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Just Energy Transition and Business Models: Seeking a Strategic Management Tool for Energy Communities

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Abstract: **Background:** Energy communities (ECs) are emerging as key actors in the shift toward a low-carbon and inclusive energy system aligned with the principles of just energy transition (JET). However, conventional business model tools often fail to reflect ECs' social missions, democratic governance, and environmental goals.
Research objectives: This study aims to evaluate the suitability of existing business model frameworks for analyzing ECs and to identify the components necessary for models aligned with JET.
Research design and methods: I conducted a qualitative literature review, examining sources to compare conventional and alternative business model frameworks based on criteria derived from JET principles.
Results: The analysis found that classical frameworks, such as the business model canvas (BMC), are insufficient for ECs, while alternatives like the triple layered business model canvas (TLBMC), social enterprise model canvas (SEMC), and value mapping tool (VMT) better address ECs' hybrid organizational logic.
Conclusions: Business model innovation must integrate social, environmental, and participatory dimensions to support ECs in advancing a JET.
Keywords: energy community, just energy transition, business model, cooperative governance
JEL Codes: L26, Q42, O35

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1. Introduction

The ongoing challenge of achieving climate neutrality and decarbonization has placed the energy sector at the heart of socioeconomic transformation. The Stern Report (2007) marked a turning point by framing climate change as a systemic market failure requiring urgent and coordinated responses. Yet, we cannot understand energy transitions solely as technical or environmental processes. They also entail a social focus, particularly in rural areas where livelihoods depend on agriculture and local resources (Olmedo et al., 2023). Rural regions face challenges of energy poverty, economic exclusion, and depopulation. Addressing these issues demands inclusive approaches that link equity, participation, and community ownership to the wider goals of the energy transition. In recent years the notion of a just energy transition

(JET) has emerged as a guiding principle in both academic discourse and policy frameworks. It emphasizes the need to ensure that the transition to a low-carbon economy is inclusive, democratic, and beneficial for all stakeholders (McCauley & Heffron, 2018). Confined within social entrepreneurship, JET appears as an important mechanism of socio-environmental change in its community-led forms (Markman et al., 2019; Fagerberg & Hutschenreiter, 2020).

Energy communities (ECs), which are grassroots, democratically governed, and mission-driven organizations, have gained renewed attention as key actors in operationalizing JET principles at the local level (Kostecka-Jurczyk et al., 2024). In rural settings, they often emerge around agricultural cooperatives, family farms, or village associations, reflecting the long-standing tradition of collective resource management. The principle of prosumerism, where producers are also consumers, is particularly relevant in farming households, which can combine food and energy production within a single socioeconomic unit. These rural organizations aim not only to deliver renewable energy, but also to ensure fair distribution of benefits, reduce household costs, and foster community empowerment (Huybrechts & Mertens, 2014). Additionally, the EC movement connects with the idea of implementing the sharing economy principles as sustainable development (Banaszek, 2020).

Despite their growing significance, existing business model frameworks are not suitable to capture the ECs' hybrid economic, social, and environmental objectives. Classical tools are focused on profit maximization and customer-centric value creation, while sustainability-centered extensions do not sufficiently integrate democratic governance, social entrepreneurship, or community-based ownership structures. The aforementioned characteristics are key in describing ECs. Consequently, we lack a widely accepted analytical framework tailored to the unique role of ECs in advancing a JET, which limits both its theoretical understanding and its practical application.

The present study responds to this gap by offering a structured review and comparative analysis of the business model frameworks used to analyze social enterprises and ECs. I investigated the extent to which the existing models account for the characteristics essential to JET, such as community participation, democratic ownership, social mission alignment, and environmental accountability.

The research question that guided this inquiry reads as follows: What business model frameworks are most suitable for EC analysis in the context of a JET? To address this question, the study had two objectives:

– to map the current state of business model management tools in the literature related to social enterprises and ECs;
– to identify the core components necessary for a business model framework aligned with the JET principles.

This research stemmed from the growing need for tools to support the ECs as part of a broader transition toward inclusive and sustainable society. Its contribution lies in offering a synthesis of existing models and advancing the conversation on how we can reimagine business models to support social innovation and energy democracy through usage of the right business tools.

In the study, I employed a qualitative literature review as the primary method. I drew upon academic articles, policy documents, and empirical typologies to compare various business model frameworks, using criteria derived from the JET literature.

