	Local self-government	Public call for contractors
3 STEP 3	Local self-government	Public call for households
4 STEP 4	Local commission	Verification and ranking of applications
5 STEP 5	Household / municipality / contractor	Signing of tripartite contract
6 STEP 6	Contractor	Implementation of works
7 STEP 7	Local commission	Field verification and confirmation of completed works
8 STEP 8	Municipality / Ministry	Payment of subsidy share
9 STEP 9	Household / DSO / supplier	For PV: metering, supply contract and prosumer registration

Figure 3 Roles of actors in SURCE implementation chain

This model enables broad territorial coverage, but it also makes implementation dependent on the capacity of local administrations. Local self-governments must have sufficient staff, functioning commissions, budgetary capacity, contractor availability and administrative c ontinuity. Where these conditions are weak, implementation slows down or does not take place.

The State Audit Institution identified several recurring implementation issues: late publication of calls, limited local commission capacity, insufficient contractor availability, delays in works, and delays in payments to local self-governments. The audit also found that some works were delayed by up to two years, indicating that implementation capacity is a central determinant of scheme performance[51].

The 2024 cycle confirms the importance of local capacity. Financing was approved for 137 local self-governments, but 130 published public calls for citizens, while seven did not. In addition, 99 local self-governments signed annexes extending implementation deadlines to 30 September 2027. This shows that formal participation in the scheme does not automatically translate into timely delivery.

Application and approval processes

Households apply through local public calls. Although the general programme framework is national, the practical application process is local. This creates variation in timing, communication, documentation requirements and implementation practice.

Typical household application requirements include:

- proof of ownership or legal basis for using the building;
- proof that the building is legally constructed or eligible under the call;
- identity documents;
- contractor offer from an approved contractor list;
- evidence related to the selected measure;
- for PV, technical documentation and later documentation needed for connection and registration.

The two-stage contractor-household model is intended to ensure implementation quality. Local self-governments first select eligible contractors, after which households may apply using offers from those contractors. This reduces some risks for households, but it can also create bottlenecks where there are too few approved contractors or where contractors lack capacity to implement all approved measures.

For rooftop PV, the application and approval process is more complex than for many other measures. A household must not only be approved under the subsidy scheme, but must also complete installation, metering adaptation, supply contracting and prosumer registration. Therefore, the subsidy process and the electricity-sector process should not be treated as identical.

This distinction is important for interpreting 2025 local call results. In some municipalities, final beneficiary lists for rooftop PV are already available, but supported households do not yet appear in the official prosumer register. Knjaževac illustrates this point. Applications for the 2025 local call were submitted by 22 December 2025, and the final list of beneficiaries was adopted on 25 February 2026. The list included 38 supported solar PV systems, but none of these beneficiaries appeared in the prosumer register by 14 May 2026. This indicates a visible lag between subsidy selection and formal registration, although available public data do not allow identification of the exact stage at which the delay occurs.

Public-call duration also affects accessibility. Earlier implementation experience showed that some local calls were open only for a short period as large number of interested applicants queued at local offices well in advance of the official opening, since applicants are awarded on a first come first served basis The average duration was longer, but very short calls created access problems for citizens who were not well informed or who needed more time to prepare documentation. Later procedural improvements requiring advance announcement of calls can therefore be understood as an accessibility improvement.

Grid connection requirements

For household rooftop PV, the grid connection and registration procedure is legally relatively simple and largely non-discretionary. The distribution system operator does not decide whether a household should become a prosumer on policy or economic grounds. Its role is technical: to check whether the installation is technically correct, whether equipment conforms to applicable requirements, whether metering conditions are met, and whether the installation can be safely connected.

The typical sequence for household PV is:

- the household installs rooftop PV connected to its internal installation;
- the household applies for metering point adaptation;
- the DSO de-energises the metering point and removes seals / existing meter where needed;
- the certified contractor adapts the metering point and provides conformity documentation;
- the DSO inspects the metering point;
- bidirectional metering is installed or activated;
- the household signs the appropriate supply contract;
- the DSO registers the household as a prosumer.

This process is not legally complex in comparison with conventional power-plant permitting. However, practical delays may occur. The issue is less about DSO discretion and more about implementation capacity, workload, staffing and timely observance of legal deadlines.

This distinction matters for policy recommendations. The connection procedure should not necessarily be redesigned from scratch; rather, implementation discipline, service standards, staffing and monitoring of deadlines need improvement. For subsidy-supported PV, the main need is better coordination between local subsidy implementation and the electricity-sector registration process.

