

Prosumers at the Crossroads of Policy, Practice, and Public Discourse: An Exploratory Analysis of the Romanian Context

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DOI: 10.25019/STR/2025.034

Abstract

The paper explores the phenomenon of prosumers within the Romanian context. Positioned at the intersection of policy, practice, and public discourse, the study examines how national regulatory frameworks, market dynamics, and media narratives collectively shape the development of prosumerism as a significant component of the energy transition. Methodologically, the research employs a mixed-methods exploratory design, combining qualitative policy and discourse analysis with quantitative analysis of sectoral data provided by the National Energy Regulatory Authority and the Romanian National Institute of Statistics. The analysis covers the period 2019–2025, highlighting key momentum in the evolution of prosumers and energy communities. Main findings reveal a rapid expansion of the prosumer sector, driven primarily by two support mechanisms: the Casa Verde Fotovoltaice investment program and quantitative compensation. Despite the expansion, significant challenges persist, including regulatory fragmentation, infrastructural constraints, and regional disparities in adoption. The emergence of the Association of Prosumers and Energy Communities in 2024 marks an important institutional step toward collective representation and policy advocacy. Media analysis indicates that public discourse around prosumers has shifted from marginal awareness to a broader framing of energy citizenship, autonomy, and participation. However, some tensions remain between policy rhetoric and implementation realities. Overall, the study concludes that prosumers have begun to become central stakeholders in Romania's energy transition. Also, by integrating multiple perspectives, our study contributes to a comprehensive understanding of how prosumerism can accelerate the transition towards a prosumer ecosystem that better aligns with EU objectives for a decentralized, just, and citizen-driven energy transition.

Keywords

Prosumers; Energy Policy; Energy Transition; Media Discourse; Renewable Energy; Romania.

Introduction

For many relevant reasons, both socio-economic and environmental, the energy transition is an increasingly important phenomenon. Part of the solutions offered by economists and policymakers, especially in the EU, is the support of prosumers. The EU has a complex legislation, meant to ensure clean and affordable energy for all (European Commission, n.d.), which includes the Directive 2018/2001 on the promotion of the use of energy from renewable sources (European Parliament, & Council of the European Union, 2018), as well as the Directive 2019/944 on the Internal Electricity Market (European Parliament, & Council of the European Union, 2019). This framework led to the rise of prosumers in the EU, including in Romania.

Although Romania has partially implemented the European legislative framework, significant challenges remain that hinder the development of a robust prosumer economy. Romania's energy market is unique: the country benefits from a strong clean energy portfolio, high capacity, and low production costs, yet end-user prices remain higher than in most European countries. This situation is partly due to grid constraints and unclear legislation, but a more nuanced analysis of the status, scale, and roles of prosumers is needed to fully understand the dynamics of the Romanian market and the potential of prosumers.

The Association of Prosumers and Energy Communities in Romania (APCE), established in 2024, has rapidly emerged as the primary national-level institutional stakeholder representing prosumers' interests. Acting as both a collective platform for coordination and an advocacy body before governmental authorities and the energy industry, the Association plays a decisive role in shaping the regulatory and policy environment for prosumers and energy communities. Its involvement in public consultations, policy proposals, and monitoring of market practices has positioned it as a central actor in Romania's energy transition ecosystem. We mention that we considered APCE the most important stakeholder in the Romanian emergent prosumer and energy community sector.

The present study does an initial mapping of energy prosumers in Romania, having in mind three initial research questions:

RQ1: How is Romania aligning with the European policies by regulating and supporting the prosumer market?

RQ2: What is the evolution of the prosumer sector?

RQ3: How have mass media framed prosumers, and how has public interest evolved in Romania?

To answer these questions, four different lenses are used. First, a conceptual backing is useful, assuming a multi-level perspective. Secondly, the policy process and governance frameworks are analyzed. Third, the evolution of the sector is considered to reflect the industry's and the Romanian public's sense of the answer, including as a response to the framework's variation. Lastly, a media and public discourse approach allows for understanding public interest and framing of the topic. The study's contribution can be evaluated at several levels, as it investigates the relationships among policy, practice, and public discourse. Beyond its conceptual value, the paper provides an initial mapping of the Romanian prosumer landscape, with practical insights for policymakers and prosumers.

The paper is organized into six main sections. Following this Introduction, Section 1 develops the theoretical framework, outlining the conceptual foundations of prosumerism within the broader context of sustainable energy transition. Section 2 examines the evolution of the national legislative framework and the institutional mechanisms governing prosumers, mapping the key laws, ordinances, and ANRE orders that shape the Romanian prosumer market. Sections 3 and 4 detail the mixed-methods design adopted for this study, integrating policy analysis, quantitative sectoral data, and media discourse analysis. These sections outline key data sources and specific analytical procedures, emphasizing triangulation across the policy, statistical, and communicative dimensions. Section 5 concludes the study with a synthesis of the main findings and reflects on the significance of the prosumer's role in achieving national and EU energy transition goals.

Theoretical framework

Launched by Toffler in 1980, the term “prosumer” links production with personal consumption (Toffler, 1980). An increasing body of literature approaches prosumers (Ritzer et al., 2012) in the context of capitalism, shaped by factors such as capitalist dynamics, mass Internet access, higher levels of education, and emotions involved in producing and consuming. Three categories of energy prosumer research were documented: the types of the prosumer, their application scenarios, and their trade (Dai et al., 2020, p. 9).

