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From transposition to inclusion: Energy sharing and distributive justice in Energy Communities. A comparative legal analysis of Czech and Hungarian frameworks[1]

Od transpozycji do inkluzji: podział energii i sprawiedliwość dystrybucyjna w społecznościach energetycznych. Analiza prawnoporównawcza regulacji czeskich i węgierskich

Abstract

This paper pursues a twofold objective: to examine whether the national regulatory frameworks of the Czech Republic and Hungary concerning energy sharing and Energy Communities (ECs) align with EU law, and to assess the extent to which they support distributive justice (DJ) principles, especially through ensuring the vulnerable consumers' participation. On that basis, recommendations for amending the regulations on ECs and energy sharing in the Czech Republic and Hungary, with guidance transferable to other EU Member States are formulated. The thesis of the paper is that, despite the formal transposition of the EU framework on ECs and energy sharing, Czech and Hungarian legislation only partially realise distributive justice goals, thereby constraining equitable and meaningful vulnerable consumers' participation. The authors conducted their research using dogmatic-legal and comparative methods. The study highlights regulatory gaps and recommends amendments.

Keywords: Energy Communities, energy sharing, distributive justice, vulnerable consumers, energy justice

Streszczenie

Celem artykułu jest ocena, po pierwsze, zgodności czeskich i węgierskich ram regulacyjnych dotyczących podziału energii oraz społeczności energetycznych (SE) z prawem UE; po drugie, w jakim stopniu te ramy regulacyjne urzeczywistniają zasady sprawiedliwości dystrybutywnej, ze szczególnym uwzględnieniem zapewnienia udziału odbiorców wrażliwych. Na tej podstawie sformułowano propozycje zmian regulacyjnych dotyczących SE i podziału energii w Czechach i na Węgrzech, wraz z wytycznymi regulacyjnymi możliwymi do zastosowania w innych państwach członkowskich UE. W artykule sformułowano tezę, zgodnie z którą pomimo formalnej transpozycji unijnych regulacji dotyczących SE i podziału energii, ustawodawstwa czeskie i węgierskie jedynie częściowo realizują cele sprawiedliwości dystrybutywnej, co ogranicza równy i realny udział odbiorców wrażliwych. W badaniach wykorzystano metody dogmatyczno-prawną oraz prawnoporównawczą. Zidentyfikowano luki regulacyjne i sformułowano rekomendacje zmian.

Słowa kluczowe: społeczności energetyczne, podział energii, sprawiedliwość dystrybutywna, odbiorcy wrażliwi, sprawiedliwość energetyczna

JEL: K23, K32

Preliminary remarks

Energy Communities (ECs) are a key instrument for implementing energy policy, particularly through the facilitation of energy sharing. ECs play a crucial role in achieving energy policy goals by promoting locally distributed energy generation from renewable sources and fostering the establishment of localised energy balancing areas. The concept of energy justice (EJ) has been extensively explored in the literature.[2] ECs serve as an instrument of just transition, supporting grassroots initiatives while fostering inclusivity in the energy transition. This dual role aligns ECs with the broader concept of EJ (Kupiec, 2024; Hanke, Guyet & Feenstra, 2021; Ikevuje et al., 2023), particularly distributive justice.

The relevance of ECs cannot, however, be appreciated without reference to the global and regional financial architecture within which the energy transition is being pursued. While the direction of the financial aspects of the energy transition seems to be defined, the national mechanisms for distributing the associated financial burden between developed and developing economies, and between public and private actors, seem to remain not fully settled.

This paper focuses on the regulatory frameworks for energy sharing within ECs in the Czech Republic[3] and Hungary.[4] As post-communist states with similar levels of economic development and both members of the EU and NATO, these countries face unique challenges, including significant energy poverty,[5] which impacts a decent standard of living and health.[6] Energy poverty has long been a critical issue in Central Eastern Europe due to low incomes, energy-inefficient housing, and limited access to diversified energy supplies, as well as insufficient disposable income for investments in energy efficiency or renewable energy sources (Bouzarovski, 2019). As ECs and energy sharing schemes are considered to help mitigate energy poverty (Koukoufikis et al., 2023), the Czech Republic and Hungary have been working on the implementation of these measures into national legal frameworks. The regulatory framework for energy sharing within Poland is not the focus of this study due to certain limitations and ambiguities in the existing legislation.[7] Although the bill amending the Law on Energy[8] and others of 28 July 2023 defines Citizen Energy Community (CEC, pol. *obywatelska społeczność energetyczna*) that operates exclusively in the field of renewable energy sources, the Polish regulations are only rudimentary. They serve as a direct transposition of EU directives into Polish law but fail to adapt them to local conditions and legal nuances.[9] Additionally, regarding energy sharing, Art. 11zl of the Law on Energy stipulates that the statutes or agreements of a CEC must specify how electricity produced by the CEC's own installations will be divided. However, it does not provide detailed statutory frameworks for the actual process of energy sharing. Moreover, the Polish law does not yet implement the new EU legal framework on energy sharing, which was introduced in Directive 2024/1711,[10] well after the July 2023 amendments. Consequently, the existing regulations fail to address the broader, more complex legal and practical considerations required for the effective operation of energy sharing mechanisms, and there is currently no legislative activity in Poland on energy sharing.

