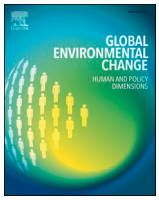
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Interpreting non-contestation: Institutional understandings of renewable energy projects and participation dynamics in Portugal

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ABSTRACT

Local decision-makers play a central role in shaping how renewable energy projects are governed, yet their interpretations of public attitudes often rely on limited forms of participation. This study examines how municipal councils, parish councils, and common lands committees in Portugal understand and manage wind and solar developments, with attention to participation, institutional friction, and energy justice. Drawing on semi-structured interviews with four municipal councils, seventeen parish councils, and four common lands committees, the findings show that support for Renewable Energy Sources (RES) is primarily framed in economic terms. Decision-making authority remains concentrated in formal institutions, while public participation is minimal and frequently viewed as unnecessary. This limited involvement is normalized by local actors and reinforced by institutional frictions—including unclear mandates for participation, low administrative capacity, and path-dependent routines—that constrain more inclusive engagement. In this context, the absence of contestation is often interpreted by institutional actors as acceptance, even when it is shaped by structural constraints rather than by meaningful consent. The results indicate that non-contestation is necessary but insufficient for assessing social acceptance or procedural justice. The prevailing pattern reflects governance arrangements in which distributive benefits are prioritized over participatory rights. The study highlights the need for policies that clarify participation requirements, strengthen administrative capacity, and embed transparency and deliberation in the governance of renewable energy projects.

1. Introduction

The global energy transition—driven by international commitments such as the Paris Agreement and the Sustainable Development Goals—has placed renewable energy sources (RES) at the center of climate mitigation strategies. In Europe, RES accounted for 47.5% of gross electricity consumption in 2024, up from 45.4% in 2023, driven mainly by wind (38.0%), hydropower (26.4%), and solar (23.4%) (Eurostat, 2026). Portugal follows this trajectory: in 2025, renewables accounted for 68% of electricity consumption (REN, 2026). Given the country's strong wind and solar potential and its 2050 carbon neutrality goal, renewable investments carry implications that extend beyond emissions reductions (De Oliveira et al., 2024; Robaina et al., 2025a), influencing electricity prices (Robaina et al., 2025b), housing (Robaina et al., 2026), labor markets (Hayaka et al., 2025), population health (Ramalho et al., 2025), fiscal indicators (Hayaka et al., 2024), and energy security (López-Maciel et al., 2024). However, technological feasibility alone does not guarantee successful deployment. Research consistently shows that public attitudes, community perceptions, and the governance of participation shape project outcomes (Batel, 2018; Ellis and Ferraro, 2016; Lima et al., 2025; Rojas-Peña et al., 2024; Zaharuddin et al., 2025) and that contestation can significantly hinder development (Susskind et al., 2022).

The transition also creates opportunities for regional development and for evaluating economic impacts and externalities, which are increasingly relevant. National-level studies have examined stakeholder awareness of technological alternatives (Ribeiro et al., 2014) and community perceptions of benefits and externalities (Botelho et al., 2017; Ferreira et al., 2019). Meanwhile, Portugal's renewable energy landscape has evolved through new participatory models, such as energy

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communities, and frameworks like the energy quadrilemma, which integrates energy justice alongside security, sustainability, and accessibility (De Luca et al., 2020). These shifts require renewed attention to how local perspectives and institutions shape the deployment of renewable energy.

Social acceptance is a multidimensional and contested concept. It is shaped not only by public attitudes but also by political, regulatory, and institutional dynamics (Susskind et al., 2022). Local governance actors—municipalities, parish councils, and common lands committees—play a central role in mediating project development, interpreting community reactions, and shaping the conditions under which acceptance is constructed. Issues of energy justice, particularly those concerning the distribution of benefits and burdens and the degree of public participation, are therefore essential (De Luca et al., 2020). Renewable infrastructures can affect aesthetic, cultural, and identity-related attributes of place (De Salvo et al., 2021), making local involvement indispensable. Residents living near wind or solar farms remain key stakeholders, but institutional actors often mediate the interpretation and action on their concerns.

The literature shows that acceptance is influenced by contextual factors (visibility, landscape, place identity), institutional factors (transparency, participation, procedural and distributive justice), and sociocultural factors (trust, environmental values, energy literacy) (Costa Pinto et al., 2021; Hogan, 2024; Roddis et al., 2020). Community ownership and benefit-sharing mechanisms can strengthen legitimacy (Hogan, 2024; San Martin et al., 2024), while a lack of meaningful engagement can trigger resistance, delays, or cancellations (Pasqualetti, 2011; San Martin et al., 2024). However, despite this extensive body of work, theoretical gaps remain. First, institutions are often treated as neutral containers in which attitudes unfold (Bourdin, 2026), overlooking their active role in shaping the interpretation of acceptance. This study argues that institutional frictions—limited capacity, unclear participation mandates, and routinized delegation—directly shape both the possibilities for participation and the institutional interpretation of acceptance. Second, although energy justice research has made important contributions to theorizing procedural justice (Boateng, 2025), it has insufficiently examined the institutional mechanisms that erode it (Amosi et al., 2025). Procedural injustice is frequently attributed to poor engagement design (Shejale et al., 2025). However, our findings show it is embedded in the functioning of local governance, where ambiguous frameworks and resource constraints narrow deliberative spaces. Third, insights from governance and institutionalist literatures—path dependency, administrative capacity, and sticky governance arrangements—remain insufficiently integrated into energy justice debates (Radtke, 2025; Swarnakar and Singh, 2022). By linking these dynamics to acceptance, the study shows that apparent support may reflect institutionally interpreted non-contestation, shaped by constrained governance environments rather than direct evidence of community attitudes.

Taken together, these gaps suggest that the widely observed pattern of limited contestation alongside minimal participation is not a paradox but an institutional outcome. Governance arrangements can suppress contestation and limit meaningful engagement, creating conditions in which non-contestation is interpreted as acceptance, even as procedural justice remains weak. Reframing acceptance as an institutional construct positions governance analysis as essential for understanding the democratic quality of renewable deployment and for designing models that can support more just energy transitions. Therefore, the lack of well-designed regulatory frameworks—which tends to generate discontent and dissuade public participation (De Luca et al., 2020)—requires urgent attention.

This paper, therefore, pursues three objectives. First, it documents how local decision-makers interpret and manage wind and solar projects, and how they define "participation," "acceptance," and "fairness." Second, it identifies the institutional conditions that shape interpretations of acceptance, showing how unclear mandates, limited administrative capacity, and routinized delegation can transform the absence of contestation into presumed consent. Third, it assesses the implications for energy justice, arguing that institutional interpretations of acceptance are an unreliable proxy for democratic quality and deriving policy insights on strengthening transparency, deliberation, and administrative capacity.

