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Legal Transformation of the Bulgarian Energy Sector: From a Centralized Model to a Decentralized Regulatory Framework for Renewable Energy Sources and Renewable Energy Communities

Olga Borisova
Varna Free University "Chernorizets Hrabar"
Varna, Bulgaria
olga.borisova@vfu.bg

***Abstract*— This report analyzes the fundamental regulatory transformation of the Bulgarian energy sector, stemming from the transition from the traditional centralized model to a decentralized legal framework for renewable energy sources. The primary research focus is directed toward the conceptual alignment and existing contradictions between the Energy Act and the Energy from Renewable Sources Act. Despite the introduction of progressive European definitions such as "active consumer" and "renewable energy community," the analysis identifies a significant regulatory dualism that hinders the actual functionality of these new market entities.**

The study identifies key barriers to energy decentralization arising from the conservative architecture of the Energy Act and the lack of applied methodology in secondary legislation. Special attention is paid to the need for reform in the licensing regimes of the Energy and Water Regulatory Commission and the introduction of differentiated "local grid fees" to reflect the actual load on the grid during production and consumption within a single community.

The scientific contribution of the report is expressed in the formulation of specific proposals for legislative amendments, including the creation of a "one-stop-shop" digital register at the Sustainable Energy Development Agency to eliminate administrative duplication. The author substantiates the conclusion that without urgent regulatory corrections, energy decentralization in the Republic of Bulgaria will remain in a state of functional inefficiency, blocking strategic goals for a sustainable energy transition and decarbonization.

Keywords*— *Decentralization, Energy transition, Legislative amendments, Renewable energy.

I. INTRODUCTION

The energy sector is undergoing a fundamental regulatory and structural transformation—a transition from a centralized, vertically integrated model toward a decentralized, low-carbon system. In the Republic of Bulgaria, this process represents a complex regulatory challenge, shaped by the country's commitments under European Union law and the strategic objectives of the "European Green Deal."

The subject of this report is the legal reconfiguration of the Bulgarian energy market, determined by the "Clean Energy for all Europeans" legislative package. The study focuses on the interference between established administrative practice and the legal status of new entities: active customers and energy communities.

Traditionally, the Bulgarian legal framework defined the end-user as a passive subject—a recipient of a service of public interest. Through the transposition of Directive (EU) 2018/2001 [1] and Directive (EU) 2019/944 [2] into national legislation (the Energy Act and the Energy from Renewable Sources Act), the foundations of a new regulatory model have been established. [3] Its goal is to provide households and small businesses with the regulatory instruments necessary for active participation in market mechanisms and energy resource management.

The central thesis of this report is that while the national regulatory framework has been formally aligned with the principles of decentralization, there are systemic deficits in

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the implementing regulations. The identified contradictions necessitate urgent legislative synchronization to transform decentralization from a legal declaration into an effectively functioning market mechanism. Within this report, these deficits will be analyzed through the prism of current law, and specific guidelines for legislative optimization will be proposed.

II. MATERIALS AND METHODS

The methodology of this research is predicated on a multidimensional legal analysis designed to evaluate the effectiveness of the Bulgarian regulatory framework in the context of energy decentralization. The study employs a combination of qualitative research methods to assess the alignment between national legislation and European Union mandates.

The primary "materials" of this study consist of an extensive corpus of primary and secondary legal acts, structured into three hierarchical levels:

- European Supranational Framework: Analysis of Directive (EU) 2018/2001 (RED II), Directive (EU) 2019/944, and Directive (EU) 2023/2413 (RED III) [4], which serve as the normative benchmark for decentralization.
- National Primary Legislation: Evaluation of the Energy Act (EA) [5] and the Energy from Renewable Sources Act (ERAS) [6], focusing on the provisions defining "active customers," "renewable energy communities," and "citizen energy communities".
- Secondary Legislation and Administrative Norms: Examination of Ordinance No. 6 of March 28, 2024, on the Connection of Facilities to Electricity Networks, and the Rules for Electricity Trading. [7]

To achieve the research objectives, the following scientific methods were applied:

- Formal-Dogmatic Method: Used to interpret the literal meaning and legal scope of specific definitions, such as the "urbanized territory" requirement for renewable energy communities and the legal status of the "active customer".
- Comparative Legal Analysis: Employed to identify the gaps between the idealized European models of "energy democracy" and their technical transposition into Bulgarian law. This method highlights the discrepancies between the promotional regime of the ERAS and the restrictive administrative architecture of the Energy Act.
- Systemic-Structural Analysis: Applied to examine the horizontal and vertical relationships between market participants (distribution system operators, regulators, and communities). This approach was crucial for identifying the "regulatory dualism" where overlapping jurisdictions of Sustainable Energy Development Agency (SEDA) and Energy and Water Regulatory Commission (EWRC) create administrative barriers.
- Teleological Interpretation: Used to evaluate whether the current secondary legislation (such as the lack of virtual net metering mechanisms) aligns with the ultimate goals of the "European Green Deal" - namely decarbonization and citizen empowerment.