Two types of prosumers can be identified: the Avid Hobbyist (mostly producing for exchange) and the Archprosumer (mainly producing for themselves) (Kotler, 2010, pp. 58-59). Another dichotomic classification divides prosumers into flexible and conventional consumers (Parra-Dominguez, Sanchez, & Ordóñez, 2023). The first type is flexible and can adapt to variable demand, while the second category cannot. A more granular typology considers the following categories: producers into producer-consumers who do not store the energy they generate; producers with storage; peer-to-peer energy-trading prosumers who engage in direct energy transactions with other prosumers; and energy-community prosumers who associate in communities to produce, consume, and even trade energy.

Prosumers are becoming key actors in the green transition and the collaborative economy. In line with common concern towards lower carbon footprint, one of the EU objectives is to reduce "greenhouse gas emissions by 80-95% by 2050 compared to 1990" (European Commission, 2011, 3). The engagement of EU member states is to achieve the first climate-neutral continent by 2050, which involves reducing emissions by at least 55% by 2030. These EU engagements directly impact European prosumer research, making it internationally prominent (Dai et al., 2020). The collaborative economy business model represents a challenging, growing framework for reshaping the role of individuals as economic actors (European Commission, 2016a, p. 3). Energy prosumers fit this profile by their key role in producing and distributing energy, as well as their support for reducing domestic greenhouse gas emissions in line with the EU 2050 Roadmap.

Early actions in this respect towards proactive stakeholder involvement impact a broad set of related socio-economic policies (European Commission, 2016b). Regarding collaborative platforms, a quarter of Europeans used them mainly in accommodation and transport. These platforms would be further recommended by a large majority, while only 6% of respondents used them to offer their services (Eurobarometer, 2018, pp. 4-6). Research on the role of consumers and prosumers on collaborative platforms shapes managerial decisions (Giglio et al., 2023). In addition, altruistic energy behavior among prosumers was documented in their social cooperation (Mitrea et al., 2025, p. 17). "Greater stakeholder satisfaction," "greater commitment," and the possibility for growth are documented as competitive advantages of platform cooperatives compared to commercial ones (Ghirlanda & Kirov, 2024, 1211). From the social capital lens, comparison between mutual versus public benefit-oriented cooperatives emphasizes that „an orientation toward public (mutual) benefit is associated with a closed (open) network structure and a stronger (weaker) social identification to the organization" (Bauwens & Defourny, 2017, p. 23).

National adoption of regulatory instruments to promote renewable energy sources in electricity generation is shaped by the institutional environment, and perceptions of their social effectiveness depend directly on "the relative values attached to environmentalism or the culture of market" (Finon, 2006, p. 338).

Green growth supports the achievement of economic, social, and environmental goals to promote sustainable development, as assumed in the 2030 UN Agenda (Bishop et al., 2014, p. 84), as well as the transition towards a sustainable economy (Bauwens & Defourny, 2017). Besides, increased energy efficiency substantially contributes to reducing energy poverty among the most vulnerable clients, improving the quality of life for citizens, and enhancing the security of energy consumption (Zamfir et al., 2015, p. 4; European Commission, 2019, p. 7). These strategic objectives for a clean energy transition towards renewable energy sources are also supported by promoting public-private partnerships alongside running national information and awareness campaigns on producing and conserving energy.

The development of energy prosumers in Romania decisively depends on a series of factors, among which we mention: a stable and advantageous support scheme, the presence of an installation market, particularly the costs of investing in renewable energy installations, and electricity market trends, as well as taxation levels (Bălan et al., 2019, p. 7). Regarding regulatory complexity, innovative approaches can be further supported by regulatory exemptions (European Environment Agency, 2022, p. 46). On the other hand, knowledge of the prosumer's behavior in active distribution networks can further support the calibration of efforts by Distribution Network Operators towards "optimal

strategies to improve the decision-making process regarding mainly the voltage control and phase load balancing measures” (Neagu & Grigoraş, 2020, p. 5).

Research on prosumers’ perceptions from two Romanian cities (Oradea & Timișoara) mirrors a positive attitude towards renewable energy sources accompanied by dissatisfaction on their implementation at the national level due to several ”barriers to implementation: the budget required for implementation, bureaucracy, poor information, lack of consistent support from the state, lack of confidence in this energy variance and resistance to change and disinterest in new and change” (Ban et al., 2023, p. 15).

Alongside Ireland, Spain, Slovenia, Finland, Iceland, and Norway, Romania is one of the countries with ”low rates of take-up relative to technical potential (...) where installed capacity in 2030 is projected to be less than 1% of the technical potential” (European Commission, 2017, p. 84). Comparatively, 2014 Romanian data reveal that ”energy losses in the industrial sector amount to 30–35% of the energy consumed, while in buildings, energy losses of about 40–50% of the energy consumed” (Stanciu & Mihăilescu, 2014, p. 286). Still, according to the Integrating National Energy and Climate Plan of Romania 2025-2030, approximately 107,000 prosumers were registered in Romania, achieving a capacity of around 1.4 GW (Stanciu & Mihăilescu, 2024, p. 81).

Besides better national harmonization of EU-specific regulations, it is expected to optimize the impact of prosumers on renewable energy (European Environment Agency, 2022, 49). The future evolution of sustainable energy systems requires greater national attention to the involvement of citizens as prosumers. This aspect is also reflected in the increased academic literature focus on prosumers since 1986 (Oprea and Bâra, 2024, p. 10). Research on digital prosumers emphasizes new forms of capitalism resistant to changes and confronting control-related difficulties (Ritzer & Jurgenson, 2010, p. 31).