To synthesize the theoretical argument developed above, Fig. 1 presents the conceptual framework guiding this study. The framework proposes that institutional frictions—including unclear participation mandates, limited administrative capacity, fragmented authority, path-dependent governance routines, and low energy literacy—constrain opportunities for meaningful public engagement. Under these conditions, the absence of contestation may be interpreted by institutional actors as evidence of acceptance, producing forms of passive or delegated acceptance that coexist with weak procedural justice. Moreover, the ongoing reduction in procedural justice might also contribute to the persistence of institutional frictions, creating a reinforcing loop (see Fig. 1). In this regard, local communities that have experienced procedural injustice might disengage or become skeptical of local governance engagement initiatives (Gurčinaitė and Barbrook-Johnson, 2026), further perpetuating and accentuating institutional frictions as the energy transition advances. The framework, therefore, challenges linear assumptions that participation necessarily precedes legitimacy and acceptance. Instead, it highlights how governance arrangements themselves can shape both the expression and interpretation of acceptance in renewable energy transitions.

The article proceeds as follows: Section 2 presents the literature review; Section 3 details the methodology; Section 4 presents the findings on acceptance without participation, institutional barriers, and energy literacy; Section 5 offers a detailed discussion; and Section 6 concludes with policy implications.

2. Literature review

2.1. Concept and levels of social acceptance

Social acceptance of renewable energy is commonly conceptualized in three interdependent dimensions (Ellis and Ferraro, 2016): socio-political, community, and market. Socio-political acceptance denotes broad support for energy strategies, informed by climate risk perceptions, institutional trust, and assessments of collective costs and benefits. Community acceptance concerns local responses to project siting and is shaped by spatial proximity, visual externalities, place attachment, and principles of procedural and distributive justice. Market acceptance relates to investors' and consumers' adoption behaviors, conditioned by cost structures, incentive schemes, and regulatory stability (Batel, 2018, 2020; Ellis et al., 2023; Levenda et al., 2021; Wolsink, 2018). As Rojas-Peña et al. (2024) emphasize, these processes are multidimensional and context-specific, and cannot be reduced to simple measures of support or opposition.

At the same time, several studies stress that public and local participation in energy projects is complex and not inherently just or positive. Aiken (2017), for example, discusses the political dynamics of community participation and highlights post-political tendencies that can mask deeper conflicts and limit contestation. This literature suggests that acceptance should be understood not only as an attitudinal outcome but also as a construct shaped by institutional practices, participation designs, and governance arrangements.

"Social acceptance of renewable energy is commonly conceptualized in three interdependent dimensions… Community acceptance concerns local responses to project siting and is shaped by spatial proximity, visual externalities, place attachment, and principles of procedural and distributive justice."

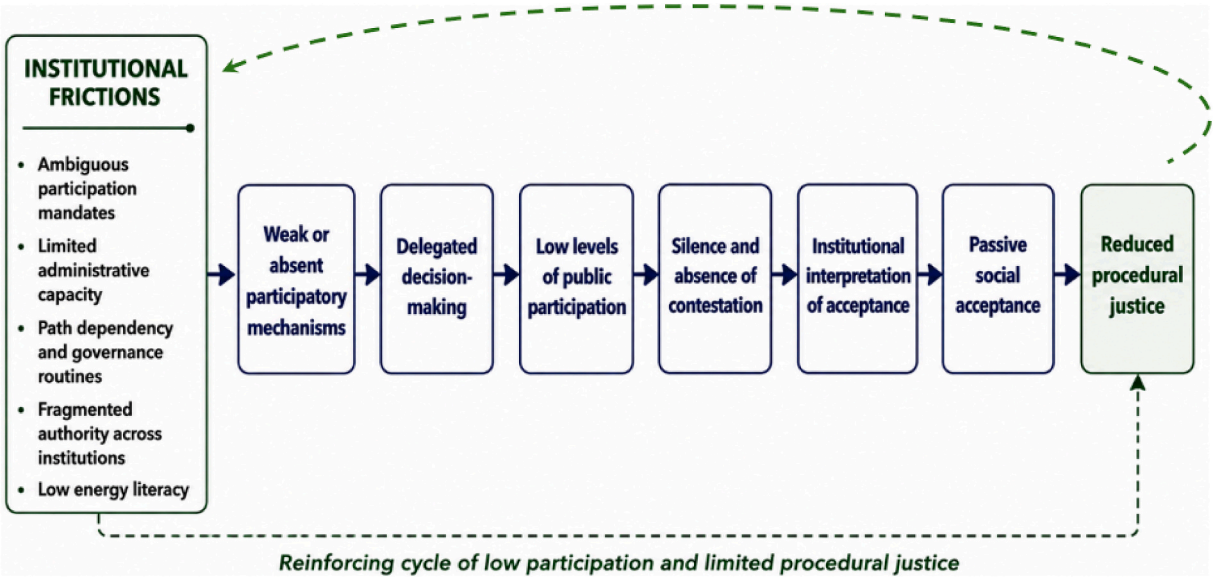


Fig. 1. Conceptual framework of the institutional production of passive social acceptance in renewable energy governance.

2.2. Determinants of acceptance

A substantial body of research examines public acceptance of renewable energy technologies (Conde and Takano-Rojas, 2025; Levenda et al., 2021). In Portugal, Costa Pinto et al. (2021) show—using a national survey combined with regional production data—that perceptions of wind, solar, and hydro depend on both personal factors (e.g., proximity, visibility) and regional technological dominance. They highlight landscape and aesthetic impacts as key determinants of acceptance and suggest that siting adjustments, design changes, and mitigation measures (e.g., visual barriers, environmental compensation) can improve community support. In southern Germany, Kiesbauer (2024) identifies a gap between personal acceptance and perceived public opinion ("pluralistic ignorance") based on surveys and interviews in three Baden-Württemberg communities, underscoring the need for clearer municipal communication.

Other studies emphasize the role of participation and benefit sharing. Hogan (2024), examining wind projects in Scotland, finds that community ownership and tangible benefits enhance procedural and distributive justice, thereby increasing acceptance. Roddis et al. (2020), using a mixed-methods study of a UK photovoltaic park, identify 28 determinants of acceptance across five dimensions (aesthetics, environment, economics, project details, and process) and show that participatory mechanisms—such as workshops and public hearings—reduce conflict and foster ownership. In Greece, Tsiaras et al. (2025) report higher acceptance of wind and solar among younger, urban, and more educated respondents, linking energy literacy to support for renewables. In rural areas, however, proximity increases resistance due to aesthetic concerns and perceived procedural injustice, suggesting the need for differentiated municipal strategies.