Two interrelated research questions are addressed in this paper: (1) to what extent the Czech and Hungarian legal frameworks governing ECs and energy sharing implement distributive justice principles (primarily through the effective participation of vulnerable consumers and households); and (2) whether the national rules on allocation, settlement, and network charges embody the requirements of distributive justice. Against this backdrop, the paper pursues a twofold objective: it examines whether the national regulatory frameworks of the Czech Republic and Hungary concerning energy sharing and ECs align with EU law, and assesses the extent to which they support the participation of community members – particularly vulnerable consumers and households – in these mechanisms. On that basis, it formulates recommendations for amending the regulations on ECs and energy sharing in the Czech Republic and Hungary, with guidance transferable to other EU Member States. The central thesis of the paper is that, despite the formal transposition of the EU framework on ECs and energy sharing, Czech and Hungarian legislation only partially realise distributive justice goals, thereby constraining equitable and meaningful participation of vulnerable consumers.

The authors conducted their research using dogmatic-legal and comparative methods. The dogmatic-legal method, whose primary objectives are to seek answers to questions regarding the validity of norms, their interpretation, systematisation, and the formation of concepts, was employed to analyse doctrinal positions and legal acts, such as Directive 2019/944 on common rules for the internal market for electricity (Directive 2019/944),[11] Directive 2018/2001 on the promotion of the use of energy from renewable sources (RED II),[12] and the energy laws of the Czech Republic, and Hungary. The comparative method, which highlights the similarities and the differences between legal solutions applied in different countries (Bailer, 2014), was used to analyse ECs regulations in the Czech Republic and Hungary, in the light of EU law and the principles of distributive justice. The countries were chosen for this study due to their similar historical backgrounds in terms of legal culture and legal systems. Both the Czech Republic and Hungary were part of the Habsburg Monarchy when the modern understanding of law was forming. After a brief period of independence in the first half of the 20th century, both countries joined the Warsaw Pact and adopted the principles of Soviet-socialist legal tradition (Mańko, 2022). Today, both are EU members and were among the first in Central Europe to incorporate energy sharing into their legal frameworks.

Understanding the conceptual framework of EJ is crucial to grasp the current changes in the energy laws of EU Member States. EJ is a concept concerned with the equitable distribution of the benefits and burdens of energy systems, as well as with ensuring more inclusive and

participatory decision-making in the energy sector. EJ has four functions (Heffron, 2023):

1. Connecting individual desires with community values,
2. Resolving disputes beyond individual preferences, reducing negative impacts,
3. Enabling better choices by distinguishing fairer outcomes,
4. Creating conditions for mental well-being, through solidarity, virtue, and reason.

Justice has both individual and social dimensions; it concerns the fair distribution of fundamental rights and resources among individuals based on their needs. EJ has a significant impact on European energy regulation, particularly on directives governing ECs, specifically Directive 2019/944 and RED II. EJ can lead to more equitable energy policies, ensuring the rights of those excluded from energy access or harmed by environmental changes (Heffron & Sokołowski, 2024). The five main principles of EJ are: distributive, procedural, restorative, recognition, and cosmopolitan justice.

Distributive justice (DJ) is central to EJ, ensuring the just distribution of the energy sector's benefits and burdens (Sokołowski et al., 2023). Defining the essential elements of distribution (its actors and the object of distribution) has been considered as the "cornerstone" of EJ (Paskevicius, 2020, pp. 182–183). Legal provisions must avoid disproportionate burdens on any social group (McCauley, 2018, p. 10). DJ aligns with EU values, such as protection of consumers, and recognising inequalities between professional and non-professional market actors (Paskevicius, 2020, pp. 171), as it aims to ensure equal access to affordable, clean energy for all, regardless of income, race, or location (Czarnecka & Kraśniewski, 2023, pp. 193–197). Achieving DJ through energy sharing requires equal access to energy and fairness in the allocation of financial burdens and benefits associated with it. Energy sharing, as a tool for DJ, aligns with the concept of the sharing economy (Diestelmeier & Cappelli, 2023, p. 18). DJ is strongly connected with procedural justice as it emphasises fairness in decision-making processes, requiring active participation from stakeholders in decision-making processes (Kupiec, 2024, pp. 60–63).