In line with 2030 estimations on the impact of actively supporting energy communities, they ”could own some 17% of installed wind capacity and 21% of solar. By 2050, almost half of EU households are expected to be producing renewable energy” (European Commission, 2019, p. 13).

Romanian legal and regulatory context

Current regulatory framework is insufficient considering the long debates in the public space and the repeated positions of the Association of Prosumers and Communities of Energy (APCE) signaling operative problems and asking for more rights and a more fluid legal system to ensure a better functioning of the energy system including the energy produced by prosumers, as well as the regulatory bodies such as ANRE (APCE, 2024, 2025). An analysis of the press releases of this young but dynamic organization reveals that since its launch in January 2024, it has been very active in following the field's evolution, taking positions, and proposing initiatives. In more than 50 public key messages since its establishment, the association has addressed several main topics: regulatory initiatives, unfair energy market practices, consumer and prosumer energy bill redaction, energy infrastructure, as well as the recognition of prosumers and other important actors and stakeholders in the energy sector.

The current legislation impacting prosumers is given mainly by the following laws and orders, presented chronologically in Table 1.

Table 1. The Romanian regulatory framework on prosumers

<i>Law</i>	<i>Focus</i>	<i>Key elements</i>
Law No. 220/2008	Renewable energy	- favors self-consumption and micro-production - stimulates investments and support schemes

Law No. 123/2012	Energy, in general	- Defines the legal status of prosumers, sets their rights - defines the connection and compensation approaches in Romania - Sets ANRE responsibilities - Establishes distributors' role
ANRE Order No. 226/2018	Enabling and regulating the participation of prosumers in the electricity market	- establishes rules for the commercialization of electricity produced - delineates the relationship between prosumer, distribution operator, and energy supplier
ANRE Order No. 227/2018	Standard electricity sale–purchase contract	- provides a uniform framework for transactions between prosumers and electricity suppliers - set specific criteria that prosumers have to meet
ANRE Order No. 228/2018	Technical conditions for connection to public electricity networks	- presents the technical requirements for connecting to the national grid - assigns responsibilities
ANRE Order No. 195/2019	Monitoring methodology for the promotion system of electricity production from renewable energy sources	- sets the framework for tracking and monitoring the promotion system - specifies mechanisms for reporting - establishes evaluation mechanisms
ANRE Order No. 50/2021	Renewable energy by prosumer power plants of up to 100 kW	- provides rules to engage with the electricity market - only the surplus that is not used by the prosumer can be sold to the national grid
ANRE Order No. 52/2021	Monitoring methodology for the promotion system of electricity production from renewable energy sources	- outlines the structure and processes for monitoring the promotion system - defines the responsible entities for reporting - presents methods and criteria for evaluating the effectiveness of the promotion system
ANRE Order No. 15/2022	Energy Network Connection	- sets simpler procedures - standardizes network connectivity
ANRE Order No. 19/2022	Commercial/ financial	- sets the framework for contracting - establishes a compensation mechanism - defines reporting approaches

The first law establishing the framework for prosumers was Law No. 220 in 2008, which supported decentralized production of renewable energy. It also introduces green certificates, which are later transformed into schemes to support prosumers. This law contributed to supporting prosumers by stimulating investment and facilitating access to the grid. It was later updated to include the terms prosumer and community of energy, in line with the EU Directive 2001/2018 (European Parliament, & Council of the European Union, 2018).

The framework law in the field of electrical energy and natural gas from 2012, subsequently updated, including specifications on prosumers, such as OUG 143/2021 (Government of Romania, 2021). The current law includes specific articles defining prosumers and their rights and obligations (Law No. 123/2012, Arts. 73 and 73[^]1). It introduces the principle of self-consumption with injection into the national network. It defines the prosumer as a natural or legal person who produces renewable electricity (≤ 400 kW per consumption site – limit later updated) without requiring a production license, with compensation regulated by ANRE. The law also requires transparent, non-discriminatory grid access. It prohibits any additional or unfair tariffs, while mandating ANRE to establish the rules for the commercialization and compensation of prosumers' energy.

Although some updates have been considered for the legislation, the secondary legislation is very important for the system's actual functioning. The ANRE issued orders to implement the regulatory framework, starting in 2018. The first order, issued in 2018 (ANRE, 2018a), sets up a commercial mechanism for prosumers to sell surplus energy. It defines elements such as installed capacity, contract mechanisms, measurements, cost allocation, reporting, and monitoring. Further regulations and details regarding the process for selling surplus energy are included in Orders 227 and 228 from 2018 (ANRE, 2018b, c) and Order no. 50/2021 (ANRE, 2021). The monitoring mechanisms are set out in Orders 195/2019 (ANRE, 2019) and 52/2021 (ANRE, 2021b). The former order covers green certificates, while the latter order covers prosumers with installed capacity of up to 400 kW. The second order offers a more comprehensive framework.

The ANRE Order no. 15/2022 simplifies and standardizes the connection process of prosumers to the public electricity grid, ensuring faster procedures and non-discriminatory access. Nevertheless, it still leaves room for delays and inconsistencies in implementation across distribution operators. The ANRE Order no. 19/2022 defines how prosumers' energy is valued and compensated, introducing both quantitative and financial compensation mechanisms meant to create fairness and predictability. However, in practice, the order has generated disputes regarding transparency, pricing methods, and the imbalance of power between suppliers and small producers. Overall, while both orders advance prosumer integration and support energy decentralization, their effectiveness depends heavily on consistent enforcement, data transparency, and clearer financial accountability from energy suppliers.