The article proceeds as follows: First, I review the relevant literature on business models, ECs, and social enterprise frameworks. Second, I outline the research method and materials.

Third, I present the results of the comparative analysis and discuss their implications for theory and practice as well as offer suggestions for future research. As a conclusion, I provide a synthesis of my findings.

2. Literature Review

Energy Communities

Energy communities have become increasingly crucial to the European Union's (EU's) vision of a decentralized, low-carbon, and citizen-driven energy system. The EU's Clean Energy for All Europeans Package contains a legal definition of ECs as entities that enable citizens, local authorities, and small enterprises to jointly engage in energy production, consumption, and sharing (Agency for the Cooperation of Energy Regulators, n.d.). We can also categorize the ECs as innovative organizations helping solve societal and economic issues (Markowicz, 2019). Their legal form ranges from cooperatives to nonprofits or limited liability companies. Nevertheless, in all cases, their governance must be democratic and the primary focus must rest on the delivery of environmental, economic, or social community benefits rather than on financial profit (European Commission, n.d.). However, we might consider this view shortsighted, as Yunus et al. (2010) argue that despite such propositions of measuring the entity's actions through financial, social, and environmental benefits, ultimately only one bottom line usually matters: financial profit.

Nonconventional energy initiatives receive different labels across countries (Huybrechts et al., 2024). For instance, they operate as social renewable energy communities and grassroots initiatives in the Netherlands, citizen participation initiatives in Austria, ECs in Greece, and energy cooperatives in Germany and Poland (Dóci et al., 2015; Hatzl et al., 2016; Fajardo & Frantzeskaki, 2021; Veenman et al., 2021; Huybrechts et al., 2024). This linguistic plurality reflects institutional diversity, but from a management theory perspective, it dilutes construct clarity and obstructs the development of cumulative knowledge (Suddaby, 2010).

Importantly, the European Commission has addressed the differences in nomenclature within Europe, nesting those organizations and initiatives under the EC term:

> Energy communities allow local communities to join forces and invest in clean energy. Acting as a single entity means energy communities can access all suitable energy markets on a level-playing field with other market actors. Under EU law, energy communities can take the form of any legal entity including an association, a cooperative, a partnership, a non-profit organization or a limited liability company (European Commission, n.d.).

Standardizing the nomenclature under the European Commission's framework provides both analytical and practical benefits. It enhances construct validity by anchoring diverse local forms within a clearly bounded category. This allows actors to compare cases across geopolitical and social settings without losing sight of EC's essential attributes. Moreover, it enables managerial and financial relevance. Recognition within the EU framework gives ECs access to funding mechanisms, policy instruments, and legal protections.

Therefore, this article adopts the label EC not merely for terminological consistency, but also as a theoretical construct that aligns with the JET principles. This framing supports a more disciplined analysis of business models and organizational forms that bridge the domains of social entrepreneurship and community energy governance.

Although ECs serve as socially empowering entities, we categorize their activities as business-related (Huybrechts et al., 2024). Therefore, they need management as business units while incorporating social and environmental dimensions. To achieve that, we should consider the usage of business models as simplifications of real systems or as a redesign of an organization strategy (Zott et al., 2011; Massa et al., 2017; Sparviero, 2019).

The growing institutionalization of ECs across Europe reflects their alignment with the theoretical and practical logics of social enterprises. Social enterprises are hybrid organizations that operate at the intersection of civil society and the market, combining commercial tools with a mission-driven orientation (Defourny & Nyssens, 2010). They display three defining characteristics: a clearly articulated social or environmental mission; participatory governance involving stakeholders or community members; and reinvestment of profits into the organization's goals rather than their distribution to shareholders (Santos, 2012; Bocken et al., 2016).

Energy communities meet the aforementioned criteria. Their activities aim to accelerate energy transition while promoting energy justice, reducing emissions, and strengthening local resilience (Becker, 2017). Since the ECs' organizational principle often mirrors that of cooperatives, they share similar enterprise resilience in turbulent environments such as societal and economical challenges (Tkacz et al., 2015). They often utilize democratic governance based on the one member – one vote principle derived from cooperative models. This ensures that control remains distributed among participants rather than concentrated in the hands of capital investors (Huybrechts & Mertens, 2014). Moreover, ECs tend to reinvest their surplus revenue in community projects, infrastructure development, or further expansion of clean energy capacity, reinforcing their role as embedded social actors rather than profit-maximizing firms (Vancea et al., 2017).