The cosmopolitan dimension of energy justice grounds the principle of DJ within the international legal and political framework governing just energy transitions. The Paris Agreement acknowledges in its preamble "the imperatives of a just transition" (Paris Agreement, 2015, p. 2) and mandates the provision of climate finance to support mitigation and adaptation, consistent with the long-term temperature objective of Art. 2(1)(a) and the finance flow alignment requirement of Art. 2(1)(c). The International Labour Organisation's Guidelines for a Just Transition (ILO, 2015, pp. 6–10) specify that social protection and safeguarding vulnerable groups are essential components of a credible decarbonisation strategy. The Silesia Declaration on Solidarity and Just Transition, adopted at COP24 (UNFCCC, 2018), elevated this connection to an intergovernmental political commitment. This trajectory was subsequently institutionalised through the Sharm El-Sheikh Implementation Plan, the establishment of the Just Transition Work Programme at COP27 (Decision 1/CMA.4, paras. 50–52), and its operationalisation as the UAE Just Transition Work Programme at COP28 (Decision 3/CMA.5). When considered alongside the First Global Stocktake outcome, which calls on Parties to contribute to "transitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner" (Decision 1/CMA.5, para. 28(d)), and the IPCC's conclusion that equity and just transitions are enabling conditions for pathways compatible with 1.5°C (Denton et al., 2022, pp. 1768–1769), this framework demonstrates that DJ within Energy Communities is not solely an EU law concept, but represents the detailed implementation of a binding international obligation to ensure that no household is left behind.

The issue of who receives the benefits of energy sharing, under what conditions, and who bears the related costs, cannot be answered only by reference to the amount of electricity allocated among members or the structure of network charges. It also depends on whether the rules governing ECs create inclusive procedures, recognise the differentiated position of vulnerable consumers, and introduce mechanisms capable of correcting pre-existing inequalities. Procedural justice, recognition justice, and restorative justice do not operate alongside DJ as separate normative claims. Rather, they function as conditions for its effective implementation.

Procedural justice requires energy-related decision-making to be inclusive and transparent so that affected communities can access relevant information, participate voluntarily and meaningfully, and influence decisions that shape their access to energy services, local infrastructure and the conditions of the energy transition (Shejale et al., 2025, pp. 2–3). Procedural justice relates to DJ because distribution fairness depends on inclusive and transparent decision-making. In ECs, this connection shows in voluntary, open membership and cooperation. Open membership keeps ECs from becoming closed, accessible only to households with enough capital, know-how, or property. Cooperation enforces the collective approach, requiring citizens, municipalities, distribution system operators, and the rest of the energy market's actors to interact. Without clear information, transparent rules, real participation, and the chance to influence benefits and burdens, vulnerable consumers can be excluded from energy sharing, even if permitted to join. Energy sharing may then reinforce existing inequalities instead of reducing them.

Recognition justice refers to the acknowledgement that individuals hold distinct social, cultural, and economic positions, and possess diverse identities (Valkenburg, 2024, p. 390). Within the energy sector, this concept emphasises the identification and consideration of the varying needs, values, and rights of individuals and communities regarding both passive and active participation in the energy market (van Uffelen, 2022, p. 2). It requires ECs and national legal frameworks to identify the actual social and

economic position of citizens affected by energy transition; households (and intended members of ECs) differ significantly in income, technical knowledge, housing conditions, digital skills or exposure to energy poverty. Recognition justice, therefore, requires that the situation of vulnerable consumers is not treated as marginal within ECs. Their position needs to be acknowledged and reflected in ECs by laws and energy sharing schemes, which means that, from the DJ's perspective, distribution cannot be based solely on formal membership or proportional investment. It must also consider whether certain groups require reduced entry costs, simplified procedures, targeted information, access to smart metering, or specific support to benefit from EC participation. The principle of voluntary and open membership should thus be understood substantively. It is not only a guarantee against arbitrary exclusion but also a requirement to remove practical barriers that prevent vulnerable households from accessing distributive benefits.

Restorative justice within the energy sector addresses the needs of individuals, communities, and the environment affected by energy-related activities, aiming to restore them to their pre-harm state (Hazrati & Heffron, 2021). In ECs, restorative justice relates to economic participation and local community concerns, meaning that a distributively just EC should use its economic value to address underprivileged members via solidarity funds, reduced fees, subsidised electricity, technical support for energy-poor households or local inhabitants affected by exploitation of fossil fuels in the local area.

DJ within ECs should be understood as the outcome of implementing all integrated energy justice principles within the regulatory framework. Procedural justice determines whether distributive decisions are made through inclusive, transparent, and participatory processes, while Recognition justice considers whether the legal and organisational framework properly identifies the groups requiring differentiated treatment. Furthermore, restorative justice assesses whether ECs can correct existing inequalities rather than distributing benefits to those already able to participate. The interconnection between DJ and other energy justice principles is particularly important for ECs, as the energy sharing scheme and the use of EC's revenues all have distributive consequences for its members. Therefore, ECs can contribute to a just energy transition only when their internal rules are designed not just to enable decentralised energy production, but also to ensure inclusive participation and tangible benefits for vulnerable consumers and local areas affected by the energy transition.