Conceptual syntheses also highlight the centrality of procedural justice. Ellis and Ferraro (2016) review European research on wind energy acceptance, showing that transparency, early engagement, and clear communication reduce distrust and opposition. Similarly, Rojas-Peña et al. (2024), in a bibliometric review of 40 years of research, identify wind as the most extensively studied technology and emphasize the importance of combining statistical analyses with local narratives to understand acceptance dynamics. Campos et al. (2023) explore regional differences in citizen satisfaction and values around solar energy in Portugal and Spain, illustrating that acceptance varies with social and cultural contexts and is not always indicative of equitable participation or justice.

Overall, the literature identifies proximity, visibility, aesthetics, energy justice, energy literacy, and ownership models as key determinants of social acceptance. Studies in Portugal and Europe show that greater physical proximity and stronger visual impacts tend to increase resistance (Costa Pinto et al., 2021; Pasqualetti, 2011), especially in rural areas where landscape and place attachment are central (Roddis et al., 2020). Procedural and distributive justice also play a decisive role: transparency, early engagement, and fair benefit sharing are essential for legitimacy and for preventing distrust and opposition (De Salvo et al., 2021; San Martin et al., 2024). Energy literacy moderates these dynamics—more informed, younger, and urban populations show higher support for renewables, while in rural areas, proximity and perceived procedural injustice reinforce resistance (Tsiaras et al., 2025). These findings point to the need for differentiated municipal strategies and targeted information campaigns (Costa Pinto et al., 2021; Tsiaras et al., 2025). Finally, community ownership models can strengthen acceptance by enhancing both procedural and distributive justice (Hogan, 2024).

"Overall, the literature identifies proximity, visibility, aesthetics, energy justice, energy literacy, and ownership models as key determinants of social acceptance."

Although this literature highlights the importance of participation, transparency, and distributive justice, it pays comparatively less attention to the institutional conditions that shape whether such practices are feasible. These gaps point to the need to examine how institutional frictions—such as unclear mandates, limited administrative capacity, and routinized delegation—structure the opportunities for engagement and influence how local actors interpret acceptance.

2.3. Barriers to acceptance and technological differences: wind vs photovoltaic

The literature identifies multiple barriers to onshore wind and solar photovoltaic deployment across policy, technical, social, and financial dimensions (Bessin et al., 2025; Obuseh et al., 2025). Wind projects typically face greater visual and noise impacts, biodiversity concerns, and more complex licensing requirements. In contrast, solar projects, though generally less visually intrusive, face regulatory fragmentation, high upfront investment requirements, limited institutional capacity, and resistance in heritage or tourism areas.

For wind energy, the most frequently cited challenges include policy uncertainty, insufficient transmission networks (Diógenes et al., 2020),

and fragmented institutional procedures that delay planning and licensing. Technical constraints such as weak grid infrastructure and the need for improved forecasting and storage also limit expansion (Diógenes et al., 2020; Obuseh et al., 2025). Social opposition often stems from aesthetic, noise, and landscape impacts (Diógenes et al., 2020; Obuseh et al., 2025; Pasqualetti, 2011), while limited community engagement and uneven benefit sharing reinforce resistance (Kitzing et al., 2024; San Martin et al., 2024). Financial and market barriers, such as high initial costs, economic distortions, and market failures, further affect project viability (Diógenes et al., 2020).

Photovoltaic deployment faces similar categories of barriers, but expressed differently. Regulatory and planning obstacles include complex and lengthy licensing procedures (Al-Haj Hussein et al., 2025; European Commission, 2024) and policy instability (Al-Haj Hussein et al., 2025). Financial and institutional constraints involve high investment costs, unstable support schemes, and limited access to credit (Al-Haj Hussein et al., 2025; Mustafa et al., 2024). Technical barriers relate to insufficient institutional capacity for installation and maintenance (Mathew and Nagaraja Pandian, 2024; Mustafa et al., 2024), while social and cultural barriers arise from information gaps, aesthetic concerns, and constraints affecting vulnerable groups (European Commission, 2024; Mathew and Nagaraja Pandian, 2024).

Table 1 summarizes the main differences between the two technologies. Overall, both technologies share common challenges—capital intensity, regulatory instability, intermittency, and low community engagement—but differ in their primary sources of conflict. Wind energy faces more pronounced visual, acoustic, and ecological constraints, often requiring additional mitigation and community involvement (Diógenes et al., 2020; Ellis and Ferraro, 2016; IFC/World Bank, 2020). Solar photovoltaic projects benefit from lower landscape intrusion and potential advantages through Renewable Energy Communities (RECs) and collective self-consumption, yet remain limited by licensing fragmentation, financing difficulties, and technical capacity gaps, particularly in sensitive territories such as touristic or historical areas (European Commission, 2024; Mathew and Nagaraja Pandian, 2024; Mustafa et al., 2024; Roddis et al., 2020).

Table 1
Main differences in barriers for the implementation of wind and solar photovoltaic energy.

	Wind Energy	Solar Photovoltaic Energy
Scale & Visual and Landscape Impact	Large installations with greater visual impact and social opposition (Diógenes et al., 2020; Pasqualetti, 2011).	Typically, small- to medium-scale; lower impact but with resistance due to aesthetic concerns (European Commission, 2024; Mathew and Nagaraja Pandian, 2024).
Licensing Processes	Generally, it is more complex, involving analyses of noise, shadow, and bird flight paths (Diógenes et al., 2020; Obuseh et al., 2025).	Simpler processes but still tied to urban planning and local regulations (Al-Haj Hussein et al., 2025; European Commission, 2024).
Community Engagement	Mitigated through benefit sharing and community ownership (Hogan, 2024; San Martin et al., 2024).	It can benefit from subsidies and community models, but less frequently (European Commission, 2024; Mathew and Nagaraja Pandian, 2024).
Technical Barriers	Integration into the network and the need for wind forecasting (Diógenes et al., 2020; Obuseh et al., 2025).	Limited technical knowledge, curriculum dependency, and weak institutional capacity (Mustafa et al., 2024; Obuseh et al., 2025).
Costs and Financing	High initial investments, but long payback periods (Diógenes et al., 2020; Obuseh et al., 2025).	Costs are declining, but challenges remain in accessing subsidy credit for small installers (Mustafa et al., 2024; Obuseh et al., 2025).

Across both technologies, barriers are not only technical or social but also institutional, reflecting fragmented authority, procedural complexity, and uneven administrative capacity. These dynamics create forms of institutional friction that can constrain participation and shape how non-contestation is interpreted as acceptance in local governance settings.