Energy communities possess unique organizational features that make them distinct from conventional businesses and traditional nonprofits. They operate as distributed energy producers, relying on technologies such as solar photovoltaics, wind, or biomass to meet local needs. In rural areas, these models often become embedded in agricultural practices, where farms diversify into energy production as a strategy for economic stability. Their structure allows them to pool financial and social capital from a broad base of stakeholders, thereby creating collective prosumerism in which participants are simultaneously producers, consumers, and co-governors of local systems (Dóci et al., 2015; Brown et al., 2022). Beyond environmental outcomes, this integration strengthens rural livelihoods through community-based services, promoting social innovation and redistributing value across vulnerable rural groups (de Vidovich, 2024). Additionally, the core characteristics supporting organizations such as ECs can add to combating social capital discrepancies as described by Wieczerzak (2018).

What distinguishes ECs within the broader social enterprise landscape is their potential to operationalize JET principles at the community level (Manjon, 2025). As organizations committed to equitable participation and sustainability, they prove ideally positioned to address issues of energy poverty, democratic deficit, and environmental degradation (van Bommel & Höffken, 2021). However, this introduces managerial complexities: ECs must balance economic viability with social legitimacy, navigate regulatory asymmetries, and sustain active member engagement over time (Kostecka-Jurczyk et al., 2024).

Despite their practical and theoretical relevance, ECs remain under-integrated into the mainstream management discourse. The dominant conceptual tools used to analyze business models, such as the classical business model canvas (BMC), typically cannot seamlessly capture business relations within ECs. Scholars such as Wierling et al. (2022) discuss the issue in ques-

tion. Existing research by Dilger et al. (2017) and Mazzarol et al. (2018) explores how we can modify the BMC to match the EC context. Consequently, we need a deeper engagement with management theory to understand, support, and scale these organizations.

Business Model

The concept of a business model entered the lexicon of management theory in the late twentieth century, evolving from serving as a mere tool for identifying market propositions to representing managerial ideas guiding organizational operations (Chesbrough & Rosenbloom, 2002; Amit & Zott, 2007; Gibson & Jetter, 2014; Wronka-Pośpiech, 2017). At its core, a business model describes the logic by which an organization creates, delivers, and captures value, considering both internal and external conditions affecting its success (Osterwalder & Pigneur, 2010). The widespread adoption of business models has facilitated reflection and research, particularly their applicability beyond traditional commercial entities (Kożuch, 2013; Wronka-Pośpiech, 2017).

The field of business model innovation has expanded significantly, with tools such as the BMC by Osterwalder and Pigneur (2010) becoming the dominant frameworks for organizational analysis. However, these classical tools were designed for profit-maximizing firms, and their structure relies on customer-centric value delivery and financial sustainability (Yunus et al., 2010). As such, they fall short in capturing the unique governance structures, social missions, and stakeholder inclusivity that characterize ECs and other forms of social enterprises. This gap represents a serious limitation in the ability of researchers and practitioners to understand, design, and evaluate business models that aim to align economic, environmental, and social goals.

Osterwalder and Pigneur (2010) acknowledge these limitations of early business models, proposing modifications to the classic BMC in line with Elkington's (1994) triple bottom line (TBL) framework. Their TBL-BMC model proposes a foundation for sustainable development by encouraging organizations to pursue integrated value creation across three domains: economic, social, and environmental. Recent literature proposes extended or alternative frameworks, such as the triple layered business model canvas (TLBMC) (Joyce & Paquin, 2016). Still, we lack a widely accepted analytical framework tailored specifically to ECs. Moreover, despite its acknowledged role in facilitating equitable energy transitions, social entrepreneurship remains insufficiently integrated into dominant business model analyses.

A widely accepted tool in this domain is the BMC developed by Osterwalder and Pigneur (2010). The original BMC consists of nine building blocks: *value propositions*, *customer segments*, *customer relationships*, *channels*, *revenue streams*, *key activities*, *key resources*, *key partners*, and *cost structures*. Due to its visual and intuitive nature, the BMC became a mainstream tool in organizational planning, strategy design, and value creation analyses. While this conventional BMC serves effectively as a strategic management tool for commercial businesses, its limitations require adaptation or reconsideration. Adapted frameworks might provide an improved foundation for organizational forms such as ECs, where economic and socio-environmental missions intertwine. The BMC can serve as a useful analytical framework for ECs after its critical adaptation to incorporate their distinct social and environmental purposes.