Energy sharing and Energy Communities in the EU regulatory framework

The Clean Energy for All Europeans package[13] led to the creation of legal instruments to achieve the EU's energy policy goals, such as ECs, defined as a collective framework for energy generation based on openness, democracy, and shared governance, benefiting members and the local community (Caramizaru & Uihlein, 2020, p. 4). EU law regulates two ECs models: Renewable Energy Communities (REC), governed by RED II, and Citizen Energy Communities (CEC), governed by Directive 2019/944. Both models share common features, such as legal personality, open and voluntary participation, and member control, aiming to provide environmental, economic, or social benefits. Key differences include RECs focusing solely on renewable energy, while CECs can operate in both renewable and conventional energy sectors. CECs also have a broader scope, including energy distribution, aggregation, energy efficiency services, and electric vehicle charging. ECs are vital for addressing injustices in the electricity sector (Hanke, Guyet & Feenstra, 2021, pp. 1–2). A key activity for ECs under EU directives is energy sharing, which involves the exchange of electricity produced by renewable energy installations owned or used by EC members. The recent Directive 2024/1711 introduced a new regulatory framework for energy sharing into Directive 2019/944. Recital 46 of Directive 2019/944 mandates that Member States facilitate energy sharing (Diestelmeier & Cappelli, 2023, p. 20) and ensure that energy sharing within ECs does not incur additional network charges or tariffs. CECs can arrange for electricity sharing within the community, requiring cooperation among stakeholders and governance bodies (Art. 16(3)(e) of Directive 2019/944). Article 2(10a) of the Directive 2019/944 defines energy sharing as the self-consumption of renewable energy by active customers, either generated or stored offsite or on shared facilities they own, lease, or rent, or from another active customer, for a price or free of charge. This definition specifies that energy sharing must involve renewable energy, emphasising local production and consumption. It allows members of RECs or CECs to engage in energy sharing if it is not their primary economic activity. Article 15a of Directive 2019/944 grants all households, small and medium-sized enterprises, public bodies, and other final customers (at the discretion of Member States) the right to participate in energy sharing as active customers, within the same bidding zone or a more limited area. CECs and RECs are preferred for this activity, as they can engage in energy sharing for their members. Energy sharing must occur within the imbalance settlement period and comply with taxes, fees, and network charges (Art. 15a(1)(d) of Directive 2019/944). While energy companies are excluded from sharing if it is their primary economic activity, they can still organise or manage installations (Art. 15a(1)(b) of Directive 2019/944). Participants in energy sharing must pay "non-discriminatory" and "cost-reflective" network tariffs (Art. 15a(4)(d) of Directive 2019/944), ensuring fair contributions to system costs. To align with DJ, Member States should adjust fees based on participants' economic capabilities.

The EU regulatory framework supports vulnerable consumers and those affected by energy poverty. Member States must implement non-discriminatory measures to ensure these groups can access energy sharing schemes

(Art. 15a(1)(a) of Directive 2019/944). Public energy sharing projects must ensure at least 10% of shared electricity benefits vulnerable or energy-poor customers (Art. 15a(1)(b) of Directive 2019/944), promoting social inclusion. Mini-solar systems (up to 800 W) on buildings (Art. 15a(2) of Directive 2019/944) reduce energy costs for vulnerable households, supporting self-sufficiency and EU energy policy goals. However, clear roles for third parties in energy sharing are necessary to prevent market manipulation by professional energy companies. EU directives should allow flexibility in energy allocation methods within ECs, with Member States able to set allocation rules based on usage patterns. Clear guidelines are needed to ensure fair, efficient and sustainable local energy systems.

The EU framework for ECs links international commitments on climate solidarity finance with legal mechanisms capable of reaching (vulnerable) households. The New Collective Quantified Goal on Climate Finance adopted at COP29 sets a floor of at least USD 300 billion per year by 2035 for developing-country climate action (Decision 1/CMA.6, paras. 7–8).[14] This is complemented by the Fund for Responding to Loss and Damage, operationalised at COP28 (Decisions 1/CP.28 and 5/CMA.5), the Green Climate Fund as the largest operating entity of the UNFCCC Financial Mechanism (GCF, 2025), and the Just Energy Transition Partnerships with South Africa, Indonesia, Vietnam, and Senegal as concrete vehicles channelling solidarity finance into national decarbonisation pathways (Center on Global Energy Policy, 2025; Csanadi & Helmeci, 2025; Karg et al., 2025; IEA, 2024, pp. 344–345).