The study followed a three-stage analytical process:

1. Identification of Normative Inconsistencies: Mapping the contradictions between the EA and the ERAS regarding entity registration and market participation.
2. Functional Assessment: Analyzing the practical operability of "energy sharing" under the existing electricity trading rules.
3. Synthesis and Proposal: Formulating de lege ferenda proposals for legislative optimization, including the creation of a "one-stop-shop" registry and the introduction of differentiated grid fees.

III. RESULTS AND DISCUSSION

1. EU LEGAL FRAMEWORK IN THE FIELD OF DECENTRALIZED ENERGY

1.1. Retrospective Review of EU Primary and Secondary Law: Transition Toward Decentralized Energy Models (RED I, II, III)

The evolution of European law in the renewable energy sources (RES) sector marks a transition from the centralized planning of state capacities toward the decentralized empowerment of the individual market participant. [8]

Within the framework of modern energy transformation, the shift toward a decentralized operational model fundamentally alters the legal status of the consumer—moving from a passive recipient of a service to an active market participant. This concept is closely linked to the liberalization of the electricity sector and the implementation of Smart Grids, which allow entities to simultaneously consume and produce energy.

A retrospective legal analysis reveals that until the late 1990s, there was no comprehensive or binding EU legal framework for the RES sector. The process of codification began gradually, culminating in successive amendments to the Renewable Energy Directive (known as RED I, RED II, and the current RED III), which institutionalized the rights of energy communities and energy-sharing mechanisms. [9]

During this period, energy policy was viewed primarily as a prerogative of national sovereignty rather than an object of unified EU legislation. Technologically and economically, the renewable energy sector (wind and solar) was characterized by high capital intensity and treated as "experimental" compared to conventional capacities (coal and nuclear).

The legal regulation of the sector entered a new stage in 2001 with the adoption of Directive 2001/77/EC [10], which introduced the first specific targets for promoting electricity from renewable sources within the internal market. It set a general indicative target of a 21% share of RES in the Community's gross electricity consumption by 2010. [11]

In 2009, Directive 2009/28/EC (RED I) [12] established the first comprehensive legal framework, extending the scope of regulations to the heating, cooling, and transport sectors. This early stage institutionalized the RES sector through mandatory national targets. In Bulgaria, this led to a boom in large-scale photovoltaic and wind farms, but within a strictly centralized model. The legal framework treated RES capacities as industrial facilities, without providing a role for the small-scale consumer.

The subsequent revision took place in 2018 via Directive (EU) 2018/2001 (RED II), which codified the rules for the period up to 2030. This directive effected a radical legal shift by defining "energy democracy." It mandated that Member States recognize the right of citizens to be "active consumers". A key contribution was the legalization of energy communities, which were granted the right to produce, consume, and share energy within closed or local structures. [13]

Currently, this framework has been substantially amended and enhanced by Directive (EU) 2023/2413 (RED III). It accelerates decentralization by introducing the concept of "overriding public interest" in the construction of RES and aims to remove administrative barriers through "renewables acceleration areas" (RAAs), designed to overcome the inertia of local legislation.

1.2. Transformation of the Legal Status of Consumers: Evolution of the Decentralized Model in RED II and RED III

Directive (EU) 2018/2001 (RED II) and its subsequent amendment via Directive (EU) 2023/2413 (RED III) introduce fundamental changes to the structure of the energy market, institutionalizing the model of decentralization.

The regulatory framework places new legal entities at its center—active customers, energy communities, and independent aggregators—which are key to the integration of RES capacities and the management of system flexibility.

Under the new regulations, end-customers transform their status from passive consumers into active participants with the right to produce, store, and trade electricity. This model delegates management to the local level, granting energy communities and local authorities autonomy in managing their own energy resources.

In this context, ensuring system stability becomes a shared responsibility. The regulatory framework must guarantee non-discriminatory grid access by eliminating unjustified administrative barriers for small-scale producers and facilitating their inclusion in market balancing mechanisms.

A critical element in the new regulatory architecture is the concept of "energy sharing," which allows active customers to distribute energy produced from collective renewable capacities among themselves without being subject to excessive grid fees or complex administrative procedures. RED III mandates that Member States remove obstacles to this mechanism, ensuring it is also accessible to low-income households.