Despite regulatory advances, prosumers are criticizing not only the slow pace of legal reforms but also the partial solutions offered to their challenges. For instance, they repeatedly criticize the way prices are set and propose measures to lead to lower energy bills for households and prosumers (see, for instance, APCE, 2025b, proposing five specific measures). According to APCE, regulatory gaps allow prosumers to be exploited by the system, receiving low prices while national energy suppliers that buy energy from prosumers gain very large margins by selling that energy (see, for instance, APCE, 2025c, d).

Repeatedly, APCE has emphasized that prosumers and energy communities are essential to the energy transition, in line with the European strategy, yet legislation is lagging behind. Some advancement has been considered lately, probably also due to the pressures of prosumers and other representatives of civil society, as well as other stakeholders, such as the Cooperative of Energy and associations such as Greenpeace and WWF, which are very active in the energy domain. The organization is continuously requesting dialogue with governmental authorities to ensure prosumers are part of policy-making. Its legislative pressure and initiatives focus spans from individual dwellings (such as allowing smaller PV systems on balconies) through condominiums to broader community energy structures.

Supporting schemes

According to ANRE reports (ANRE, 2022, 2023, 2024), two support schemes have played a decisive role in stimulating the growth of the Romanian emerging prosumer sector. These mechanisms combine regulatory facilitation with financial incentives, aligning national policy with the objectives of the EU Renewable Energy Directive (2018/2001) and the Electricity Market Directive (2019/944).

Quantitative Compensation and Financial Settlement Mechanism is the most significant regulatory instrument supporting prosumers. Its implementation is detailed through ANRE Orders No. 226/2018, 50/2021, and 15/2022, which establish the rules for trading and settling electricity produced by prosumers with installed capacities up to 400 kW per consumption site. Prosumers generating electricity from renewable sources can offset the energy they produce and inject into the grid against the energy consumed from the grid. For installations up to 200 kW, a 1:1 quantitative compensation applies (kWh injected = kWh consumed). For those between 200 kW and 400 kW, compensation is financial and based on the weighted-average price of the day-ahead market (PZU or PMP). Theoretically, this mechanism ensures fairness and predictability in prosumer-supplier relationships

and has been pivotal in integrating small renewable producers into the national electricity market. ANRE reports emphasize this mechanism as a key driver of the exponential increase in registered prosumers. However, the Association of Prosumers and Energy Communities in Romania (APCE) has publicly criticized the current energy compensation mechanism for prosumers, arguing that it favors energy suppliers at their expense. According to APCE, the rules introduced by ANRE in 2022 allow suppliers to take over the electricity produced by prosumers, postpone invoicing, and delay payments (Dobra, 2025).

The Photovoltaic Investment Subsidy Program ("Casa Verde Fotovoltaice") is the second major support scheme. It consists of direct financial incentives for renewable energy investments and is administered by the Environmental Fund Administration (AFM). The objective of this program is to co-finance the installation of small-scale photovoltaic systems on residential and public buildings, thereby reducing investment burden and facilitating household participation in renewable generation. For instance, in 2025, the program allocated approximately 2.2 billion RON to photovoltaic installations, complemented by an additional 400 million RON for energy storage solutions. ANRE attributes a significant share of the increase in installed capacity and registered prosumers to this funding scheme, particularly between 2021 and 2024, when Romania surpassed 2 GW of installed prosumer capacity.

The evolution of the number of prosumers and installed capacity in Romania

Data & Method

We performed a quantitative analysis that drew upon official datasets published by the National Energy Regulatory Authority (ANRE, 2022–2024), Eurostat (2025), Eurelectric (2025), and the Romanian National Institute of Statistics (INS). The data sets encompassed the following key dimensions: the evolution of the number of registered prosumers, differentiating between individuals and legal entities; the installed power capacity (expressed in kW/MW) and the share of renewable energy in total electricity generation; market price indicators (PZU and PMP); as well as the regional distribution of prosumers. The collected data were organized into longitudinal tables and graphically represented to highlight growth trajectories, regional disparities, and potential correlations with major regulatory developments. The analytical period spans from 2019 to mid-2025, with earlier data incorporated to provide historical and contextual grounding. The analysis also included a critical analytical approach, discussing various inconsistencies between regulatory intent and empirical outcomes, as well as disparities in policy implementation across regions and market actors. This approach enabled the identification of systemic barriers influencing the development of the Romanian prosumer landscape and a preliminary exploratory mapping of this emerging sector in Romania.

Table 2. Datasets on prosumers

<i>Dataset</i>	<i>Year</i>	<i>Coverage area</i>	<i>Reference</i>
Power Barometer	2024	The EU	Eurelectric, 2025
Electricity and heat statistics	2000-2024	The EU	Eurostat, 2025
Installed power of generating sets at the end of the year by power plant categories	1992-2023	Romania	INS, n.d.
Report on monitoring prosumer activity for 2021	2021	Romania	ANRE, 2022
Report on monitoring prosumer activity for 2022	2022	Romania	ANRE, 2023
Report on monitoring prosumer activity for 2023	2023	Romania	ANRE, 2024

Evolution and analysis

In Romania, similar to other EU countries, the number of prosumers increased consistently between 2021 and 2024 (Eurelectric, 2025). Overall, connection requests across the EU have registered at a

similar pace. This development determined that in 2024, the electric energy from renewable sources to represent almost half of the market (Eurostat, 2025). Romania registered a share slightly above the EU mean. Some countries, such as Portugal and Denmark, are doing very well in this field, with shares of almost 90%, while others are lagging significantly (such as Luxembourg, with around 5%). At the European level, most of this energy comes from Wind and Hydro, while Solar power contributes a little more than 20% to renewable energy. From 2024 to 2025, figures for Romania remained almost unchanged, while at the EU level, the share increased slightly (Sustainability Online, 2025). We also add that in the case of solar power, the increase has been significant, from 3.4% in 2010 to 22.4% in 2024 (Eurostat, 2025). This growth is the result of a combination of several factors, such as technological advancements and the decreasing costs of solar systems, as well as policy support in the EU, which is also driving an increase in the number of prosumers across the EU.