Transparency and information availability

Transparency remains one of the main challenges for analysing implementation and accessibility. Information relevant for the scheme is spread across several sources:

- official SURCE project documentation;
- Ministry communications;
- local government public calls and beneficiary lists;
- financial and implementation reports;
- State Audit Institution findings;
- RES Foundation monitoring;
- official prosumer register.

These sources provide valuable evidence, but they are not consolidated into one public, machine-readable monitoring database. Local governments differ significantly in how much information they publish, how accessible it is, and whether beneficiary lists remain available after calls are completed.

For rooftop PV, this creates a specific analytical problem. A complete monitoring system would need to distinguish between:

Table 8 Proposed stages for monitoring of SURCE implementation of PV related subsidies.

Stage	Why it matters
Application submitted	Shows demand and outreach effectiveness
Application approved	Shows eligibility and selection
Contract signed	Shows whether approval moved into implementation
PV system installed	Shows physical completion
DSO procedure completed	Shows electricity-sector implementation
Bidirectional meter activated	Shows technical readiness
Supply contract signed	Shows market/contractual readiness
Prosumer registered	Shows formal prosumer status

At present, these stages are not systematically reported in public sources. As a result, it is difficult to know whether delays occur at the municipal, contractor, DSO, supplier or registration stage.

For this study, the lack of consolidated data was partly addressed through construction of a municipality-level database combining register data, subsidy data, Census housing data and publicly traceable local information. However, this cannot substitute for a standardized public monitoring system.

Implications for accessibility

The implementation model has both strengths and weaknesses.

Its main strengths are:

- broad national reach through local self-governments;
- co-financing from multiple public levels;
- use of approved contractors;
- integration of PV into a wider household energy rehabilitation scheme;
- potential to mobilize private household investment.

Its main weaknesses are:

- dependence on local administrative capacity;
- uneven publication of information;
- variable call timing and documentation requirements;
- limited ability to track implementation stages;
- possible delays between subsidy approval and prosumer registration;
- difficulty for households with weaker administrative, financial or informational capacity.

For rooftop PV, accessibility is shaped by more than the subsidy rate. Households need information, documentation, contractor availability, technical compliance, ability to co-finance, and successful completion of the electricity-sector procedure. This makes rooftop PV more demanding than standard energy efficiency measures.

The conclusion for the following chapters is therefore clear: implementation performance cannot be assessed only through the number of approved subsidies. It must be assessed through the full chain from application to registered prosumer status.

6 Outcomes and Uptake

This chapter presents the main empirical findings on household prosumer uptake in Serbia. It combines three different evidence layers: the official prosumer register, SURCE implementation and financial reporting, and the municipality-level database prepared for this study. These sources measure different stages of the prosumer pathway and therefore need to be interpreted separately.

The **prosumer register** captures households that have completed installation, metering adaptation, supplier contracting and formal registration. **SURCE implementation data** capture measures supported through the subsidy scheme, including solar PV. **Local subsidy results for 2025**, where available, capture a pipeline of future prosumers, but not necessarily systems already registered as prosumers.

This distinction is central to the analysis: a household can be approved for a rooftop PV subsidy before it appears in the official prosumer register.

Registered household prosumers and installed capacity

The municipality-level database prepared for this study uses the official prosumer register as of **31 March 2026** as the cut-off date for analysing registered household prosumers. For municipality-level analysis, the aggregate City of Belgrade row was excluded where individual Belgrade city municipalities were included, in order to avoid double counting.

Using this disaggregated dataset, Serbia had approximately **5,016 registered household prosumers**, with a combined installed capacity of around **42.5 MW**.

The database uses the number of **family houses with up to two apartments** as the main denominator for household rooftop PV potential. This is a more relevant proxy than the total number of households, because individual and small residential buildings are more likely to have technically usable roof space and simpler ownership arrangements than multi-apartment buildings.

Table 9 Headline register-based indicators. **Source: RES Foundation analysis based on the official prosumer register and Census 2022 housing data.**

Indicator	Value
Registered household prosumers	5,016
Installed household prosumer capacity	~42.5 MW
Family houses with up to two apartments	~2.20 million
Household prosumer penetration	~0.23%
Average household prosumer system size	~8.5 kW

The results show that Serbia has moved beyond the pilot phase, but household prosumer uptake remains limited compared with the size of the potential rooftop market. The penetration rate of approximately **0.23%** indicates that household prosumers are still an early-stage phenomenon.