Within the EU these global commitments are transmitted mainly through two binding instruments that bridge the international and the household level. The Just Transition Mechanism, with its Just Transition Fund established by Regulation (EU) 2021/1056, targets territorial cohesion in regions most affected by the transition, focusing also on vulnerable households (see Art. 8 and rec. 13–15). The Social Climate Fund, established by Regulation (EU) 2023/955, earmarks resources for vulnerable households, vulnerable micro-enterprises, and vulnerable transport users (Art. 1). Therein, ECs are recognised as eligible recipients of structural support (Art. 8(1)(c)). The Czech Republic and Hungary are net beneficiaries of both instruments (European Commission, 2024). At the sub-programme level, LIFE Clean Energy Transition funds the European Energy Communities Facility, the first EU instrument dedicated specifically to ECs (CINEA, 2025). The modest scale of this dedicated instrument[15] discloses a mismatch between the political prominence of ECs in EU legislation and the financial resources allocated to their deployment. If the question of who pays for vulnerable consumers' participation is not resolved at the national regulatory level, achieving DJ remains only a political aspiration. Gaps in the national enabling frameworks for CEC/REC simultaneously may translate into a failure to absorb global or regional climate-solidarity finance at the point where DJ within ECs is most concretely realised: the affordable energy price for vulnerable consumers.

Regulatory framework on Energy Communities and energy sharing in the Czech Republic and Hungary

Regulatory framework in the Czech Republic

The Czech Republic's 2024 amendment to the Energy Act (*energetický zákon*) implements RED II and Directive 2019/944, fostering energy sharing and ECs. Two types of ECs are defined: *Energetické společenství* (ES), aligned with CEC, and *Společenství pro obnovitelné zdroje* (SOZ), aligned with REC. Both models focus on environmental, economic, and social benefits. ES provides benefits to its members or local areas. Membership is open to individuals, small businesses, and municipalities, with voting rights limited to ensure local control (§ 20a(2)(c)). ES can produce, share, and distribute energy (§ 20a(2)(b)). SOZ focuses on renewable energy and restricts membership to individuals, small businesses, and municipalities near energy production facilities. They can generate and share renewable energy, promoting sustainable energy use and related services (§ 20b(2)(b)). Establishing an EC involves several legal and administrative steps. A legal entity, such as an association or cooperative, must be created and then registered with the Energy Regulatory Office (Energetický regulační úřad; ERÚ) (§ 20c(2)(e) of *energetický zákon*). Once registered, the EC can generate and share electricity. An ES or SOZ planning to operate a photovoltaic power plant with a capacity of up to 50 kW benefits from simple permitting procedures, including submitting a connection application to the DSO and signing a grid connection agreement (§ 20c(2)(b) of *energetický zákon*). Czech legislation explicitly recognises the rights of ECs to participate in electricity sharing. Art. 27e(1) of the *energetický zákon* grants ECs and their members the right to use public grids for electricity sharing, which reduces the costs of energy sharing schemes and expands participation. The registration and termination of transfer point assignments are free of charge. Electricity sharing in the Czech Republic is an accounting operation (*účetní operace*), where the energy supplier reduces the energy bill by the value of the shared energy consumed by that individual member.

Electricity sharing uses a static allocation method, where generated electricity is distributed among delivery points in fixed ratios. Allocation ratios can be adjusted monthly (§ 27d of *energetický zákon*). A multi-round allocation process is allowed for sharing groups with up to 50 members, enhancing the utilisation of generated electricity within the group. This approach aligns with DJ, ensuring that the allocation of goods and risks is proportional to electricity usage. For larger groups, a single round of energy allocation is required, simplifying management but also affecting the proportionality of distribution, potentially leading to abuses. Consumption points or generating stations cannot participate in multiple sharing groups, limiting the benefits of energy sharing, particularly where multiple renewable sources could complement each other (§ 27d of *energetický zákon*). Furthermore, distribution fees apply to

all electricity shared among EC members, with no exemptions for EC projects that hinder access for households affected by energy poverty. Each member of ECs participating in the energy sharing scheme is entitled to have a smart meter installed free of charge by the distribution system operator (§ 49(8) of *energetický zákon*). Electricity sharing requires the registration of delivery points and the allocation method with the Electroenergetic Data Centre. To participate, ECs or their members must register the assignment of transfer points to the sharing group, along with the method for allocating shared electricity. Electricity can only be shared from and to transfer points with interval metering (§ 27d of *energetický zákon*). Registration and termination of delivery points are free of charge (§ 27e(2) of *energetický zákon*). ECs engaged in energy sharing have the right to access data on electricity supply and consumption, including shared electricity data (§ 27e(5) of *energetický zákon*). If sharing is done for a fee, ECs must provide billing details to members and report the amount of shared electricity over an evaluation period (§ 27e(6) of *energetický zákon*).

The Czech Republic introduced energy-sharing in 2024 (Ministerstvo průmyslu a obchodu, 2024) with fast uptake. As of September 2025, the total number of participants in sharing electricity exceeded 30,000 (of which approximately 50 were ECs), and the total volume reached 43 GWh (Electroenergetic Data Centre, 2025). The price for shared electricity is governed by the agreements between the sharing groups' members. Even though the principles of DJ are not fully realised. The lack of mechanisms to identify and support those in energy poverty highlights the need for prioritising social equity in the regulatory environment. There are no legal provisions prioritising vulnerable consumers, which is a gap in the regulatory framework, hindering energy justice. Energy sharing in ECs is driven by financial considerations, not social equity, though energy sharing within ECs offers lower tariffs, but it is not designed for low-income households. ECs can distribute up to 33% of profits among members (Art. 20b(8) of *energetický zákon*), but there is no legal requirement to allocate revenue to energy poverty reduction. Regulatory frameworks should mandate that ECs allocate revenue to support those in need. The regulatory analysis reveals significant gaps in the implementation of the DJ principles in the Czech framework for ECs and energy sharing.