2.4. Perceived advantages and disadvantages of renewable energy projects

Renewable energy projects are associated with a wide range of perceived economic, environmental, and social benefits, including job creation (Ma and Wang, 2025), increased municipal revenues (Andrade-Arias et al., 2025), emissions reduction (Görsch et al., 2025), and strengthened local cohesion through benefit-sharing mechanisms (Lee et al., 2026). At the same time, they also generate perceived disadvantages such as landscape alteration, biodiversity impacts, intermittency, high upfront costs, and bureaucratic complexity. Wind projects are particularly linked to visual and noise impacts (Danesh et al., 2025; Ramalho et al., 2025), while solar projects raise concerns about land use and visual integration in sensitive areas (Mulvaney et al., 2025; Rösch and Fakharizadehshirazi, 2025).

On the benefits side, the literature highlights economic gains as a central driver of support for RES. These include direct and indirect employment during construction and operation (Ma and Wang, 2025; San Martin et al., 2024), and increased municipal revenues from taxes and fees (Andrade-Arias et al., 2025; Costa Pinto et al., 2021; Hayaka et al., 2024; IFC/World Bank, 2020), which contribute to perceptions of local development. Environmentally, RES projects are viewed as essential for reducing greenhouse gas emissions and meeting climate targets (Ellis and Ferraro, 2016; Rojas-Peña et al., 2024), with perceived improvements in air quality and quality of life reinforcing acceptance (Görsch et al., 2025). Socially, benefit-sharing mechanisms—such as community ownership, reduced tariffs, and funding for local projects—can strengthen energy justice and local legitimacy (GPI, 2025; Hogan, 2024). Wind energy often generates community funds and supports ownership models that reinforce distributive justice (Hogan, 2024; Pfeiffer, 2026; San Martin et al., 2024), while solar photovoltaic projects are associated with lower visual impacts, potential savings through collective self-consumption, and reduced land-use conflicts when installed on non-agricultural land (Roddis et al., 2020; Tsiaras et al., 2025).

However, several disadvantages affect acceptance and may lead to resistance (Benetti et al., 2026; Zaharuddin et al., 2025). Common concerns across technologies include landscape change, biodiversity loss, intensive land use (Benetti et al., 2026; Ellis and Ferraro, 2016; IFC/World Bank, 2020), intermittency and the need for storage and grid reinforcement (Hogan, 2024; Rojas-Peña et al., 2024), and high upfront costs combined with complex licensing procedures (Roddis et al., 2020; Tsiaras et al., 2025). For wind energy, visual intrusion, noise, shadow flicker, and ecological impacts—particularly on birds and bats—are frequently cited and can strongly affect place identity and local opposition (Costa Pinto et al., 2021; Ellis and Ferraro, 2016; Görsch et al., 2025; IFC/World Bank, 2020). These concerns are especially salient in rural areas with strong territorial attachment (Görsch et al., 2025; Roddis et al., 2020). Solar photovoltaic projects face disadvantages related to land requirements, potential conflicts with agriculture, and ecological pressures (Tsiaras et al., 2025). Although generally less visually intrusive, solar installations may face resistance in tourism or heritage areas where visual integration is critical (Roddis et al., 2020). Technical limitations such as dependence on climatic conditions and reduced efficiency during low-radiation periods also shape perceptions (Rojas-Peña et al., 2024).

Across both technologies, the literature identifies several shared challenges: intermittency and the need for storage and smart grids (Obuseh et al., 2025; Qosja, 2024); high capital costs and unstable

financial incentives (Mustafa et al., 2024; Qosja, 2024); regulatory fragmentation and weak coordination across governance levels (European Commission, 2024; Mustafa et al., 2024); limited community involvement and uneven benefit sharing (Obuseh et al., 2025; Rojas-Peña et al., 2024; San Martin et al., 2024); and bureaucratic complexity and incentive instability (Diógenes et al., 2020; European Commission, 2024; Obuseh et al., 2025; Qosja, 2024).

2.5. Best practices

The literature highlights several best practices to improve project legitimacy and reduce conflict in both photovoltaic and wind projects. These include early-stage dialogue with communities (Ellis and Ferraro, 2016), participatory planning processes (Roddis et al., 2020), ownership and benefit-sharing models (Hogan, 2024; IFC/World Bank, 2020), and Community Benefit Agreements (CBAs) with clearly defined objectives and monitoring mechanisms. Scharnigg and Sareen (2023) highlight accountability challenges for intermediaries in energy community roll-outs in Portugal, noting complexities and potential limits to achieving truly equitable participation. Renewable Energy Communities (RECs) that incorporate tariff solidarity or other redistributive mechanisms have also emerged as promising approaches to enhance local support and ensure more equitable distribution of benefits (SolarPower Europe, 2021; Telheiras, 2024).

Taken together, these findings suggest that acceptance is mediated not only by public attitudes but also by institutional frictions that limit participation and shape how local actors interpret community responses.

3. Methodology

This study adopts a qualitative research design based on face-to-face semi-structured interviews with local institutional actors involved in the governance of renewable energy projects. Rather than capturing residents' perceptions directly, the study focuses on municipal councils, parish councils, and common lands committees, whose members closely follow project development, mediate between communities and developers, and hold delegated responsibilities in local decision-making. Semi-structured interviewing is well established in research on local energy governance and provides the depth needed to understand how institutional actors interpret participation, fairness, and project impacts (Ferreira et al., 2019). This approach is therefore suited to examining institutional interpretations of acceptance, rather than measuring community attitudes themselves.

The Centro Region of Portugal, which concentrates a significant share of national wind and solar installations, offers a relevant context for examining how local governance arrangements shape participation and perceived legitimacy. The region's project density enables the identification of institutional patterns with broader national relevance.

The sampling strategy followed non-probabilistic qualitative principles, combining purposive and snowball techniques. In the first stage, municipal representatives were intentionally selected for their knowledge of local needs, their involvement across all stages of project development, and their intermediary role among communities, developers, and public agencies—a criterion consistent with purposive sampling in qualitative case studies (Palinkas et al., 2015; Saunders et al., 2009). These actors may also experience advantages or disadvantages from renewable energy projects, making them both decision-makers and affected parties, as noted in prior studies (Ferreira et al., 2019).

Municipalities with the highest concentration of renewable energy projects were identified, and initial contacts were established with elected representatives. A snowball procedure was then used to reach additional institutional actors—parish councils and common lands committees—who were otherwise difficult to identify or contact. This iterative process continued until no new relevant actors were suggested, consistent with established qualitative sampling logic (Saunders et al., 2009).

As is typical in non-probabilistic designs, there is no fixed rule for sample size; adequacy depends on alignment with research aims (Saunders et al., 2009). Similar studies in Portugal have relied on smaller samples (e.g., seven interviews in Minho, Upham et al., 2022; Yin, 2014). To strengthen analytical robustness and reduce risks of participant identification, this study includes 25 interviews with local political authorities. All data were anonymized and reported in aggregate.