The BMC presents considerable limitations when applied to nonprofit organizations. Its emphasis on value capture and profit orientation does not adequately account for the broader social, environmental, and community objectives that are central to mission-driven entities. The conventional BMC primarily targets profit-oriented organizations focusing on delivering

customer-centric value and financial performance and often neglecting the nuanced dimensions of social impact and stakeholder involvement (Yunus et al., 2010; Sparviero, 2019). As its primary shortcoming, researchers identify the inadequate reflection of value beyond economic outcomes, particularly when dealing with organizations aiming for broader socio-environmental objectives (Joyce & Paquin, 2016). In rural contexts, these limitations become even more pronounced. Business models ought to capture multifunctional realities where rural entities serve as sites of both food and energy production, cultural traditions and community identity shape organizational practices, and women's associations play a pivotal role in sustaining community-based initiatives (Musinguzi et al., 2023). Without incorporating these dimensions, conventional frameworks risk underestimating the complexity of ECs as rural social enterprises.

In response to these limitations, Osterwalder and Pigneur (2010) introduced variations of the original BMC, notably the third-party-funded model (TPFM) and the TBL model (Wronka-Pośpiech, 2017). The TPFM addresses scenarios where recipients of value differ from funders, typically seen in nonprofit organizations dependent on external financial support. The TBL model integrates economic, social, and environmental dimensions of sustainability, explicitly aligning the business strategy with principles of sustainable development as initially proposed by Elkington (1994).

Further adaptations have emerged to better capture the complexities faced by social enterprises. The social enterprise model canvas (SEMC), developed by Burkett (2013), explicitly incorporates components like *beneficiaries* and *social impact*, which resonate strongly with social enterprises' core logic of mission-driven value creation. Such refinements indicate the necessity to differentiate customer value propositions from broader societal contributions, ensuring alignment with mission-centric organizational designs.

A comprehensive approach by Lee (2015) integrates governance and sustainability explicitly within the business model framework, suggesting six components crucial for social enterprises: *value proposition*, *legal and governance structure*, *market scope*, *networked activities*, *resources*, and sustainability. This model recognizes that social enterprises must balance their strategic and operational objectives, aligning organizational governance and market strategies with mission-driven goals.

Another noteworthy adaptation is the circular economy value proposition (CEVP) framework proposed by Bocken et al. (2013). This model emphasizes the creation of environmental and social value by identifying the value actually created, missed, destroyed, or captured across stakeholder groups. It is particularly relevant for rural and community-based enterprises that rely on resource efficiency, closed-loop systems, and collaborative value creation.

Additionally, the sustainable business model (SBM) archetypes developed by Bocken et al. (2014) provide a typology of strategies through which organizations can embed sustainability into their business logic. Maximizing material and energy efficiency, creating value from waste, substituting with renewables, and adopting stewardship roles offer pathways for social enterprises to systematically design business models that align economic viability with environmental stewardship and social inclusion.

3. Research Method and Materials

This study employed a qualitative literature review approach to explore the existing business model frameworks relevant to ECs explicitly within the JET context. I chose a literature review for its suitability in addressing complex and multifaceted research questions, particu-

larly in emerging and interdisciplinary fields where exploratory synthesis is more appropriate than quantitative aggregation (Snyder, 2019). The rationale behind adopting this approach lies in its flexibility to integrate diverse theoretical perspectives and provide conceptual clarity about how existing business models align with the characteristics specific to ECs (Tranfield et al., 2003).

The objective of this qualitative review was twofold. First, I aimed to comprehensively map the existing business model frameworks that explicitly address social enterprises and ECs. Second, I wished to critically evaluate these frameworks through criteria derived from JET principles. This approach ensured a systematic yet flexible analysis that effectively contributes to scholarly discussions and managerial practices relevant to community-led energy initiatives.

The methodological framework of this research comprised two primary stages. At the first stage, I employed a structured search strategy within Scopus databases using specific search terms related to ECs, social enterprises, cooperative business models, and sustainability-oriented business frameworks. The selection process focused on peer-reviewed articles, academic monographs, book chapters, and policy documents. The timeframe of the selected publications spanned from 2000 to 2025.