The average system size of around **8.5 kW** suggests that many household systems are installed close to the upper range of typical residential PV configurations. This is relevant for future policy because the economics of such systems

will increasingly depend on net billing rules, self-consumption levels, surplus valuation and future electricity price structures.

SURCE implementation results

The most complete implementation evidence comes from the SURCE Public Call 2/2023 reports. These reports show that SURCE achieved significant scale as a residential energy rehabilitation programme.

Under the 2023 call, agreements were signed with **131 local self-governments**, while final implementation reports were submitted for **122 local s elf-governments**. The programme supported **11,380 households** and **13,660 implemented measures**.

Table 10 SURCE Public Call 2/2023: main implementation indicators[52]

Indicator	Result
Local self-governments signing agreements	131
Local self-governments with final reports	122
Supported households	11,380
Implemented measures	13,660
Renovated family houses	7,485
Renovated semi-detached / terraced houses	243
Renovated apartments	3,652
Renovated living area	1,238,877 m^2
Household members affected	35,274

These figures show that SURCE is a large-scale residential programme, not a small pi lot. However, the majority of implemented measures were conventional energy efficiency and heating-related meas ures. Rooftop solar PV represented a relatively small share of the total number of interventions.

Solar PV within SURCE

Solar PV is included in SURCE as **Measure 9 – installation of solar panels for electricity production for own consumption**. Under Public Call 2/2023, the implementation report recorded **412 solar panel measures** and reported **3.6 MW of installed solar capacity**.

Table 11 SURCE 2023: distribution of implemented measures[53]

Measure	Implemented measures	Share
Window replacement	7,666	56%
Gas boiler replacement	2,012	15%
Heating installation	1,031	8%
Technical documentation	680	5%

Façade wall insulation	634	5%
Heat pumps	553	4%
Pellet boilers	428	3%
Solar panels	**412**	**3%**
Roof / ceiling insulation	161	1%
Solar collectors	83	1%
Total	**13,660**	**100%**

The relatively low share of solar PV in the number of measures should not be interpreted as a lack of relevance. Solar PV is more expensive and technically more complex than most standard measures. This becomes visible when the number of PV measures is compared with the share of PV in total investment value.

The State Audit Institution's comparison of 2023 and 2024 calls shows that solar PV accounted for:

- **3.3% of supported measures** and **9.3% of investment value** in 2023;
- **5.8% of supported measures** and **14.1% of investment value** in 2024.

Table 12 Solar PV share in number of measures and investment value. Source: State Audit Institution, performance audit of energy rehabilitation measures.

Indicator	2023	2024
Solar PV share in number of supported measures	3.3%	5.8%
Solar PV share in investment value	9.3%	14.1%

This is one of the most important findings of the scheme analysis. It shows that solar PV remains a relatively small share of interventions, but a much larger share of investment. In other words, rooftop PV is not comparable to window replacement or heating installation from the perspective of household affordability, subsidy budget planning or implementation complexity.

The increase in both number share and investment share from 2023 to 2024 suggests growing interest in rooftop PV. However, it also confirms that PV support requires specific programme design, monitoring and implementation support.

Budget absorption and financial performance

SURCE Public Call 2/2023 also shows strong financial absorption. According to the financial report, the Ministry initially signed contracts with local self-governments worth approximately **EUR 9.7 million**. After contract terminations, the effective contracted value was approximately **EUR 9.4 million**. Actual Ministry disbursement reached around **EUR 8.5 million**, corresponding to a financial implementation rate of **90.4%**.

Additional funding was provided through annexes for **37 municipalities**, with total additional allocations of approximately **EUR 2.5 million**. Household contributions represented approximately **55% of the total value of tripartite contracts**[a].

[a] EUR 11.5 million as estimated by the authors

Table 13 Financial performance of SURCE Public Call 2/2023. Source: SURCE Financial Report for Public Call 2/2023.

Indicator	Result
Initial Ministry contracts	~EUR 9.7 million
Effective contracted value	~EUR 9.4 million
Ministry disbursement	~EUR 8.5 million
Financial implementation rate	90.4%
Municipalities receiving additional funding	37
Additional annex funding	~EUR 2.5 million
Household contribution in tripartite contracts	~55%

The high financial implementation rate shows that the scheme can absorb public funding at scale. The significant household contribution confirms a strong leverage effect: public subsidies mobilized substantial private investment.