The interview guide was developed through an extensive literature review and informal consultations with knowledgeable individuals, helping refine thematic areas and enhance interviewer credibility, in line with methodological guidance for semi-structured interviewing (Saunders et al., 2009). Interviews unfolded as flexible, guided conversations that allowed participants to elaborate on institutional responsibilities, perceived benefits and burdens, and experiences with participation processes. On average, the interviews lasted 2 h each.

Following data collection, the analysis proceeded through a systematic and iterative thematic process (Cassell et al., 2013; Rubin and Babbie, 1997). Transcripts were coded inductively to identify recurring patterns, points of convergence and divergence, and the interpretive categories used by institutional actors to describe participation, governance challenges, and perceived project impacts. The typology of institutional friction emerged through this iterative process, combining inductive coding with insights from the literature on governance, administrative capacity, and procedural justice. Coding and category refinement were conducted through repeated readings, thereby stabilizing themes and ensuring that analytical distinctions—such as between acceptance, silence, non-contestation, and procedural exclusion—were consistently maintained.

Throughout the research process, confidentiality and anonymization protocols were strictly followed.

4. Results

4.1. Interpreting non-contestation: delegated decision-making and institutional frictions

Across interviews, a consistent pattern emerged: local institutional actors reported very limited public participation in renewable energy project development, yet they frequently interpreted this absence of engagement as unproblematic and, in many cases, as a sign of community acquiescence. Only one interviewee expressed strong opposition to wind or solar projects. Importantly, however, the interviews do not provide evidence of broad social acceptance; rather, they reveal how institutional actors construct acceptance in contexts where participation is minimal or absent.

Interviewees across municipalities, parish councils, and Baldios committees described few or no structured mechanisms for information sharing or consultation during project development. Several noted that environmental impact studies or project documentation were made available only online, in formats inaccessible to many residents:

“(Public participation, access to information, informing people about advantages and disadvantages) is very academic, it never gets off the ground (…) The presentation of environmental impact studies, in general, is all in links (online), and you know perfectly well that most of the population is not educated enough to discuss such matters.” (Parish Council).

Most interviewees reported that discussion among residents was “non-existent.” Nevertheless, this lack of engagement was widely normalized and legitimized. Decision-makers frequently compared renewable energy projects to other land-use decisions—such as industrial or logistics developments—where public consultation has historically not been required:

“What is the difference between building a few hectares of

warehouses or a few hectares with solar panels? Is the local population consulted when an industrial or logistics park is built? No. So, I know this is discussed a lot, but I do not see that it makes sense…" (Parish Council).

Such reasoning illustrates a form of institutionally interpreted acceptance, in which silence, non-contestation, and the absence of formal complaints are treated as indicators of legitimacy. Acceptance is thus evaluated primarily through outcomes—lack of opposition and the receipt of financial compensation—rather than through the quality or inclusiveness of the decision-making process.

Although interviewees acknowledged that citizens do not actively participate in decisions about land use or resource allocation, many nonetheless described the process as fair. Their assessments of justice were largely outcome-based, centered on perceived territorial benefits rather than on procedural inclusion. Mechanisms for public deliberation on the use of revenues were generally absent, with Baldios committees representing a partial exception: they reported internal assemblies and meetings that allow for some degree of stakeholder input. Even so, participation within these entities remains limited and circumscribed.

Differences in institutional authority further shape how participation is understood and enacted. Parish councils repeatedly emphasized their limited formal power, noting that their opinions are advisory and non-binding:

"(…) like any project, it goes through the parish council for an opinion, which is non-binding; the parish council's opinions are always advisory, and the municipal council, or the technical departments, are not obliged to follow what our opinion states." (Parish Council).

Municipal councils, by contrast, hold licensing authority and report instances where projects were rejected due to landscape or visual impacts:

"(…) we have refused some photovoltaic installations, in areas that are even substantial, because they have a very significant visual impact." (Municipal Council).

Baldios committees asserted strong decision-making autonomy over common lands, emphasizing that other local institutions cannot influence agreements they negotiate with developers.

Moreover, we have identified institutional frictions shaping interpreted acceptance. These dynamics reveal several types of institutional friction that help explain the coexistence of low participation and institutionally interpreted acceptance:

1. Frictions of mandate and legal responsibility: Participation requirements are unclear or uneven across governance levels, leaving local actors uncertain about when and how consultation should occur.
2. Frictions of administrative capacity: Limited staff, expertise, and resources constrain the ability of institutions to design or implement participatory processes.
3. Frictions of inter-scalar coordination: Misaligned authority between parish councils, municipalities, and national agencies reduces opportunities for coherent engagement.
4. Frictions of knowledge and literacy: Limited public access to technical information—and limited institutional capacity to translate it—restricts meaningful involvement.

Together, these frictions create a governance environment in which participation is treated as optional, and the absence of contestation becomes administratively convenient. This helps explain why institutional actors frequently interpret silence as acceptance and why legitimacy is grounded in trust in intermediary institutions rather than in direct citizen involvement.

Overall, the findings point to a pattern of passive or delegated acceptance, shaped by institutional routines, capacity constraints, and uneven authority. Financial considerations remain a central driver of institutional support for renewable energy projects, while procedural justice—understood as meaningful citizen influence over decisions—remains limited.

4.2. Institutional barriers and frictions

Interviewees identified relatively few barriers or challenges to implementing wind and solar parks, a pattern that reinforces the normalization of the prevailing decision-making model. Even so, their accounts reveal several institutional frictions that shape project development, particularly in interactions with national-level public entities. These frictions help explain why limited participation coexists with institutional interpretations of acceptance.

A central source of friction concerns the intervention of national environmental and conservation authorities, especially the *Agência Portuguesa do Ambiente* (APA) and, more prominently, the *Instituto da Conservação da Natureza e das Florestas* (ICNF). Interviewees described ICNF's involvement as a recurrent cause of substantial delays, in some cases extending project timelines by several years. These delays have direct financial implications for local entities, particularly those dependent on land-lease revenues from renewable energy installations:

"ICNF is the biggest cancer in this country (…) And then APA, but first ICNF. It helps no one at all. (…) It only complicates, ICNF only complicates." (Municipal Council).

"(…) the project could have been completed 2 or 3 years ago (…) This project, this process, had already been licensed with a construction permit, but then ICNF decided that, after all, it could not be. They said they had not been aware of the case. However, they were here. They were here in the monitoring committee and in prior consultations, but then they went back on it (…). We are losing rent. 170, 180 thousand euros per year." (Parish Council).

These accounts illustrate frictions of inter-scalar coordination, where misalignment between national regulatory bodies and local development priorities generates uncertainty, undermines institutional trust, and disrupts local planning. They also reflect frictions of mandate, as unclear or inconsistently applied responsibilities create instability in project approval processes and leave local actors unsure about procedural expectations.