At the second stage, I applied a qualitative content analysis to identify and categorize the core components of selected business models. This analytical process involved categorizing the literature insights through finding intersections with the JET principles derived from previous scholarly contributions. This approach facilitated a structured comparative assessment of the frameworks' strengths and limitations regarding their suitability for ECs.

The primary materials included peer-reviewed journal articles sourced from established academic journals such as *Energy Research & Social Science*, *Journal of Cleaner Production*, and *Annals of Public and Cooperative Economics*. I also added foundational theoretical works like Osterwalder and Pigneur's (2010) book *Business Model Generation* to ground the study within the established business model theory. Moreover, my study incorporated relevant gray literature, particularly policy reports and documentation from the European Commission, to provide regulatory and practical insights into the operationalization of ECs within the EU's energy policy context (European Commission, n.d.). Finally, I reviewed empirical case studies focused explicitly on energy cooperatives in Europe (Brown et al., 2022; Wierling et al., 2022) to validate the practical relevance and applicability of identified models.

The selection of business model frameworks for a detailed analysis followed specific criteria aligned explicitly with the JET principles. These criteria ensured that the chosen models reflected the ECs' unique characteristics. Specifically, I selected the models based on the following criteria:

- social inclusiveness and democratic governance: models explicitly incorporating democratic decision-making, cooperative governance structures, and community participation as foundational elements (Dilger et al., 2017);
- social and environmental impact integration: frameworks clearly articulating measurable social and environmental value propositions, demonstrating alignment with sustainability and equity-oriented strategic objectives (Joyce & Paquin, 2016; Giourka et al., 2025);
- stakeholder orientation: models emphasizing multi-stakeholder engagement and management, enabling clear mapping of value creation and distribution across diverse stakeholder groups, including local communities, cooperative members, and regulators (Bocken et al., 2013);

– economic viability and reinvestment mechanisms: models featuring explicit mechanisms for economic sustainability, financial transparency, and reinvestment of profits back into community welfare and sustainable energy initiatives (Huybrechts & Mertens, 2014).

These criteria collectively facilitated the selection of the most relevant business model frameworks for ECs, enabling this study to contribute meaningfully to both academic discourse and practical application in management practice.

4. Results and Discussion

The evolving landscape of energy cooperatives as an EC form has led to increased academic interest in their unique organizational structure and value propositions. The BMCs such as the one developed by Osterwalder and Pigneur (2010) remain foundational, yet they often omit the community-oriented and social dimensions characterizing ECs. Thus, scholars have proposed various adaptations and alternative frameworks specifically tailored to capture cooperative-specific characteristics, governance structures, and community-focused value creation. This growing diversity of approaches is not merely technical; it also reflects a paradigmatic shift in business model scholarship from a market-centric lens toward one that acknowledges plural forms of value (Joyce & Paquin, 2016; Sparviero, 2019). Table 1 presents a comparative overview of selected business model approaches relevant to EC analysis.

The presented business model frameworks specifically address the integration of social and environmental missions, offering analytical advantages when applied to ECs. The TLBMC proposed by Joyce and Paquin (2016) extends the traditional BMC by explicitly including social and environmental dimensions. The TLBMC comprehensively captures value creation beyond financial outcomes, assessing the cooperative's performance in environmental stewardship, lifecycle impacts, and community benefits. Similarly, the SEMC developed by Sparviero (2019) incorporates elements central to social enterprises, such as stakeholder engagement, governance mechanisms, social impact, and economic viability. Another notable framework is the value mapping tool (VMT) presented by Bocken et al. (2013), which allows organizations to visualize the value created, missed, destroyed, or captured across multiple stakeholders. This approach is particularly relevant to ECs that involve complex stakeholder interactions and social value creation beyond market-based profit considerations.

Empirical applications of these models to ECs further illustrate their utility. For instance, Brown et al. (2022) employed a typological framework similar in orientation to the TLBMC and the SEMC to analyze energy cooperatives across Europe. Their study categorizes energy cooperatives into four distinctive business model types based on their governance structures, value propositions, and community engagement strategies. For example, collective cooperatives display democratic governance, strong community participation, and distributed ownership, clearly resonating with the social and governance components captured by Sparviero's and Joyce and Paquin's frameworks. Their analysis underscores the importance of mapping value creation pathways among cooperative members, investors, local communities, and policymakers. It demonstrates how social and environmental missions shape strategic choices and cooperative structures.