Consequently, decentralization is not only a technological tool but also a socio-economic instrument. By fostering energy communities, the legislation aims to combat energy poverty by providing vulnerable consumers with direct access to cheaper, locally produced energy. In this way, the energy transition is transformed into an inclusive process where the benefits of decarbonization are distributed fairly, and regulatory bodies assume the role of guarantors for social cohesion and consumer protection within a dynamic market.

2. REGULATORY REGIME OF DECENTRALIZATION: STRUCTURAL AND FUNCTIONAL CHARACTERISTICS OF THE REGULATORY MODEL

The decentralized model is not merely a technical distribution of capacities, but a new legal architecture that reshapes the hierarchical relationships between the regulator, operators, and consumers. Its specificities manifest in three primary areas:

2.1. Horizontal Legal Relations and "Network Neutrality"

Traditional vertical "state monopoly–customer" relationships are being replaced by horizontal contracts and a transformation of the network operator's role from a "trader" into a "neutral facilitator." Its legal role is to ensure non-discriminatory grid access for a multitude of small participants, guaranteeing technical safety without imposing economic barriers. The process of integrating energy from renewable sources necessitates a transformation of the market structure, replacing the traditional hierarchical system with a model based on decentralized production capacities and local consumption. The normative recognition of the status of "active customers" and "energy communities" redefines the functions of network operators. Within this framework, digitalization and Smart Grids are established as imperative technological and legal instruments for ensuring system balance at the local level.

According to Directive (EU) 2018/2001 (RED II) and Directive (EU) 2019/944, which define the decentralization model, the legal structure of the decentralized model is based on two main types of entities: renewable energy communities and citizen energy communities.

2.2. Institutionalization of "Flexibility" as a Legal Object and the Localization of Legal Regulation

The decentralized model introduces flexibility (the ability to adjust consumption/production in real-time) as a commodity with legal value.

- Balancing Services: The legal framework must allow small entities (via aggregators) to participate in the balancing energy market. This requires new types of standardized contracts and a refinement of balancing responsibility, which in the centralized model was borne by a few large power plants.

This model is characterized by increased resilience, yet simultaneously entails higher administrative and technical complexity. This necessitates the implementation of a dynamic regulatory framework capable of adapting to the intermittency of production and real-time changes in grid load.

2.3. Decentralization of Market Management

The state regulatory body is ceasing the practice of directive planning regarding production volumes and is moving toward establishing a market framework that guarantees small-scale producers the right to freely sell surplus energy. The functioning of this model is predicated on the normative introduction of Smart Metering systems, which allow for real-time accounting. It is imperative to integrate dynamic electricity tariffs that reflect price fluctuations on organized exchange markets on an hourly basis, aiming to provide price incentives for consumers to optimize their load profiles during periods of RES overproduction.

3. TRANSPOSITION AND ADAPTATION OF EU LAW INTO THE NATIONAL FRAMEWORK: ANALYSIS OF AMENDMENTS TO THE ERAS

3.1. Legal Regime and Subject Composition of Decentralized Production under the ERAS

The legal framework for decentralization in Bulgaria is structured around three main pillars within the Energy from Renewable Sources Act, which regulate the status of new participants and their scope of competence.

3.1.1. Active Customer (Art. 18a of the ERAS) The legislator regulates the status of the "end-customer as an active customer," granting them the right to produce energy for their own consumption, to store it, and to sell the surplus on the market.

Pursuant to § 1, item 59 of the Additional Provisions of the ERAS Act, this is an entity operating on its own property for whom energy production is not a primary commercial activity (applicable to non-household consumers).

Provisions under Art. 18a, para. 1–4 guarantee the right to participate in support schemes and energy markets without the entity losing its status as an end-customer.

3.1.2. Renewable Energy Community (Art. 18b of the ERAS Act):

The legislator regulates collective participation in the energy transition through the figure of the "Renewable Energy Community" (REC). It functions as an autonomous entity uniting local resources and consumers.

Legal Definition (§ 1, item 56 of the AP of the ERAS): An REC is an entity based on open and voluntary participation; it is independent and effectively controlled by its shareholders, partners, or members (natural persons, SMEs, or municipalities). The definition requires the community to own and manage RES installations and consumption sites located within an urbanized area.

The primary objective of an REC is to provide environmental, economic, or social benefits to the local community rather than generating financial profit. The entity may take any legal-organizational form, provided it meets the criteria for independence and control.