However, this leverage effect also has an accessibility implication. If households finance more than half of the in-vestment value, support will naturally be more accessible to households with savings, borrowing capacity or external financial support. This is particularly relevant for rooftop PV, which is more capital-intensive than many other eligible measures.

Programme price of supported solar PV

Using SURCE data, the average price of supported solar PV systems under the 2023 call can be calculated at approx-imately **107,816 RSD/kW**. This figure should be interpreted as a programme-level average and not as a project-level price benchmark, because publicly available reporting does not provide all technical details by system, equipment type or contractor.

Nevertheless, the calculated value is useful for monitoring purposes. It allows comparison with subsidy caps, market references and future calls. It also shows why PV support requires separate cost monitoring: a small number of PV measures can represent a much larger share of public and household investment.

Future reporting should therefore publish cost-per-kW data for supported PV systems by municipality, contractor and system-size band, in anonymized form. This would allow policymakers to test whether subsidy schemes generate price inflation in this market segment.

Municipality-level uptake patterns

The municipality-level database shows strong territorial variation in household prosumer uptake. Some municipalities have relatively high penetration, while many remain far below the national average.

The highest-penetration municipalities are not necessarily the largest electricity markets. Several smaller or medium-sized municipalities show high relative uptake. This confirms that population size alone does not explain prosumer diffusion.

Table 14 Examples of municipalities with high household prosumer penetration. Source: RES Foundation municipality-level pro-sumer database.

Municipality	Household prosumers	Installed capacity (kW)	Prosumer penetration	kW / 1,000 family houses
Savski venac	24	239.1	1.28%	127.1
Kladovo	87	727.0	0.78%	64.8
Kovačica	71	680.8	0.68%	65.5
Malo Crniće	33	252.8	0.62%	47.3
Novi Beograd	23	207.2	0.60%	54.2
Ada	44	394.3	0.60%	53.6
Rakovica	40	325.7	0.59%	48.0
Novi Sad	288	2,310.3	0.56%	44.7
Zemun	119	1,077.7	0.53%	47.7

The table shows different types of high-uptake municipalities:

- central or urban municipalities with small denominators but relatively high investment capacity;
- suburban municipalities with suitable housing stock;
- municipalities with strong private investment dynamics;
- municipalities where subsidies may have supported visible uptake.

This points to a key finding: household prosumer uptake is shaped by several interacting variables, not by one factor alone.

Main explanatory dimensions

The database was used to explore three explanatory dimensions:

- **Economic strength** Rooftop PV remains a capital-intensive investment. Municipalities with stronger household investment capacity or local economic strength are more likely to show higher uptake.
- **Diaspora-related investment capacity and transfer of practices** Field observations suggest that diaspora links can influence uptake in two ways: through additional investment capacity and through transfer of practices from countries where rooftop PV is more familiar. The available demographic proxy is imperfect and should not be interpreted as a "minority effect", but rather as one possible indicator of transnational household links. It also does not capture Serbian-majority municipalities with strong diaspora traditions, such as parts of Eastern Serbia.
- **Subsidy exposure** Public subsidies contributed to uptake in some municipalities, but do not fully explain the overall pattern. Some high-uptake municipalities show strong private investment dynamics, while in others subsidized installations account for a larger share of observed prosumers.