In alignment with the JET principles, a business model framework suitable for ECs should incorporate several core components. Community participation and democratic governance must be integral, reflecting cooperative principles of collective decision-making and shared ownership (Dilger et al., 2017). The social and environmental value propositions require explicit

Table 1. Overview of Selected Business Model Approaches Relevant to EC Analysis

Authors	Year	Model name	Core components	EC relevance
Osterwalder & Pigneur	2010	Business model canvas (BMC)	Value proposition, customer segments, channels, customer relationships, revenue streams, key resources, activities, partners, costs	Lacks explicit social and community dimensions
Yunus et al.	2010	Social business model (SBM)	Social problem, social value proposition, social impact, sustainability, reinvestment	Captures mission-driven community logic
Bocken et al.	2013	Value mapping tool (VMT)	Value created, captured, missed, and destroyed across stakeholders	Relevant for stakeholder-centric and impact analysis
Huybrechts & Mertens	2014	Social enterprise business model archetypes	Market-based, hybrid, solidarity--based archetypes	Relevance for hybrid governance and cooperative logic
Joyce & Paquin	2016	Triple layered business model canvas (TLBMC)	Economic, environmental, and social layers: impact, community benefits, lifecycle considerations	Integrates social and environmental layers
Massa et al.	2017	Business models for innovation	Narrative structures, cognitive frames, strategic flexibility	Relevant for understanding evolution and innovation in cooperatives
Dilger et al.	2017	Cooperative-specific business model	Investor-oriented, prosumer--oriented; community vs market orientation; members' roles, promotion	Explicitly tailored to energy cooperatives
Mazzarol et al.	2018	Cooperative and mutual enterprise (CME) business model	Customer segments, value propositions, channels, relationships, revenue streams, key resources, activities, partnerships, costs	Cooperative-specific adaptation of BMC
Sparviero	2019	Social enterprise model canvas (SEMC)	Stakeholders, social impact, governance, economic viability, community needs, revenue streams	Designed explicitly for social enterprises
Brown et al.	2022	Typology of energy cooperative business models	Collective, lead, project-based, experimental types; ownership and governance logic	Specifically developed for energy cooperatives
Wierling et al.	2022	Statistical business model typology for energy cooperatives	Nine types, including feed-in tariff, electricity sales, leasing, contracting, coordinated purchasing, share purchasing, system management, and e-mobility	Directly applicable; empirically derived from German energy cooperatives

Source: Own elaboration.

articulation with clear indicators integrated into strategic goals and performance metrics (Giourka et al., 2025). Frameworks should clearly recognize and manage multi-stakeholder engagement, addressing interactions and value exchanges among community members, investors, and regulatory bodies (Mazzarol et al., 2018). Finally, given ECs' dual focus on eco-

nomic sustainability and social impact, business models should incorporate mechanisms for continuous reinvestment of financial surpluses into local community initiatives and sustainable practices, reflecting a commitment to long-term socio-environmental wellbeing (Huybrechts & Mertens, 2014).

These core components collectively support an approach to business modelling for ECs ensuring alignment with the JET principles and enhancing organizational capacity. Utilizing frameworks such as the TLBMC, the SEMC, and the VMT enables researchers and practitioners to systematically address the distinctive organizational characteristics and mission-driven orientations of ECs within the energy transition landscape.

Research has confirmed that while the traditional BMC remains influential, its structure lacks the flexibility to adequately capture the nature of ECs. We have seen the BMC applied to traditional for-profit ventures as well as to organizational forms such as public sector institutions, nongovernmental organizations (NGOs), and social enterprises (Gibson & Jetter, 2014; Wronka-Pośpiech, 2017). The classical BMC with its nine economy-centric components fails to account for cooperative governance or the reinvestment of value into local communities. Those elements are fundamental to ECs as JET catalysts. This misalignment necessitates the adoption or development of alternative frameworks that integrate social and environmental viewpoints. The analysis revealed a shift in focus toward more nuanced models that extend beyond market-based considerations.