Interviewees also highlighted asymmetries of knowledge and negotiating capacity, particularly among Baldios committees. Representatives reported difficulties negotiating lease contracts with developers due to disparities in technical, legal, and informational resources. These asymmetries reduce local leverage over contract terms and have, in some cases, resulted in agreements perceived as financially disadvantageous to communities. To mitigate these challenges, Baldios committees increasingly rely on their associations—described by one interviewee as functioning like "unions"—for legal, administrative, and advisory support, while retaining autonomy over final decisions. This dynamic reflects frictions of administrative capacity, where limited institutional resources constrain the ability to secure equitable outcomes.

Despite these challenges, interviewees did not interpret the barriers as evidence of structural flaws in the decision-making model. Instead, they framed them as technical or administrative obstacles, reinforcing the broader pattern of delegated acceptance identified earlier. The limited number of suggestions for improvement further indicates that institutional actors have adapted to these constraints and do not view participatory redesign or procedural reform as necessary. In this context, institutional frictions are absorbed into routine governance practices, contributing to a system in which non-contestation is interpreted as acceptance and procedural justice remains weak.

4.3. Energy literacy and knowledge of the energy community concept

Interviewees demonstrated generally limited knowledge of emerging concepts in energy literacy. Awareness of energy communities was particularly low: more than 75% of participants reported being entirely or partially unfamiliar with the concept or its practical applicability,

whether from technical, legal, organizational, or governance perspectives. This lack of knowledge reflects not only an information gap but also frictions of knowledge and literacy that constrain the ability of local institutions to engage with new participatory models of energy governance.

Despite this limited understanding, interviewees expressed openness to innovative approaches such as energy communities, provided that these initiatives deliver tangible benefits to the local population. However, this openness remained abstract and largely symbolic. Because interviewees lacked concrete knowledge of implementation models, management structures, or the specific responsibilities that municipalities, parish councils, or Baldios committees would assume, they were unable to articulate how such initiatives could be operationalized locally. Several noted that, given their limited expertise, their role would likely be restricted to facilitating processes initiated by external actors rather than actively shaping or managing them.

Knowledge levels varied across institutions. Although the number of interviews differed by type—four municipal councils, seventeen parish councils, and four Baldios committees—municipal councils demonstrated comparatively greater familiarity with the concept of energy communities. Parish councils and Baldios committees, by contrast, reported more pronounced knowledge gaps, reinforcing the concentration of energy literacy in higher-level institutions.

These dynamics illustrate a form of institutional dependency, in which local authorities rely on national bodies, private developers, or intermediary organizations to interpret and operationalize emerging energy models. As a result, political support for energy communities does not translate into concrete implementation. Without accessible technical information, legal guidance, or organizational support, local actors remain unable to take active roles in developing these initiatives.

Overall, the findings show that limited energy literacy—combined with uneven institutional capacities—constitutes a significant friction

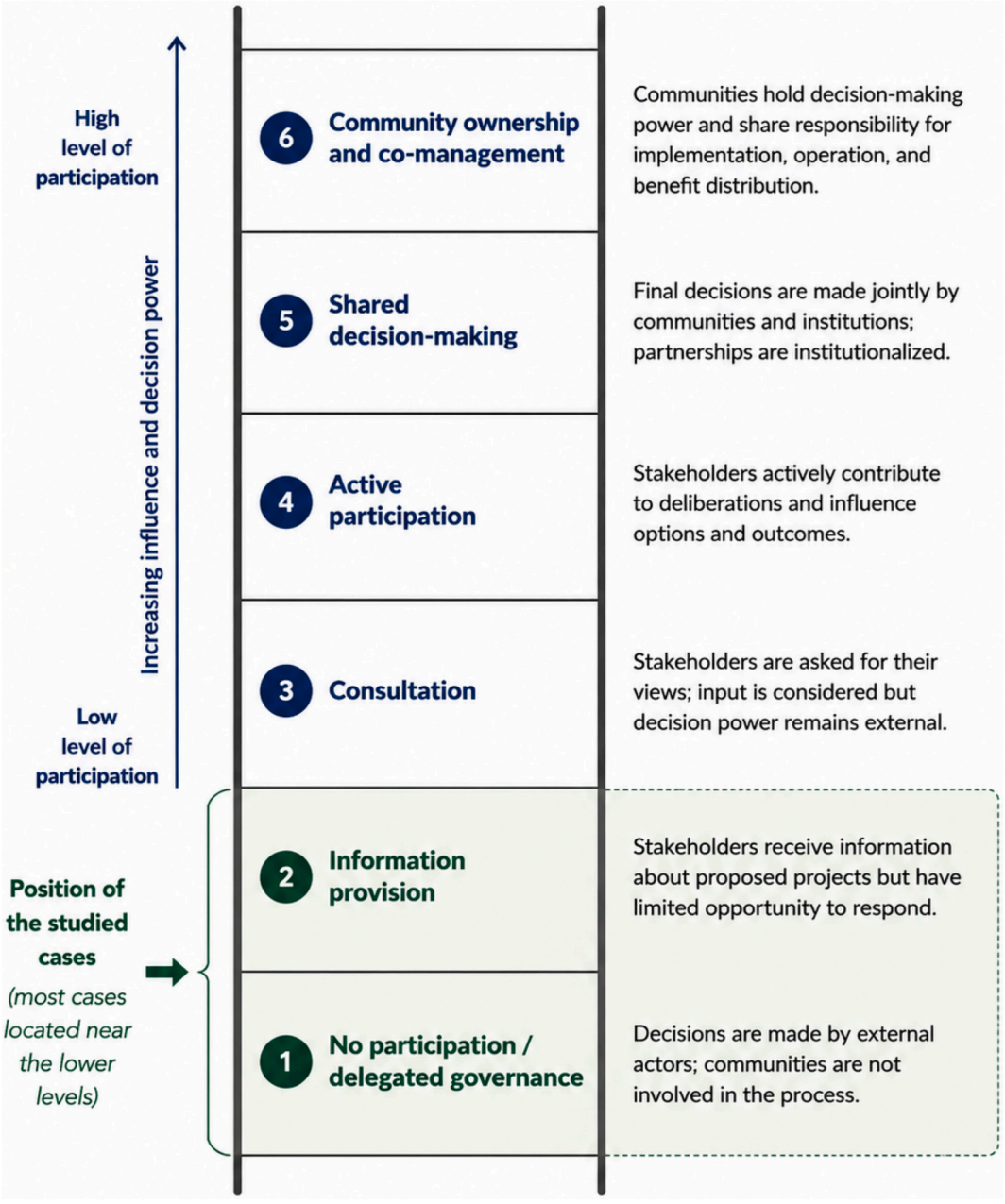


Fig. 2. Position of the studied cases along a continuum of public participation in renewable energy governance in Portugal (adapted from Arnstein, 1969, and Pretty, 1995).

in the adoption of participatory energy models. While interviewees are receptive to innovation, the absence of practical knowledge and support structures constrains their ability to move beyond a facilitative role. This reinforces the broader pattern of delegated acceptance, in which institutional actors interpret non-contestation as acceptance, even though they lack the resources needed to expand participatory governance.