Considering solar energy production in Romania, longitudinal data are available from the National Institute of Statistics (INS, n.d.). The uneven evolution is presented in Figure 1.

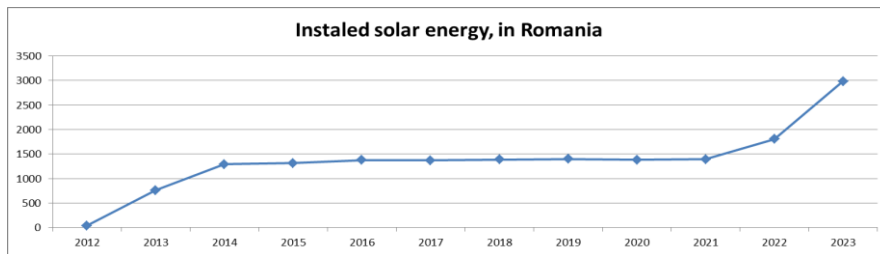


Figure 1. The evolution of solar energy power in the past decade, in Thousands of kilowatts

Source: INS, n.d.

The two periods of growth can be correlated with the key moments when the Law on Electricity and Natural Gas (Law No. 123/2012) was adopted and with its further amendments, such as those introduced by Law No. 155/2023 and subsequent ANRE orders, which updated the regulatory framework governing the production of energy from renewable sources.

Figure 2 presents the annual evolution of prices per MWh for 2019-2021. The PZU, according to the ANRE reports (ANRE, 2022, 2023, 2024), is shown. PZU represents the Daily Utilized Power and refers to the fixed, guaranteed compensatory payment for prosumers based on the amount of electrical power used and injected into the system during one day. For 2022 and 2023, data shows the PMP – which is the mean weighted average price on the actual energy market.

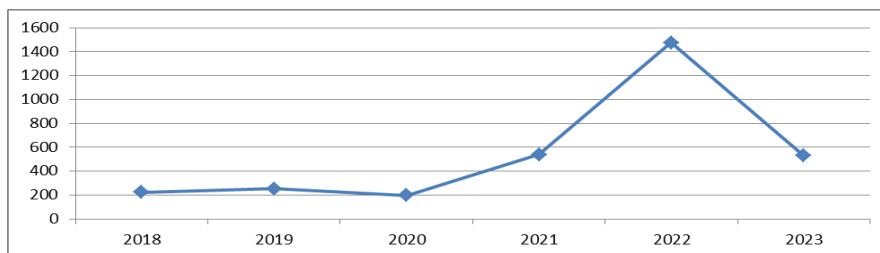


Figure 2. Trends in prosumer energy prices (in RON/MWh)

Note: * in PZU, ** in PMP

Sources: ANRE, 2022, 2023, 2024

The increase in energy prices that began in 2021 can be explained by a combination of global, European, and national factors that together drove a sustained rise in wholesale and retail electricity prices. For instance, at the global level, the post-pandemic economic recovery led to a sharp rise in energy demand, particularly for natural gas and coal, as industries and the transport sector resumed full activity. This sudden increase in demand occurred in parallel with supply shortages caused by reduced

extraction and limited storage capacity during the COVID-19 crisis. As a result, international energy markets experienced volatility and record-high gas prices, which directly influenced electricity generation costs in Europe. On the other hand, at the European level, several factors amplified these pressures, such as the higher cost of natural gas imports, especially from Russia, which intensified during late 2021; the rise in carbon allowance prices which increased the cost of producing electricity from fossil fuels; a reduced output of renewable energy in some periods, due to lower wind speeds and droughts affecting hydropower generation; and cross-border electricity trade constraints, which limited the balancing capacity within the European grid. These external pressures were compounded by specific internal challenges in Romania, such as the liberalization of the retail electricity market in January 2021, insufficient investment in transmission and distribution infrastructure, and delayed regulatory adjustments and uncertainty surrounding compensation mechanisms for suppliers and consumers. Consequently, both wholesale market prices (PZU) and average weighted market prices (PMP) recorded sharp increases from mid-2021 onward, peaking in 2022.

Figure 3 presents the evolution of the number of prosumers since 2021.

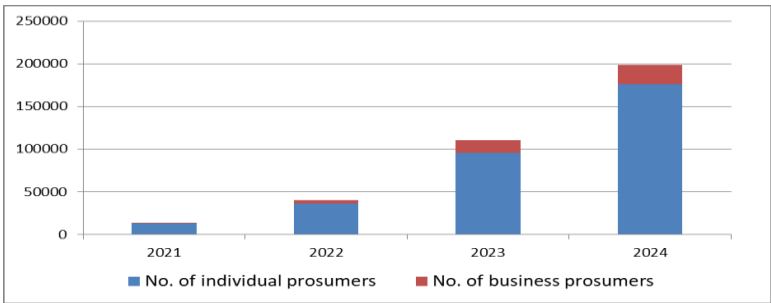


Figure 3. No. of prosumers in Romania between 2021 and 2024
Sources: ANRE, 2022, 2023, 2024; Tilinca, 2025

Data shows a steep increase in the number of prosumers. The number of individual prosumers increased by 174% in 2022 from 2021, by 165% the next year, and by “only” 85% in 2024. The increase in business prosumers has been even more significant, with more than 760% in 2022 compared to 2011, twice as much in 2023 compared to 2022, and 50% in 2024 compared to the previous year. Companies have greater financial power to invest in photovoltaic panels than individuals do. We also add that 99% of prosumers have installed solar power.