Pursuant to Art. 18b, para. 2, the community has a legally recognized right to:

- Produce, consume, store, and sell energy from renewable sources;
- Share produced energy among its members while maintaining their rights as end-customers;
- Access all energy markets directly or through aggregation.

The requirements of Art. 92b of the Energy Act apply accordingly to renewable energy communities.

3.1.3. Citizen Energy Community (Art. 92 et seq. of the Energy Act)

The ERAS does not contain a separate regulatory framework for Citizen Energy Communities (CECs), as they are entities of the general electricity market, whereas the ERAS Act specifically regulates Renewable Energy Communities (RECs).

A "Citizen Energy Community" is a legal entity whose regulation is integrated into the general framework of the electricity market via the Energy Act.

Legal Definition (§ 1, item 76 of the AP of the Energy Act): A CEC is a legal entity that:

a) is based on voluntary and open participation and is effectively controlled by members, partners, or shareholders who are natural persons, local authorities (municipalities), or small enterprises;

b) has as its primary purpose the provision of environmental, economic, or social community benefits for its members or shareholders or for the local areas where it operates, rather than financial profits; and

c) may engage in generation, including from renewable sources, distribution, supply, consumption, aggregation, energy storage, energy efficiency services, or charging services for electric vehicles, or provide other energy services to its members or shareholders.

The regulation of the Citizen Energy Community in Bulgarian legislation was introduced through references to the European framework; however, at present, the core operational rights of CECs in the Energy Act are systematized in Art. 4, para. 2, item 21 (as part of state policy) and detailed in Art. 92 et seq. concerning the free market and aggregation. [14]

In general, the organizational rights of a CEC are:

Energy Sharing: The community has the right to organize the sharing of electricity generated from its production facilities, ensuring that the rights of its members as end-customers are maintained.

Cooperation with Operators: Grid operators are obliged to cooperate with CECs to facilitate energy transfers within the community under non-discriminatory conditions.

Unlike an REC, a CEC is not restricted by a requirement for "urbanized territory."

A CEC can operate with any type of electricity, whereas an REC is strictly limited to renewable energy sources.

4. ADMINISTRATIVE AND LEGAL REGIME FOR GRID CONNECTION WITHIN THE PROCEDURAL FRAMEWORK ACCORDING TO ORDINANCE NO. 6 OF MARCH 28, 2024

With the entry into force of the new Ordinance No. 6 of March 28, 2024, on the Connection of Facilities to Electricity Networks, the administrative burden on energy communities has been significantly reduced through the introduction of the following preferential conditions and procedural reliefs:

4.1. Accelerated and Simplified Procedural Framework for Connection (Art. 2, para. 7)

The new ordinance allows the feasibility study of connection conditions for RES production facilities (including those owned by communities) to be conducted under the simplified procedure of Art. 22 of the ERAS. This includes:

- Shortened deadlines for the issuance of opinions by network operators.
- Notification-based connection for small-scale installations that are part of the consumption facilities of community members.

4.2. Legal Qualification and Connection of Facilities in "Internal Installation" Mode (Art. 4, para. 1)

Pursuant to Art. 4, para. 1, when a community builds an installation connected to an existing consumption facility (e.g., on the roof of an administrative building or a residential block), it is treated as part of the already connected facility. This eliminates the need to open an entirely new customer account and avoids cumulative administrative requirements for establishing a new point of connection.

4.3. Guaranteed Non-discrimination (Art. 3, para. 2)

According to the ordinance, network operators may refuse the connection of energy community facilities only in cases of a proven threat to the security of the energy system or the quality of supply.

4.4. Commissioning and Temporary Schemes (Art. 2, para. 8)

The ordinance provides the possibility for energy transmission immediately following commissioning under the Spatial Planning Act, including under temporary access schemes, which allows for a faster start to energy-sharing activities.

4.5. Licensing Reliefs (Art. 10, para. 3 and para. 5)

Within the framework of a closed electricity distribution network (e.g., in industrial zones or complexes), the licensing regime is relaxed, allowing for the issuance of a license for energy facilities with integrated activities spanning one or more land plots.

The presented analysis outlines three levels of decentralization in the Bulgarian energy sector, which transform the end-customer from a passive consumer into an active market participant.