5. Discussion

The findings of this study offer a nuanced perspective on the relationships among participation, institutional interpretations of acceptance, and energy justice. While the literature often assumes that acceptance emerges from informed and inclusive processes (Devine-Wright, 2011; Wüstenhagen et al., 2007), our results show that acceptance can also be institutionally constructed through delegated authority, routinized non-participation, and the normalization of silence. This aligns with critiques of linear models linking participation, justice, and legitimacy, and underscores the need for more critical analysis of how acceptance is produced and mobilized in practice (Ellis and Ferraro, 2016; Roddis et al., 2020).

In the domain of energy justice, the results reinforce the observation that procedural justice remains the least developed and least implemented dimension (De Fine Licht and Håkansson, 2025; Jenkins et al., 2016; Shejale et al., 2025). Local decision-makers tend to privilege outcomes—particularly territorial or financial benefits—over the design of participatory processes. Participation is treated as an accessory rather than a foundational component of governance, often confined to formal consultations with limited practical influence (Arhin et al., 2026; Gross, 2007; Pasqualetti, 2011). This contributes to the normalization of low participation as an administrative routine rather than a governance shortcoming.

Fig. 2 situates the empirical findings along a continuum of public participation adapted from classical participation frameworks such as Arnstein's ladder (Arnstein, 1969). The evidence suggests that most cases examined remain concentrated at the lower levels of this continuum, characterized primarily by information provision or delegated governance rather than consultation, shared decision-making, or community ownership arrangements. The figure illustrates that the absence of conflict observed in the interviews should not be interpreted as evidence of high procedural legitimacy. Rather, it reflects governance arrangements in which opportunities for participation remain limited, and decision-making authority is concentrated in institutional intermediaries.

The findings also contribute to debates on whether economic and territorial benefits can substitute for democratic participation in renewable energy development (Brisbois, 2019; Cowell et al., 2011; Delcayre and Bourdin, 2025). In practice, benefit-sharing mechanisms are frequently used to legitimize projects and reinforce existing institutional hierarchies, shifting attention away from questions of who decides and who participates (Hall et al., 2013; Lacey et al., 2018). The results suggest that discussions of justice and legitimacy must move beyond distributive outcomes to consider the processes through which decisions are made and influence is exercised.

Differences in participation across municipal councils, parish councils, and Baldios committees further highlight how power, resources, and responsibilities are unevenly distributed (Goldthau, 2014; Hooghe and Marks, 2003). These asymmetries reflect disparities in institutional capacity—legal and administrative knowledge, technical expertise, and energy literacy. Parish councils report limited authority over renewable energy projects, while knowledge of energy communities varies substantially across institutions. As the literature emphasizes, effective participation requires not only normative commitments but also adequate structures, resources, and support mechanisms (Lowitzsch et al., 2020; Seyfang et al., 2014). Without these, participation remains symbolic and decision-sharing stalls, constraining the democratizing potential of emerging models such as energy communities.

Because this study relies on a non-probabilistic qualitative sample of institutional actors, the findings cannot be generalized to all municipalities, parish councils, or Baldios committees in Portugal. The sample reflects the perspectives of actors directly involved in project governance in the Centro Region, and the patterns identified should be interpreted as analytical insights rather than statistically representative trends. This limitation is inherent to qualitative inquiry and does not diminish the value of the findings; rather, it underscores that the results illuminate institutional mechanisms and interpretive logics, not population-level attitudes or national acceptance levels.

The interviews also reveal asymmetries in knowledge and bargaining power between local entities—especially Baldios committees—and renewable energy developers. Difficulties in negotiating lease contracts due to technical, legal, and informational gaps reduce local leverage and risk producing disadvantageous agreements. Reliance on Baldios associations for support highlights the need for intermediaries. It exposes vulnerabilities in smaller, less-resourced committees, pointing to broader institutional weaknesses in the governance of renewable energy development.

Importantly, interviewees did not frame these barriers as critiques of the governance model itself. Instead, they interpreted them as technical or administrative issues, reinforcing a pattern of delegated acceptance: institutional actors accept the model's legitimacy while lamenting its inefficiencies. Frictions are experienced as operational inconveniences rather than procedural injustices, sustaining limited participation, concentrated authority, and trust in institutions as a substitute for direct involvement.

These institutional frictions—administrative delays, regulatory inconsistencies, and resource asymmetries—shape the implementation of renewable energy projects. Even if not perceived as structural flaws, they influence the pace, fairness, and perceived legitimacy of project development. Addressing them is therefore essential for a more just and participatory energy transition.

The results also highlight significant disparities in energy literacy across governance levels (Gladwin and Ellis, 2023). Municipal councils tend to have greater awareness of energy community concepts than parish councils or Baldios committees, though overall knowledge remains limited. Concentrating literacy and expertise in higher-level institutions reinforces existing hierarchies and constrains smaller entities, undermining the democratizing potential of energy communities. This reveals a persistent policy–capacity misalignment: despite national and EU emphasis on participatory energy models, local gaps in technical knowledge, legal clarity, and administrative support impede their implementation. As noted in the literature, abstract acceptance of the energy transition does not guarantee engagement or implementation (Araujo-Vizuete and Robalino-López, 2025). The limited understanding of energy communities underscores the need to address institutional frictions that hinder democratization (Radtke, 2025). Without deliberate efforts to expand energy literacy and strengthen local capacity, promises of participation, empowerment, and energy justice will remain unrealized.

A further nuance worth acknowledging is that participatory processes do not always guarantee the representation of diverse community interests. Such processes can inadvertently amplify the perspectives of the most vocal or better-resourced participants, rather than capturing the full heterogeneity of needs and experiences. Recognizing this limitation aligns with our broader discussion on acceptance, energy justice, and community engagement, and underscores the importance of designing participatory mechanisms that are both inclusive and reflexive. Moreover, although reduced procedural justice may perpetuate institutional frictions, further research is required to understand the causality between these two aspects.

Taken together, the findings show that institutional frictions—unclear mandates, limited administrative capacity, inter-scalar misalignment, knowledge gaps, and bargaining asymmetries—play a decisive role in shaping participation and

interpretations of acceptance. These frictions restrict opportunities for meaningful engagement and create governance environments in which non-contestation is interpreted as acceptance, even when it is shaped by structural constraints rather than by meaningful consent. This reinforces critiques that social acceptance and energy justice do not naturally align. Renewable energy projects may be deemed legitimate by institutional actors even when participation is minimal or absent (Monyei and Heintze, 2025). Justice is often equated with financial or territorial benefits, even when communities have little voice in decisions about project siting or benefit distribution.