In terms of installed capacity (kW), Figure 4 shows the evolution over the past few years.

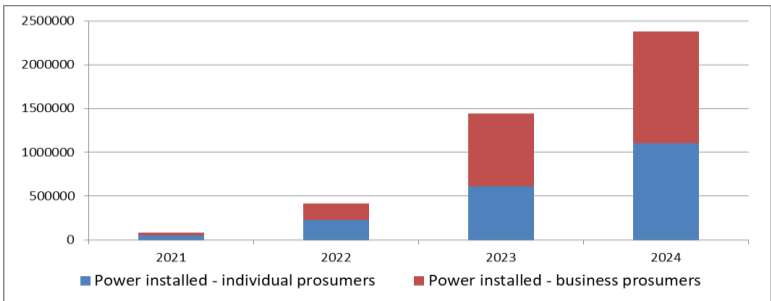


Figure 4. Prosumer's installed power, in Romania, since 2021 (in kW)
Sources: ANRE, 2022, 2023, 2024; Tilinca, 2025

As in the previous figure, installed capacity in Romania also experienced significant growth. Due to larger and generally more efficient solar systems, business prosumers account for a much larger share than individual prosumers. In 2023, the installed capacity of prosumers that were legal entities accounted for 57% of the total. The installed capacity per prosumer increased over time from 4.2 MW

in 2021 to nearly 6.4 MW in subsequent years. For prosumer companies, installed capacity per company fluctuated from 59.5 MW in 2021 to 44.4 MW in 2022, then rose to 54.9 MW in 2023 and 56.2 MW in 2024.

According to official data published by ANRE and the Ministry of Energy, Romania registered a substantial expansion of the prosumer sector over the past four years. As of December 31, 2021, there were approximately 13,600 prosumers, with a combined installed capacity of about 85 MW. By the end of 2024, the number had risen sharply to 198,756 prosumers, corresponding to a cumulative capacity of 2,378 MW. As of January 31, 2025, the figures further increased to 203,894 prosumers and a total installed capacity of 2,441.59 MW. The vast majority of prosumers—around 180,000—are individual households, while the remainder are legal entities.

Public interest in the topic

Methodology

The objective of this particular investigation is to map public interest in the selected topics, as reflected in major Romanian mass media outlets. For this longitudinal analysis, Media Cloud was chosen.

In the Romanian context, the outlets included are relevant, encompassing national, regional, and significant local sources, which makes the platform a reliable instrument for studying the country's media landscape. While Media Cloud primarily enables quantitative identification of stories and does not provide full articles, it offers links to all open-access content, allowing further examination. A remaining limitation is its restriction to online media, excluding alternative sources and citizen journalism; as a result, its coverage is primarily confined to mainstream outlets.

The media sources in Media Cloud include over 250 national and local media titles, most of which are relevant voices reflecting public discourse and interests. To allow a more consistent analysis, a longitudinal approach has been considered. 2017 is the first year included in Media Cloud. The end of the period considered is July 1, 2025, to cover a full half-year from the current one. To encompass the widest range of contributions, only one general keyword has been considered: "prosumator" (the Romanian for prosumer). Separately, for a more nuanced investigation, we also considered the keywords "cooperativa de energie" (energy cooperative) and "comunitate de energie" (energy community).

Findings

The first article identified was published in March 2017. 1184 articles have been included in the database until the end of June 2025. The analysis indicates that Romanian mass media have displayed a relatively high interest in this topic, especially in the past few years. In the same time frame, for instance, the coverage of energy communities or cooperatives has remained relatively low, with less than 10 articles per year. This imbalance can be explained, first, by the structural context: Romania currently has only one functioning energy cooperative, which significantly limits the interest or debates that the media might report on. By contrast, the structural interest in prosumers has expanded rapidly in recent years, with a growing number of individual households adopting this role.

Second, from a media-logic perspective, prosumers represent a more accessible and relatable subject for general audiences. The topic is linked to everyday practices of energy production and consumption, to individual financial benefits, and the broader narrative of renewable energy adoption. Additionally, advocacy groups and individuals have been active, especially in the past year, in pushing for more suitable legal and fiscal frameworks for prosumers. These factors make prosumers more appealing as news stories than the more complex, less visible processes involved in developing energy communities or cooperatives.

After excluding articles deemed irrelevant to the scope of investigation or duplicates across multiple outlets, 764 articles were retained in the database for further analysis. The large number of exclusions

installations to the national grid, and encourage citizens, communities, and businesses to produce and share their green energy. Still, the event did not capture wide attention in the mass media.