Three frameworks stand out for their utility: the TLBMC, the SEMC, and the VMT. The TLBMC, developed by Joyce and Paquin (2016), enhances the standard BMC by adding environmental and social layers that assess lifecycle impacts, community benefits, and ethical dimensions. This model seems particularly well-suited to ECs, which simultaneously operate as energy producers and socially embedded actors. The SEMC, proposed by Sparviero (2019), introduces components such as stakeholders, governance, and social impact. Finally, Bocken et al.'s (2013) VMT complements this by enabling organizations to identify the value missed or destroyed across stakeholder groups, which becomes particularly relevant in cooperative settings, where equitable distribution is critical.

Empirical work reinforces the aforementioned theoretical insights, as Brown et al. (2022) demonstrated the applicability of adapted frameworks in their typological analysis of energy cooperatives across Europe. They grounded their categorization in factors such as ownership logic, governance design, and value proposition orientation. For instance, cooperatives, characterized by shared ownership and participatory governance, mapped closely to the TLBMC and SEMC components. Similarly, Wierling et al. (2022) offered a typology of German photovoltaic cooperatives, identifying distinct configurations associated with varying levels of community participation and stakeholder engagement. These cases underscore the practical need for models that go beyond economic abstraction to reflect ECs' social embeddedness.

The findings support the identification of four core components underpinning any business model framework aligned with JET. In rural contexts, these components assume specific meanings. Community participation and governance build upon traditions of collective farming and village solidarity. Social and environmental value propositions extend beyond energy to include food-energy linkages and rural heritage. Multi-stakeholder engagement must recognize the roles of farmers, rural NGOs, and local governments. Finally, reinvestment mechanisms often support rural infrastructure, social farming projects, or local initiatives, ensuring that economic gains directly contribute to reducing exclusion and sustaining development.

These components' presence not only enhances strategic coherence, but also operationalizes the JET ethos, positioning ECs as transformational actors rather than as marginal entities.

Building on the comparative analysis, I propose a synthesized framework for EC business modelling. This framework integrates the complementary strengths of the TLBMC, the SEMC, and the VMT. Therefore, a synthesis of these tools provides the conceptual foundation for what we may term an energy community business model framework (ECBMF). It aligns with the four core dimensions identified in this study:

1. Community participation and democratic governance. Drawing on SEMC and cooperative governance theory, this dimension emphasizes decision-making structures that distribute authority across members and stakeholders. It underscores rules such as the one member – one vote principle and transparency in financial and operational decisions. These elements ensure that ECs' governance models embody procedural justice, which is an essential element of JET.
2. Social and environmental value propositions. The TLBMC contributes here by extending the classical notion of value creation into environmental and social layers. We define an EC's value through energy generation and financial returns, but also through community benefits such as energy poverty reduction, local job creation, and emissions mitigation.
3. Multi-stakeholder engagement mechanisms. The VMT framework provides analytical depth for mapping value creation, capture, and exchange among diverse stakeholder groups. Within ECs, stakeholder engagement represents a continuous process of negotiation and balancing community objectives with regulatory and market constraints.
4. Reinvestment strategies for community benefit. A recurring feature in both social enterprise and cooperative models, reinvestment mechanisms ensure the channeling of financial surpluses or energy savings back into local communities. This aligns organizational sustainability with social reproduction and building resilience.

I intend these four dimensions to serve as interdependent layers of a single model. The ECBMF serves as a meta-framework integrating governance, value creation, stakeholder relations, and reinvestment flows. Its practical utility lies in enabling ECs to articulate and visualize their hybrid logic through a structured yet flexible model.

The proposed ECBMF synthesizes the most relevant analytical tools for hybrid organizations, while recent empirical studies substantiate its theoretical grounding. For example, Giourka et al. (2025) demonstrated how social innovation tools facilitate participatory governance and co-creation of value in Greek ECs, offering practical pathways for embedding JET objectives within organizational processes. Their findings echo this article's call for integrating social and environmental missions into managerial instruments. Kostecka-Jurczyk et al. (2024) provided evidence from Polish municipalities, showing that energy cooperatives contribute both to decarbonization and to local economic security. Their research underscores the necessity of using frameworks that balance financial, social, and participatory indicators, which goes in line with what the proposed framework seeks to achieve.