The main conclusions are as follows:

- The Active Customer (Art. 18a of the ERAS Act) represents the most accessible form of decentralization, focusing on individual energy independence and the right to self-generation and storage.
- The Renewable Energy Community (Art. 18b of the ERAS Act) is a strictly defined entity for the local self-management of green energy, limited by requirements for geographical proximity and the placement of assets within urbanized territories.
- The Citizen Energy Community (Art. 4, para. 2, item 21 and the AP of the Energy Act) constitutes the broadest framework for collective participation; it is technologically neutral and allows for the integration of diverse energy services (such as aggregation and EV charging) without territorial restrictions.
- The new Ordinance No. 6 of 2024 completes this legal framework by providing the necessary administrative reliefs and shortened connection procedures. In this manner, the legislator not only legitimizes these new entities but also creates practical mechanisms for their operation, guaranteeing non-discriminatory access to both the grid and the market.

IV. CONCLUSION

Alongside the progress achieved, an objective normative inconsistency is observed, arising from the lack of conceptual synchronization between the Energy Act and the Energy from Renewable Sources Act.

While the EA regulates the macro-structural framework and centralized management with a view toward security of supply, the ERAS introduces a decentralized functional model based on horizontal connectivity and the autonomy of local energy resources.

4.1. Systemic Deficiencies of the Current Legal Framework:

4.1.1. Procedural Inconsistency for Entities with Hybrid Legal Status: When a Citizen Energy Community operates exclusively with renewable energy assets, it falls under the scope of cumulative application of the general market regime (under the EA) and the promotion regime (under the ERAS). The lack of a unified administrative procedure creates an unjustifiably high barrier to market entry. The entity is placed in a position where it must prove resource adequacy according to criteria applicable to large commercial companies, which neutralizes the preferences provided in the ERAS for socially oriented structures.

4.1.2. Conflict Between Territorial Determinacy and Technological Applicability: A conceptual conflict is identified between the restrictive requirement for

"urbanized territory" (§ 1, item 56 of the AP of the ERAS) and the possibility of locating RES capacities on agricultural land or outside the boundaries of settlements. This requirement places communities in a state of institutional disintegration: they possess the subjective right to generate energy but are deprived of their preferential legal regime solely on the basis of the territorial location of their production assets.

4.1.3. Lack of Secondary Legislation Methodology for "Energy Sharing"

Although the ERAS Act and the Energy Act legitimize the right to share energy, the Ordinance on Electricity Price Regulation and the Measurement Rules lack a defined mechanism for so-called virtual net metering. This renders the right to share a "hollow norm," as network operators have no legal obligation (or technical procedure) to perform the clearing and settlement of shared volumes between the individual customer accounts of members.

4.1.4. Regulatory Duplication of Oversight

The requirement for simultaneous registration in the registries of both the Sustainable Energy Development Agency and the Energy and Water Regulatory Commission, accompanied by differing reporting criteria, creates unnecessary administrative pressure. This leads to a regulatory gap regarding the protection of small communities, which are treated as professional market participants without possessing their commercial capacity.

These systemic contradictions necessitate urgent legislative synchronization to transform decentralization from a legal declaration into a functional market mechanism. [15]

4.2. Guidelines for Regulatory Alignment and Legislative Amendments

To achieve full operability of the subjective rights of energy communities and active customers, a subsequent normative consolidation is required in the following areas:

4.2.1. Amendments to the Electricity Trading Rules:

Regulation of "Virtual Net Metering": Introduction of a detailed clearing methodology, whereby the energy produced by the community is proportionally deducted from the individual consumption of its members within the same billing period.

Status of "Internal Supplier": Recognition of the right of communities to perform internal distribution and settlement without requiring an "electricity trader" license, provided the activity is restricted to the members of the community.

4.2.2. Refinement of Ordinance No. 6 of 2024 on Grid Connection:

Unified Notification Regime: Standardizing procedures for RECs and CECs by removing the "urbanized territory" requirement as a condition for simplified connection when the capacity is below 100 kW.

Obligation for "Dynamic Grid Management": Distribution System Operators should be mandated to provide real-time data regarding available connection capacity across grid branches to facilitate the planning of community projects.

4.2.3. Amendments to the Ordinance on Electricity Price Regulation:

Differentiated Grid Fees: Introduction of "local grid fees" for energy produced and consumed within the same community (low voltage), reflecting the fact that this energy does not burden the transmission network or medium-voltage transformers.

4.2.4. Creation of a "One-Stop Shop" Registry at SEDA:

Centralized Administration: Merging the registration regimes of SEDA and EWRC for small energy communities into a single digital portal. This will eliminate regulatory duplication and reduce administrative costs for these entities.

In the absence of the aforementioned regulatory corrections, energy decentralization in Bulgaria will remain in a state of functional inefficiency. Such a scenario leads to the blocking of the legitimate objectives of the ERAS Act by the conservative legal architecture of the Energy Act and the lack of an applied methodology in the secondary legislation.

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