The following article, published in August, shows that ANRE has drafted a regulation setting fixed prices for small-scale renewable energy producers to sell their electricity to distribution operators to cover network losses. The Ministry of Finance must define the billing and tax rules for these transactions. The broader goal is to integrate prosumers into the grid, support distributed generation, and promote energy storage for a more resilient and efficient network (StirileProTV, 2017). The third article identified for 2017 presents the EU engagement for renewable energy and support for energy cooperatives (Pirvoiu, 2017)

Since January 2019, Romanian prosumers have been able to sell energy into the national network. Nevertheless, more than a year later, in April 2020, the mass media announced that prosumers could actually connect to the national electricity grid (Deacu, 2020). Nevertheless, the logistical and administrative problems continued. Mass media reported in August 2022 that even after installation, photovoltaic panels could not function for many months because they were not connected to the national grid (Brandabura, 2022).

In May 2019, EnergiaTa, a community of prosumers, launched the Proumers' Guide. This sparked widespread media interest, not only in this initiative but also within the Romanian prosumer community as a whole. At the time, 70 prosumers were connected to the Romanian energy network (Moga, 2019). In October 2019, the first Energy cooperative in Romania was established, which captured the attention of only one national media outlet – Romania Libera (Budescu, 2019). Another guide for energy communities was launched in July 2022 by Greenpeace, but the mass media did not cover this event much (Bulugean, 2022). In November 2022, the Authority of Regulation in Energy (ANRE) developed a guide for prosumers (Cicovschi, 2022).

In January 2020, extensive coverage was dedicated to the program *Casa Verde Fotovoltaice*. The scope of this governmental program, funded by European grants, was to stimulate green energy in Romania by supporting the installation of photovoltaic panels in households. Mass media reported a Greenpeace report stating that, until then, no household among the 25,000 enrolled had benefited from the program, and no prosumer had been created through it due to administrative and political constraints (Agerpres, 2020). Eight articles across Romania presented this report. None of them took the opportunity to conduct a wider analysis of the phenomenon, reproducing, more or less, the report of Greenpeace. In June 2020, four other negative articles were published on this program (see, for instance, Cicovschi, 2020). One observes that, over the years, this program has been presented and, especially, criticized in various mass media articles.

In May 2021, Greenpeace accused the government of cheating prosumers by offering them ridiculously low prices (Cicovschi, 2021). In 2023, mass media highlighted additional challenges for Romanian prosumers, including legislative inconsistencies, excessive bureaucracy, and delays in connection, which hinder their full benefits from photovoltaic investments. In addition, unfair practices such as inadequate compensation, technical measures that block energy injection, and poorly managed state programs leave prosumers frustrated and financially disadvantaged (Oprean, 2023).

Nine major media outlets reported on the large fines imposed on major energy companies in November 2021. It was also reported that they were fined, among other things, for failing to submit the documentation for obtaining building permits for natural gas connections within 90 days and for not issuing and sending prosumers the connection certificate within three working days of receiving the commissioning report from the prosumers or their representatives (see, for instance, the Mediafax news – Pirv, 2021). A year later, 13 articles reported other significant fines imposed on electricity distributors (Vasilache, 2022).

In 2025, compared to previous years, numerous articles discuss the situation of prosumers living in blocks. For instance, an article published in April 2025 discusses the difficulties of installing photovoltaic panels on blocs (Cicovschi, 2025; Luca, 2025). Urban Romanians face legal,

administrative, and financial barriers that prevent them from using or storing energy from photovoltaic panels on apartment buildings, leaving unexploited a considerable potential for city-based prosumers.

A relatively frequent topic of discussion is the financial dimension of being a prosumer. Starting in October 2022, the media presented in numerous articles the costs and procedures associated with installing photovoltaic panels for households. Also, this is presented as an alternative to the continuously rising energy costs in Romania (Hotnews, 2022; Moldovan, 2022; Neagu, 2022; Oprean, 2022). A national-level study in 2023 found that one in two Romanians wanted to become a prosumer primarily for financial reasons (Magazin Salajejan, 2023). Also, some companies, such as the drug companies Terapia Cluj and Zentiva, consider becoming prosumers as an alternative to cutting costs (Bursa, 2022b; Copaciu, 2022). Some local public administrators also view the development of green energy as an alternative to urban development (see, for instance, some of the earliest information in the mass media on this approach - Bursa, 2022; Monitorulcj.ro, 2022). In 2024, several local public administrations and nongovernmental organizations called for improved legislation and financing for energy communities (Bursa, 2024a). A study shows that such communities might reduce electricity costs by more than 60% (Bursa, 2024b).

In June 2025, extensive media coverage focused on the liberalization of energy prices. Starting July 1, 2025, prosumers continue to have the right to offset the energy they produce against their consumption, even though energy prices are no longer capped, and any surplus can be used over time. Those with larger installations must sell excess energy to their supplier under regulated market conditions, and switching suppliers requires careful consideration of overall energy balances (Popa, 2025).

In February 2024, numerous articles signaled the government's intention to introduce a so-called “tax on the sun” (for instance, see Cicovschi, 2024; Desteptarea, 2024). Although the sun tax was canceled, ANRE requested the installation of a second meter that had been associated with it from the start, sparking protests from prosumers and extensive media coverage (see Cernat, 2024; Cicovschi, 2024b). Various legislative modifications have been a focus for the mass media. A wide attention was given in December 2023 to the law modifying the juridical status of prosumers. The Romanian president did not promulgate the law and sent it back to the Parliament because several provisions conflict with EU regulations, lack legal clarity, and risk creating financial imbalances by shifting costs from prosumers to suppliers and ultimately to final consumers (Bursa, 2023). Another tension between the government and prosumers, widely reported by the media, concerns prosumers' storage capacity (see, for instance, Bursa, 2024c).