Essentially, the literature and model review undertaken in this study reveals both the limitations of classical tools and the emergence of frameworks capable of capturing the full scope of EC operations. The path forward involves adopting these models and refining them further, in line with empirical evidence and policy developments. In doing so, management scholarship can play a crucial role in enabling ECs to fulfil their transformative potential within the broader energy transition.

5. Conclusions

In this article, I set out to explore the applicability of existing business model frameworks to the organizational logic of ECs, particularly in the JET context. By examining a diverse range of models and assessing them against the JET principles, my study responds to a growing need within management scholarship to account for organizational forms that defy conventional constructs. The findings demonstrate that while classical tools offer a foundational language for business modelling, they remain insufficiently equipped to address the characteristics of ECs, especially those operating in rural regions.

A key contribution of this study lies in identifying alternative frameworks, namely the TLBMC, the SEMC, and the VMT as more suitable analytical tools for ECs. The aforementioned models incorporate elements such as community governance, social impact, and environmental stewardship, making them far more aligned with the nature of ECs. Empirical applications such as those by Brown et al. (2022) and Wierling et al. (2022) support this shift, which illustrates how adapted frameworks can capture the varied configurations and operational strategies of ECs across Europe. Importantly, when viewed through the rural lens, these models also provide analytical capacity to understand how ECs embed energy transition within the broader rural development.

Moreover, this article distilled four core components that any effective business model framework for ECs should include: community participation and democratic governance; clear articulation of social and environmental value propositions; multi-stakeholder engagement mechanisms; and reinvestment strategies that prioritize community benefit. These elements serve not only as analytical criteria but also as guiding principles for the design and scaling of ECs as legitimate actors in the energy transition. Stakeholder engagement extends to farmers, women's associations, and municipalities. The value reinvestment often supports rural infrastructure, care farming, or intergenerational inclusion (Musinguzi et al., 2023). Together, these features situate ECs not merely as energy actors, but also as catalysts of rural resilience and social innovation.

Beyond its analytical scope, the study offers practical implications for both scholars and practitioners. For scholars, it recommends greater inclusion of sustainability and social justice perspectives in management theory. For practitioners and policymakers, it provides a conceptual toolkit for designing, evaluating, and supporting ECs in ways that align with their normative goals and legal obligations within the European regulatory landscape.

The synthesis proposed here can serve as a diagnostic and design tool for ECs. Community leaders may use the identified four-block structure to assess their governance and value creation mechanisms. Policymakers can apply it to evaluate project proposals aligned with the JET objectives. In both cases, the proposed ECBMF operationalizes the abstract principles of justice and participation into practical business model elements.

From the managerial perspective, this study contributes to the broader understanding of how we can adapt business model tools to organizations operating at the intersection of sustainability, energy innovation, and social entrepreneurship. By highlighting the misalignment of conventional models and offering viable alternatives, the analysis supports practitioners in adopting frameworks that reflect the embeddedness of ECs in rural communities. For policymakers, the findings underscore the importance of designing institutional and financial support mechanisms that recognize ECs as rural social economy entities capable of addressing energy poverty and mitigating depopulation trends (Steiner & Teasdale, 2019). For researchers,

the study recommends conducting a more systematic investigation of rural social enterprises as integral actors in the energy transition.

However, I also recognize my study's limitations. The analysis remains primarily conceptual in nature and relies on a literature review. Future research should include empirical testing of the identified frameworks across diverse rural and urban ECs to validate and refine the proposed components. Additionally, I realize a need for dynamic modelling approaches that can capture the evolving nature of ECs as they adapt to regulatory, economic, and demographic changes. Comparative analyses across regions would be particularly valuable for identifying best practices in integrating ECs into rural development strategies. While not fully systematic, this review applies structured and transparent criteria to ensure the reliability and relevance of sources.

My study reaffirms the critical role of ECs in achieving a JET, with particular emphasis on rural areas. By linking renewable energy generation with agricultural livelihoods and community-based traditions, ECs embody a form of rural social innovation that addresses both energy and development challenges. Therefore, business model tools that integrate rural livelihoods, cultural identity, and participatory governance are essential for scaling these initiatives as legitimate actors in rural development. The path forward calls for a closer alignment between management theory, social economy practice, and socio-environmental transformation. Business model innovation, tailored to the specificities of rural communities, enjoys a unique position to enable ECs to realize their transformative potential.

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Conflict of Interest

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