Regulatory framework in Hungary

The regulatory framework for ECs and energy sharing in Hungary is established in the Act on Electricity (Act LXXXVI[16]). An EC (*energiaközösség*, EK) is defined as a legal entity that can operate as a cooperative society or a non-profit business association (Art. 66/B. § (1) of Act LXXXVI). Its primary purpose is to provide environmental and social benefits rather than generate financial profits. EK may operate in generating, storing, and consuming electricity, providing distribution flexibility services, electricity sharing, aggregation, and offering electromobility services. The concept of RES (*megújulóenergia-közösség*, MK) is further specified under section 66/B § (1a) of Act LXXXVI, where such ECs may produce electricity exclusively from renewable energy sources. Control rights are vested in members whose electricity grid connection points fall within the same high or medium-voltage transformer station zone as the MK's facilities. Act LXXXVI also imposes operational restrictions on ECs. Article 66/B § (2) prohibits ECs from engaging in transmission system management, electricity distribution, electricity trading, or operating an organised electricity market. Art. 66/B § (5 and 6) stipulate that individuals or entities whose primary business activity is in the electricity and gas sectors cannot hold management positions within ECs, so the governance ensures democratic and transparent operations. The regulatory framework does not mandate the inclusion of vulnerable households in decision-making processes or the distribution of benefits, which means that ECs may not fully address social goals by supporting vulnerable consumers.

Electricity sharing (*Villamosenergia-megosztás*) is an activity defined for ECs under Art. 69a of Act LXXXVI, which allows ECs to share produced electricity or store it directly with other users or communities via public or private grids. Electricity sharing does not qualify as electricity trading or resale and is governed by contractual relations. However, the provisions on electricity sharing do not offer specific guidelines on how to share electricity via the public grid, nor clarify the differences between sharing for compensation and selling.

Due to the high investment costs and the lack of specific regulations enabling the allocation of shared energy within ECs, only four ECs have been registered in the national registry maintained by the Hungarian Energy and Public Utility Regulatory Authority (Magyar Energetikai és Közmű-szabályozási Hivatal).[17] Although some Hungarian ECs, such as the well-known Bábolna project, are household-oriented and facilitate energy sharing (Budapest Business Journal, 2024; Tények, 2024), the regulatory review highlights significant gaps and challenges within the Hungarian framework for energy sharing and ECs. Key issues include the lack of comprehensive implementation regulations, the absence of a multidimensional energy poverty definition, and barriers related to costs and membership fees. While electricity sharing has a legal definition, there are no detailed regulations to facilitate its execution. There is also no legal obligation for DSOs to install smart metering systems for ECs wishing to participate in energy sharing. Hungary's smart meters penetration rate is only 7% in final consumer households in 2022 (ACER, 2023). The lack of real-time data on consumption and prices hinders ECs' ability to engage in energy sharing. There is no clear definition of energy poverty, so the regulatory framework cannot properly address the needs of energy-poor households in ECs. This gap results in inadequate support for vulnerable consumers, leaving them underrepresented. Moreover, Hungarian legislation does not prioritise low-income households or those in energy

poverty, failing to embrace the principles of DJ fully. Connection charges for renewable energy installations in Hungary vary depending on the size of the customer. Customers can install small renewable energy installations up to their contracted capacity without incurring additional fees or a reduction in connection charges. These fees are calculated by the DSO using a methodology set by the regulator. Although the methodology is publicly available, the exact connection fee is determined on a case-by-case basis (European Commission, 2021). "Use of System Charges" apply to the energy required by renewable energy installations but not for injecting electricity into the grid. These charges are structured as a flat tariff, that includes both energy and capacity terms, raising concerns regarding DJ. Legal provisions should ensure the distribution of benefits and should not disproportionately burden any social group. The current Hungarian regulatory framework fails to meet this standard due to a lack of transparency, as the fee calculation process is opaque, relying on individual DSO studies. Additionally, there are no exemptions or reductions in connection fees for vulnerable consumers, potentially preventing their participation in energy sharing schemes within ECs.

Comparison of regulatory frameworks in the light of EU law and distributive justice

Energy sharing within ECs, under the EU, Hungarian, and the Czech frameworks, involves adjustments to electricity bills rather than physical electricity transfer. Once energy produced by an EC member enters the grid, it becomes indistinguishable. Significant improvements are needed to align these frameworks with DJ, ensuring vulnerable consumers are included and supported in energy sharing schemes. Currently, there is no incentive for ECs in the Czech Republic and Hungary to engage vulnerable consumers. To align with DJ, vulnerable consumers must receive direct benefits, such as discounted tariffs. Although energy sharing could bring macroeconomic benefits, it may initially increase operational costs for ECs and their external service providers, due to higher administrative, IT, procurement, balancing, and energy loss costs.