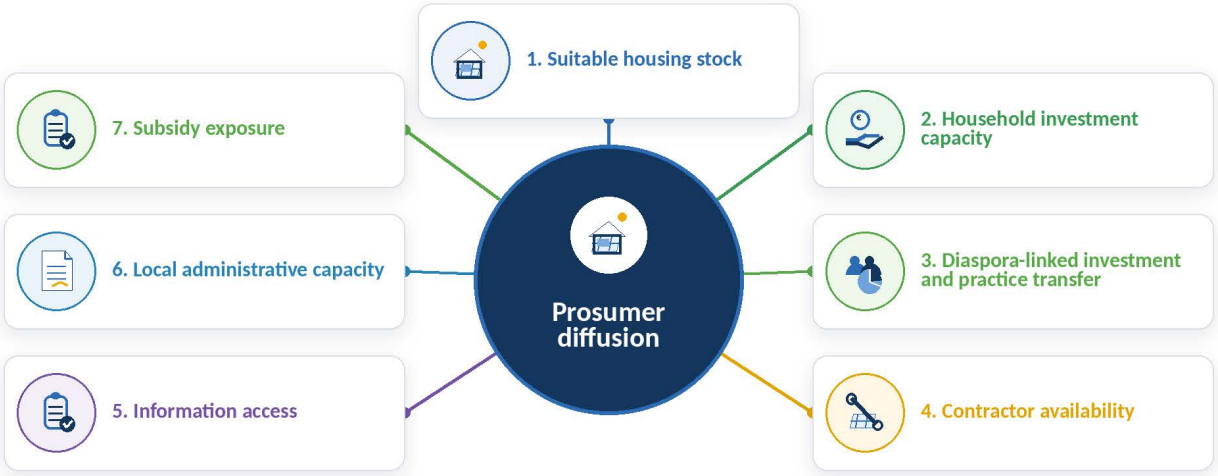


Figure 4 Drivers of prosumer diffusion in Serbia

Subsidized prosumers and register lag

The database identifies **751 publicly traceable subsidized household prosumers** in 2023–2024. This figure should be treated as a traceable minimum rather than a complete national total, because local publication practices differ and not all beneficiary lists are publicly available.

Table 16 Traceable subsidized household prosumers. Source: RES Foundation analysis of SURCE and local government data.

Indicator	Result
Publicly traceable subsidized household prosumers, 2023–2024	751
Traceable subsidized prosumers in 2023	428
Traceable subsidized prosumers in 2024	323

The number of traceable subsidized prosumers should not be merged mechanically with the official register. Subsidized systems may appear in the register only after several steps are completed: contract signing, installation, DSO procedure, metering adaptation, supply contract and registration.

This distinction is especially relevant for 2025. Results of some local calls are already known, but households selected for support have not necessarily reached the register by the cut-off date.

Knjaževac pipeline example [54]

Knjaževac illustrates the gap between subsidy approval and registered prosumer status. By **31 March 2026**, the official register recorded **65 household prosumers** in Knjaževac. The 2025 local subsidy call identified **38 additional supported**

solar PV systems. Applications were submitted on **22 December 2025**, and the final beneficiary list was adopted on **25 February 2026**. None of these beneficiaries appeared in the prosumer register by **14 May 2026**.

The 2025 PV subsidy pipeline in Knjaževac is therefore equivalent to approximately **59% of the registered household prosumer stock** in the municipality.

This example shows that subsidy results may have a delayed effect on the register. It also shows why future monitoring should distinguish between approved, contracted, installed, connected and registered PV systems.

Key outcome findings

The evidence presented in this chapter supports several findings.

First, Serbia's household prosumer market is growing but remains at an early stage. 5,016 household prosumers were registered by 31st March 2026, representing only around 0.23% of family houses with up to two apartments.

Second, SURCE has reached significant scale as a residential energy rehabilitation programme. The 2023 call supported more than 11,000 households and more than 13,000 measures, with a high financial implementation rate.

Third, rooftop solar PV remains a relatively small share of supported measures, but a much larger share of investment value. This confirms that PV should be treated as a distinct measure category in programme design and monitoring.

Fourth, public subsidies have contributed to uptake, but they are not the only driver. Municipal outcomes reflect the interaction of economic capacity, housing stock, diaspora links, local administration, contractor availability and information access.

Fifth, recent subsidy calls may not yet be visible in the official prosumer register. The register captures completed and formally registered systems, while subsidy data may capture future prosumer pipeline.

Finally, the available data show the importance of better monitoring. Future reporting should follow rooftop PV support from application to registration, rather than reporting only aggregate measures or disbursements. This would make it possible to identify where implementation is lagging behind.

7 Barriers and Challenges

This chapter explains why registered household prosumer uptake remains limited and territorially uneven despite the existence of a functional legal framework and a large public support scheme. The main barriers are not primarily caused by the absence of legal rights. They arise from affordability, local implementation capacity, technical readiness, fragmented monitoring and exclusionary effects of eligibility rules. Regulated end use electricity price is rising but affects financial feasibility of the investment and affects the demand.

Administrative barriers

The formal household prosumer connection procedure is legally simple and largely non-discretionary. The DSO checks technical correctness, equipment conformity, metering readiness and compliance with applicable rules. The broader administrative burden comes from the interaction between two systems: the subsidy system managed through the Ministry and local self-governments, and the electricity-sector process involving contractor installation, DSO procedure, supply contract and register entry.