Conclusions and discussions

The analysis of the Romanian prosumer ecosystem across policy, practice, and public discourse dimensions reveals an emergent dynamic field facing particular challenges related to the intersection of European policy alignment, national regulatory evolution, and increasing citizen engagement in energy production.

First, from a policy and regulatory perspective, Romania has formally adopted the main provisions of the EU directives on renewable energy and the internal electricity market. The national framework—structured around Law No. 123/2012 and successive ANRE Orders—has progressively recognized the role of prosumers and simplified procedures for grid access, compensation, and commercialization of surplus energy. However, our study's findings show that regulatory fragmentation persists, with inconsistent implementation across distribution operators, limited transparency in pricing mechanisms, and delays in secondary legislation. While the legislative trajectory is positive, its impact remains uneven and reactive rather than anticipatory. We note that Romania experienced a key moment in 2024, when the institutional emergence of the Association of Prosumers and Energy Communities in Romania (APCE) marked a turning point in stakeholder representation. APCE functions as both an advocacy platform and a mediating institution between citizens, regulators, and energy suppliers. Its proactive engagement in policy dialogue has begun to redefine the prosumer field from a dispersed set

of individual actors into a new cohesive socio-political approach, capable of influencing regulatory outcomes.

Second, the quantitative analysis of the prosumer sector shows exponential, sustained growth in both participation and installed capacity. Between 2021 and early 2025, the number of registered prosumers increased more than fifteenfold—from approximately 13,600 to over 200,000—while installed capacity grew from 85 MW to more than 2.4 GW. This expansion confirms that prosumers have become a structurally relevant component of Romania’s renewable energy system. However, this growth is not purely organic, and it directly correlates with the introduction of key support schemes, such as the *Casa Verde Fotovoltaice* investment program and the quantitative compensation mechanism, which together reduced financial and administrative barriers to entry. Nonetheless, the analysis also highlights that growth is geographically uneven, concentrated primarily in counties with higher income levels and better grid infrastructure (e.g., Ilfov, Timiș, and Bihor).

Third, the media and public discourse analysis reveal the gradual mainstreaming of the prosumer topic in Romanian public debate. Romanian mass media coverage of the topic has evolved steadily since 2017, initially focusing on awareness campaigns and symbolic initiatives, such as Greenpeace Romania’s “Change Your Energy” campaign and creative projects like Printoteca. Early coverage highlighted the potential of renewable energy and prosumer participation but received limited attention. From 2019 onward, media reporting shifted toward legislative and practical developments, including the ability of prosumers to sell energy to the national grid, the creation of guides and cooperatives, and the governmental program *Casa Verde Fotovoltaice*, which were widely covered due to delays, administrative barriers, and program inefficiencies. Media attention increasingly highlighted the bureaucratic, technical, and financial challenges prosumers faced, including connection delays, inadequate compensation, and systemic obstacles that hindered the full exploitation of photovoltaic installations. Most attention was given to prosumers, with limited discussions on energy cooperatives and communities. From 2022 to 2025, the interest increased considerably. The coverage broadened to include financial considerations and legislative reforms. Journalists highlighted the difficulties of installing panels in apartment buildings, the rising cost of energy, and the motivations for households and companies to become prosumers as a financial strategy. Legislative changes captured significant media attention, reflecting ongoing tensions between regulatory authorities, prosumers, and energy distributors. Overall, the media narrative evolved from awareness and inspiration to critical reporting on structural, financial, and regulatory issues, emphasizing the unfulfilled potential of prosumers in Romania’s energy transition.

In conclusion, the findings of our exploratory study concerning the Romanian prosumer sector illustrate a rapid quantitative expansion of the sector under conditions of regulatory and infrastructural asymmetry. The policy framework has succeeded in enabling access but has not yet ensured long-term stability, equity, or the integration of prosumers into the national energy strategy. Challenges such as delayed compensation, grid capacity limits, and inconsistent regulatory enforcement continue to hinder full participation. We can state that prosumers in Romania have transitioned from marginal actors to more important stakeholders in the national energy transition. However, the consolidation of this progress depends on some essential conditions, such as further regulatory coherence and predictability, infrastructural modernization, or increased institutionalized citizen participation.

Further research directions arise after this first exploratory research exercise. For instance, given that quantitative data show significant growth in the number of prosumers while regional disparities remain pronounced, we intend to conduct a future analysis to better address spatial inequality in prosumer adoption - exploring correlations with income levels, urbanization, and access to infrastructure. This new research direction could include energy justice and energy poverty perspectives, linking with the social and solidarity economy approach and energy communities, investigating whether prosumerism risks reinforcing existing inequalities or can instead serve as a lever for social inclusion through real community-based energy initiatives. Investigating the emerging phenomenon of energy communities and cooperative models will help us gain a better understanding of how collective prosumerism differs from individual participation, and it could help design supportive legal frameworks and financing tools that strengthen community resilience and local energy autonomy. Also, future research could deepen

the understanding of the motivations, attitudes, and behavioral patterns of individual prosumers. Mixed-method approach - surveys, interviews, or focus groups - could be used to reveal how citizens perceive energy autonomy, environmental responsibility, and trust in regulatory institutions. This perspective would link prosumerism to broader cultural values around sustainability, and the research could be conducted with members of the first successful energy communities in Romania. Of course, further substantial in-depth research is needed to analyze the economic sustainability of prosumer participation under different pricing and compensation regimes, to conduct cost-benefit analyses for households and businesses, and to identify potential distortions created by volatile market prices.

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Received: February 2, 2026

Revised: March 21, 2026

Accepted: April 15, 2026