National regulators should address the risk of cross-subsidisation and potential reinforcement costs, depending on grid use. To support vulnerable consumers, their fees should be reduced, enabling their participation in energy sharing. To cover additional costs, ECs may require a reduction in ancillary costs and distribution fees, or an external premium. ECs could also receive an energy sharing premium for every kilowatt-hour produced and consumed, ensuring vulnerable consumers benefit from these schemes. This approach supports the economic viability of energy sharing projects and ensures equitable benefits distribution. Regulatory frameworks of the Czech Republic and Hungary reveal significant gaps in DJ. Both Czech and Hungarian regulations fail to guarantee that energy sharing projects managed by public authorities ensure that at least 10% of the shared electricity is accessible to vulnerable or energy-poor customers, as stipulated in Art. 15a.1.b of the Directive 2019/944, and fail to promote the implementation of plug-in mini-solar systems up to 800 W capacity in buildings (Art. 15a.2 of the Directive 2019/944). This is a missed opportunity to reduce energy costs for vulnerable energy consumers. ECs in the Czech Republic and Hungary are hesitant to involve vulnerable consumers in their activities due to associated costs (Holstenkamp & Kriel, 2022a). Accessing the benefits of an EC project typically requires a membership fee or the initial investment, which may exclude the most vulnerable and lowest-income individuals (Koukoufikis, 2021). The requirement for an initial investment in most ECs makes it unrealistic for energy-poor households to participate. A top-down comprehensive regulatory approach is essential to effectively address these gaps. Regulations on energy sharing should foster solidarity among EC's members – for example, an obligatory "solidarity fund" helping vulnerable members with energy bills payments or financing energy efficiency projects. These funds could have been supported through micro-donations from members, economic returns from EC's projects, or specific solidarity contributions integrated into energy bills. Integrating co-ownership models into ECs can empower vulnerable and energy-poor households by enabling them to benefit from renewable energy and participate in ownership. Regulations should explicitly state that vulnerable consumers are entitled to lower membership fees within ECs. EC solidarity funds may subsidise the cost difference.

Smart metering is crucial for enabling energy sharing within ECs, as it allows for the collection of metering data from energy generation installations and EC members' consumption points. However, neither the Czech Republic nor Hungary has prioritised a wide-scale roll-out of smart metering systems, particularly for vulnerable consumers (Vitiello, 2022), who face significant challenges in benefiting from smart metering in ECs, as these initiatives often target high-income groups (Johnson & Hall, 2014). To address this issue, regulations should prioritise free smart metering systems for vulnerable consumers within ECs. This would ensure vulnerable households can benefit from energy sharing.

EU Member States should also require municipalities to include ECs and vulnerable consumers in energy strategies, which is crucial for making ECs more accessible to vulnerable households. Municipalities should also establish policy goals ensuring energy sharing accessibility for vulnerable groups and supporting EC development through financial aid and resources. Local energy strategies should identify public spaces for renewable energy projects co-owned by citizens and ECs.

These national-level shortcomings also reveal an implementation gap in relation to the Parties' commitments under Art. 9 of the Paris Agreement and the just-transition elements of Decisions 1/CMA.5 and 3/CMA.5, which require the transition to be just, orderly and equitable and grounded in social dialogue with affected groups. The concept of just transition cannot retain its normative force if

it remains confined to programmatic commitments and is not reflected in enforceable entitlements at the level of individual energy users (Johansson, 2023, p. 243; Heffron & McCauley, 2022). Viewed from this perspective, the Czech and Hungarian frameworks appear to fall short of that standard.

Recommendations for legal amendments and conclusions

The analysis of national regulations of the Czech Republic and Hungary, and their alignment with the broader objectives of DJ, has highlighted several significant gaps and challenges. The exclusion of vulnerable consumers from energy sharing schemes remains a critical issue. The legal frameworks in both countries should be reformed to ensure that ECs serve as inclusive, equitable platforms for all members, particularly vulnerable consumers. The adoption of these legal amendments will not only align the national laws of the Czech Republic and Hungary with EU directives but will also ensure the genuine implementation of EJ principles within EU Member States. The recommendations presented in this paper may serve as a "checklist" in the process of establishing a legal framework for ECs and energy sharing in the national laws of EU Member States, ensuring that these frameworks both comply with EU directives and uphold the principles of DJ.