SURCE implementation depends heavily on local self-governments. Differences in local capacity affect call publication, contractor rosters, application processing, field verification and public communication. The State Audit Institution identified delays in calls, limited capacity of local commissions, delayed inspections and weak tracking of implementation progress. Some municipalities formally joined the scheme but did not publish citizen calls, while many extended implementation deadlines.

Pipeline monitoring is weak. Public data often show applications or beneficiary lists, but not whether contracts were signed, systems installed, DSO procedures completed, meters activated, supply contracts signed or prosumer registration finalized. The Knjaževac 2025 case illustrates this: 38 households were selected for PV support, but none appeared in the prosumer register by 14 May 2026.

Financial barriers

Rooftop PV remains capital-intensive. In the 2023 SURCE call, households financed approximately 55% of total tripartite contract value. This leverage effect is positive from a public-finance perspective, but it means that participation requires savings, borrowing capacity or other private resources.

Solar PV is also more expensive than most other supported measures. It represented 3.3% of measures and 9.3% of investment value in 2023, and 5.8% of measures and 14.1% of investment value in 2024. This confirms that PV should be treated as a distinct measure type, with separate cost monitoring and affordability analysis.

The evidence does not justify a simple recommendation to expand broad untargeted PV grants as the default policy response. Subsidies can accelerate uptake but may mainly benefit households already able to invest. To attract additional users and remove barriers possible subsidy should be designed around additionality and affordability taking into account social and geographical distributional effects.

Technical and implementation constraints

Technical barriers include roof suitability, internal electrical readiness, equipment conformity, contractor quality and metering adaptation. These are not usually barriers to legal entitlement, but they shape whether a household can

complete the route from subsidy approval to registered prosumer status.

Contractor availability is particularly important. Local contractor rosters can improve quality control but may become bottlenecks where the number of qualified installers is limited. DSO deadline compliance is also an implementation issue: the procedure for connection is clear, but workload and staffing can delay completion. In addition, there is no deadline for adaptation of the metering point which is major implementation obstacle.

Social inclusion gaps

Social inclusion is the most important unresolved issue. Energy-vulnerable customers had access to a separate support window in 2024 and 2025, but rooftop solar PV was not included in that package. They were therefore excluded from subsidized prosumer participation by design, not merely underrepresented among PV beneficiaries.

Property legality and ownership requirements also create barriers. Evidence from local implementation, including Kladovo [55], shows that vulnerable-household applications may be rejected due to unresolved building legality or ownership documentation. This means that high subsidy rates alone are insufficient where households cannot meet formal eligibility rules.

BARRIER CATEGORY	MAIN BARRIERS	POLICY IMPLICATION
Administrative	Multi-actor process, local capacity differences, weak pipeline tracking	Track the full route from application to registration and strengthen local implementation
Financial	High upfront costs, large household contribution, PV cost intensity	Target support where affordability and additionality barriers are clear
Technical	Roof suitability, contractor availability, DSO timing, metering readiness	Improve contractor quality control, DSO service monitoring and PV-specific guidance
Social inclusion	PV excluded from vulnerable-household window; legality and ownership barriers	Create inclusive prosumer pathways and alternative delivery models
Transparency	Fragmented local data and no unified monitoring database	Publish anonymized, machine-readable data on applications, subsidies, installation and registration

Figure 5 Summary of key barriers

Key conclusion

Serbia's main household prosumer barriers are no longer mainly legal. The framework exists and the household connection process is relatively si mple. The next challenge is to improve the full pathway from household interest to registered prosumer status, while ensuring that support reaches municipalities and households that would otherwise remain outside the prosumer transition.

8 Just Energy Transition Implications

The findings show that Serbia's household prosumer framework is operational, but not yet fully inclusive. Energy rehabilitation support and prosumer support are related, but not identical. Measures such as window replacement, insulation or heating-system replacement improve comfort and reduce energy needs. Rooftop PV, by contrast, provides access to self-generation and potential long-term electricity bill reduction.

If only households with adequate roofs, legal property, information and investment capacity can access rooftop PV, prosumer policy may unintentionally reinforce existing inequalities. This is particularly important because energy-vulnerable households were offered higher support for selected rehabilitation measures in 2024 and 2025, but rooftop PV was excluded from their dedicated support window.

The legality requirement creates an additional equity issue. It is understandable from a public-finance and legal-risk perspective, but it may exclude households living in legally unresolved buildings, including households exposed to energy poverty. Such households may need alternative support models rather than standard individual rooftop grants.