To fully realise the potential of ECs and energy sharing schemes and to better align the Czech and Hungarian legal frameworks with EU law and DJ principles, the legal amendments are recommended in the areas such as: inclusion of vulnerable consumers, DJ in energy allocation, smart metering for vulnerable consumers, energy sharing exemptions, community energy solidarity funds, municipal involvement and local energy strategies, as well as the articulation of multi-level financing mechanisms. The participation of vulnerable consumers should be prioritised in the legal frameworks for ECs. Legal provisions should mandate that energy sharing schemes offer reduced membership fees or subsidies for low-income households. Additional incentives, such as tax breaks or direct financial support, should be provided to encourage vulnerable consumers to engage in ECs. The allocation models used for energy sharing within ECs should be revised to ensure a more equitable distribution of energy resources. This could involve introducing flexible, needs-based allocation systems that account for the varying energy consumption patterns and financial capacities of members. Vulnerable households should be prioritised in the allocation of shared electricity. The roll-out of smart metering systems should be prioritised to ensure that EC's members can participate fully in energy sharing schemes. Legal amendments should mandate smart meters installations at no cost (especially for vulnerable households), with specific timelines for installation. Exemptions or reductions in grid charges and other related fees for energy sharing mechanisms should be introduced. This would ensure that the participation of low-income households in energy sharing mechanisms is not financially burdensome. ECs should be required to establish "solidarity funds" addressing vulnerable consumers' support. These funds could be supported by micro-donations from community members or returns from EC projects and used to finance energy efficiency projects, reduce energy costs, and provide financial assistance to low-income households. Municipalities should be legally mandated to integrate ECs into local energy strategies. This would involve setting policy objectives that promote collaboration with local projects providing social services and ensuring that vulnerable households benefit from community-based energy solutions.

Finally, the realisation of DJ within ECs requires an explicit articulation of the financing mechanisms supporting vulnerable consumers' participation. Member States should integrate the relevant streams of EU funding, particularly the Just Transition Fund, the Social Climate Fund and the LIFE CET sub-programme, into their national legal frameworks for ECs by earmarking a defined share of national Social Climate Plans for energy sharing schemes involving vulnerable consumers, by establishing a legal basis for solidarity premiums compensating ECs for the additional costs of including vulnerable members, and by recognising ECs as eligible beneficiaries of national funds derived from EU instruments. Such measures would translate the international commitments stemming from the Paris Agreement and from the New Collective Quantified Goal on climate finance into operational guarantees at the community level.

Notes/Przypisy

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[2] On EJ, see: Sokołowski et al., 2023; Sovacool & Dworkin, 2015; Paskevicius, 2020; Jenkins et al., 2016. On ECs, see: Caramizaru & Uihlein, 2020; Bauwens, Gotchev & Holstenkamp, 2016; Grigorios & Kyriakopoulos, 2022; Lode, Coosemans & Camargo, 2022; Gruber, Bachhiesl & Wogrin, 2021; Blasch et al., 2021; Kmieć, 2024; Kmieć & Pawełczyk, 2024.

[3] See the literature on ECs in the Czech Republic: Pechancová, Pavelkov & Saha, 2022; Frieden et al., 2020; Baldrianová, 2024.

[4] See the literature on ECs in Hungary: Vadovics, 2019; Kazsoki & Hartmann, 2020; Biró, 2022.

[5] Energy poverty as defined in Art. 2(52) of Directive (EU) 2023/1791 of the European Parliament and of the Council, [2023] OJ L231/1.

[6] Regulation (EU) 2023 of the European Parliament and of the Council of establishing a Social Climate Fund and amending Regulation (EU) 2021/1060.2023, [2023] OJ L130/1.

[7] On issues regarding the development of distributed energy in Poland, see Kostecka-Jurczyk & Struś, 2024.

[8] Ustawa z dnia 10 kwietnia 1997 r. - Prawo energetyczne, t.j. Dz. U. z 2024 r. poz. 266 ze zm.

[9] Compare the 'substantial deficiencies' mark granted by REScoop for Enabling Frameworks & Support Schemes for EC under Polish law. Aside from the activities related to the development of CEC, no enabling framework provisions have been established under the Law on Energy; https://www.rescoop.eu/policy/transposition-tracker/enabling-frameworks-support-schemes/poland (accessed: 7 October 2025).

[10] In the Directive (EU) 2024/1711 of the European Parliament and of the Council of 13 June 2024 amending Directives (EU) 2018/2001 and (EU) 2019/944 as regards improving the Union's electricity market design, OJ L, 2024/1711, 26.06.2024.

[11] Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU, Consolidated text, OJ L 158, 14.06.2019, p. 125.

[12] Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (recast), Consolidated text, OJ L 328, 21.12.2018, p. 82.

[13] See: https://energy.ec.europa.eu/topics/energy-strategy/clean-energy-all-europeans-package_en (accessed: 31 May 2024).

[14] Within a broader collective ambition of USD 1.3 trillion per year from all sources.

[15] Amounting to approximately EUR 7 million in grants for at least 140 emerging initiatives.

[16] 2007. évi LXXXVI. törvény a villamos energiáról.

[17] Hungarian Energy and Public Utility Regulatory Authority, *Villamosenergia-ipari engedélyesek és nyilvántartott társaságok listája*, www.mekh.hu/villamosenergia-ipari-engedelyesek-listaja (accessed: 17 April 2024).

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