A just prosumer policy should therefore move beyond broad untargeted grants. Public support is most defensible where it removes clear access barriers, supports underserved municipalities or enables participation by households that would otherwise be excluded. For vulnerable households, possible pathways include 100% support, on-bill financing, public-hosted PV, collective self-consumption, municipal solar schemes or energy communities.

The main just transition implication is clear: the next phase should move from enabling early adopters toward designing inclusive pathways for wider participation.

9 Policy Recommendations and Roadmap

The recommendations focus on improving the next phase of Serbia's prosumer policy. Serbia has established the basic legal, regulatory and programme architecture; the priority is now to make it more effective, transparent, inclusive and territorially balanced.

Priority recommendation matrix

Area	Recommendation	Rationale
Regulatory implementation	Publish clear net billing guidance, model contracts and consumer-facing billing examples before the full shift away from net metering.	Households need predictable export valuation, charges and settlement rules.
Connection procedure	Preserve the simple non-discretionary household connection model, but monitor DSO processing times and missed legal deadlines. Add legal deadline for adaptation of metering point	The legal procedure for connection is sound; the issue is implementation capacity. Timeline for adaptation of metering point remains an issue.
Collective models	Operationalize collective self-consumption, energy sharing, housing-community PV, municipal solar and energy community models.	Individual rooftop ownership excludes apartment dwellers and households without suitable roofs.
Subsidy design	Do not treat broad untargeted PV grants as the default instrument; assess support against additionality, affordability, cost per kW and distributional effects.	Subsidies can accelerate uptake but are not automatically equitable or cost-effective.
PV-specific design	Treat rooftop PV as a distinct measure with dedicated cost monitoring, contractor rules, DSO coordination and registration tracking.	PV is a small share of measures but a much larger share of investment value.
Vulnerable households	Create an inclusive prosumer pathway using 100% support, on-bill financing, public-hosted PV, collective models or energy communities.	Energy-vulnerable households were excluded from PV support under dedicated 2024 and 2025 windows.
Property-legality barriers	Assess how legality and ownership rules exclude vulnerable households and develop alternative delivery models where regularization is not immediately possible.	High subsidy rates are insufficient if households cannot meet property documentation requirements.
Monitoring and Transparency	Track each PV project from application to prosumer registration: approval, contract, installation, DSO procedure, metering, supply contract and register entry.	Subsidy data and register data measure different stages and can diverge significantly.
	Publish anonymized, machine-readable data on applications, approvals, rejection reasons, investment values, installed capacity and registration outcomes.	Current data fragmentation limits evaluation and policy learning.

Area	Recommendation	Rationale
	Align prosumer monitoring with NECP monitoring	Future reporting on household PV and prosumer support should be integrated with NECP implementation monitoring. Indicators should include registered household prosumers, installed household PV capacity, subsidized systems, public cost per kW, municipal distribution, vulnerable-household participation and conversion from subsidy approval to buyer-producer registration. This would allow prosumer policy to be assessed as part of national energy and climate planning, rather than as a disconnected subsidy measure.
Territorial targeting	Use municipality-level uptake indicators to identify low-penetration areas and adapt support to local barriers.	Uptake is highly uneven and not explained by subsidies alone.

Implementation roadmap

Timeframe	Priority actions
Short term	Publish net billing guidance; standardize local calls; monitor DSO deadlines; track PV projects from application to registration; publish anonymized subsidy data.
Medium term	Develop inclusive prosumer pathways for vulnerable households; address property-legality barriers; build contractor quality controls; link subsidy data with the prosumer register.
Longer term	Operationalize collective self-consumption, energy sharing and energy communities; assess VAT exemption or other fiscal instruments; develop public-hosted and municipal solar models.

Monitoring dataset for future calls

Future reporting should publish a minimum anonymized dataset covering municipality, beneficiary category, application status, rejection reason, measure type, investment value, subsidy amount, household contribution, PV capacity, key implementation dates, DSO procedure status, supply contract status and prosumer registration date.

Final recommendation logic

The next phase of Serbia's prosumer policy should not simply aim to increase the number of subsidized rooftop PV systems. It should create a framework in which prosumer development is economically rational under changing market rules, administratively simple, transparent, territorially balanced and accessible beyond early adopters. Serbia has built the foundations; the task now is to move toward a more inclusive and evidence-based distributed energy model.

Endnotes

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