Overall, the study underscores that acceptance and justice are not synonymous, and that strengthening governance requires expanding institutional capacity—particularly in peripheral territories—to enhance knowledge, participation, and decision power. Addressing institutional frictions is therefore essential for advancing more democratic and procedurally just renewable energy transitions.

6. Conclusions and policy implications

This study examined how local institutional actors interpret renewable energy development and how these interpretations shape understandings of participation, acceptance, and energy justice. Drawing on 25 interviews with representatives from municipal councils, parish councils, and common lands committees, the analysis shifts attention from residents' attitudes to local governance practices, offering insight into how legitimacy is constructed in contexts where renewable energy is central to national decarbonization and climate goals.

Across all interviews, local actors reported very limited public participation in the development of wind and solar projects. Structured mechanisms for information sharing or consultation were rare, and discussion among residents was described as minimal or non-existent. Nevertheless, this absence of engagement was widely normalized and legitimized. Decision-makers frequently compared renewable energy projects to other land-use decisions—such as industrial or logistics developments—where public consultation has historically not been required. As a result, silence and non-contestation were interpreted as indicators of acceptance. What emerges is not evidence of broad social acceptance but rather a form of institutionally interpreted acceptance, inferred from outcomes such as the absence of opposition or the receipt of financial compensation. This challenges assumptions in the literature that acceptance necessarily emerges from informed or inclusive processes (Devine-Wright, 2011; Wüstenhagen et al., 2007) and aligns with critiques of linear links between participation, justice, and legitimacy (Ellis and Ferraro, 2016; Roddis et al., 2020).

From an energy justice perspective, the findings highlight the persistent marginalization of procedural justice, which remains the least developed and least effectively implemented dimension of energy justice (De Fine Licht and Håkansson, 2025; Jenkins et al., 2016; Shejale et al., 2025). Rather than prioritizing participatory process design, local decision-makers focused primarily on substantive outcomes, particularly anticipated economic and territorial benefits. Participation was treated as incidental rather than foundational, echoing evidence that formal consultation often lacks practical influence (Arhin et al., 2026; Gross, 2007; Pasqualetti, 2011). Justice was therefore applied primarily through governance actions and benefit-sharing arrangements rather than through direct public involvement, debate, or contestation. These findings contribute to ongoing debates about whether economic benefits can substitute for democratic participation in renewable energy development (Brisbois, 2019; Cowell et al., 2011; Delcayre and Bourdin, 2025), showing that benefit-sharing may legitimize projects while diverting attention from questions of who decides and who participates (Hall et al., 2013; Lacey et al., 2018).

Differences in participation across municipal councils, parish councils, and Baldios committees reflect the uneven distribution of power, resources, and institutional responsibilities across levels of local governance (Goldthau, 2014; Hooghe and Marks, 2003). Parish councils reported limited authority, often confined to issuing non-binding opinions, while municipalities held licensing power, and Baldios committees exercised autonomy over common lands. These asymmetries reflect disparities in legal knowledge, administrative capacity, and energy literacy. Interviewees also described several institutional frictions that shape project development: unclear or inconsistently applied participation mandates; limited administrative capacity to design participatory processes; misalignment between national and local institutions—particularly involving ICNF and APA; and significant knowledge gaps regarding technical documentation and emerging models such as energy communities. Delays associated with national agencies were especially salient, with interviewees describing multi-year postponements and unpredictable regulatory decisions that undermined institutional trust and disrupted local planning. These frictions were experienced as technical or administrative obstacles, illustrating a pattern of delegated acceptance in which institutional actors endorse the legitimacy of the governance framework while recognizing its administrative limitations.

Knowledge of emerging concepts such as energy communities was limited: more than 75% of interviewees reported unfamiliarity with their technical, legal, or organizational dimensions. Municipal councils demonstrated somewhat greater awareness than parish councils or Baldios committees, but literacy remained low overall. This concentration of knowledge within higher-level institutions perpetuates existing governance asymmetries, limiting the capacity of smaller local entities to engage effectively and thereby weakening the democratizing potential of energy communities (Gladwin and Ellis, 2023). More broadly, these findings point to a persistent misalignment between policy ambitions and local institutional capacity. Although national and EU policies increasingly promote participatory models of energy governance, deficits in technical expertise, legal clarity, and administrative support continue to hinder their effective implementation at the local level. As previous research has shown, broad support for energy transition does not necessarily translate into active participation or institutional uptake (Araujo-Vizuete and Robalino-López, 2025). Without sustained efforts to strengthen energy literacy, build local administrative capacity, and provide clearer institutional guidance, the objectives of participation, empowerment, and energy justice are likely to remain only partially realized (Radtke, 2025).

Findings challenge assumptions that renewable energy projects are legitimate simply because they generate local benefits. Acceptance and justice are not synonymous. Legitimacy requires governance arrangements that promote meaningful participation, strengthen institutional capacity, and address structural inequalities—particularly in peripheral territories. The results suggest that justice is applied primarily through governance actions and benefit-sharing rather than through direct public participation, debates, or confrontations.

These insights carry several implications for policy and governance. First, to reconsider reliance on “social acceptance” as an indicator of fairness or democratic quality. Acceptance metrics can obscure procedural weaknesses and should not be used as proxies for legitimacy. Second, it should be clarified that the participation mandates across governance levels. Consultation should not be treated as discretionary. Clearer legal requirements would reduce ambiguity and strengthen procedural justice. Third, early-stage public engagement should be ensured. Participation should occur before licensing decisions are made so that community input can meaningfully influence outcomes. Fourth, transparency and access to information should be ensured. Platforms such as *Participa Portal* (Participa, 2026) should facilitate full access to feedback statements from citizens and organizations, promoting open data and institutional transparency (Oliveira et al., 2025). Fifth, avoidance of substituting compensation for democratic involvement. Benefit-sharing can support implementation but should complement—not replace—participatory governance. Sixth, strengthen local institutional capacity. Parish councils and Baldios committees require technical, legal, and administrative support. Dedicated

resources for participatory processes and democratized benefit-sharing mechanisms would reduce uncertainty and enhance institutional trust. Seventh, knowledge asymmetries should be addressed. Targeted training, standardized contract templates, and advisory services would improve local negotiating power and reduce vulnerabilities. Finally, there should be alignment between national policy ambitions and local capacity. Strengthening energy literacy across governance levels is essential for enabling participatory energy models to move from aspiration to practice.

These findings must be interpreted in light of several limitations that clarify the scope of the study's contribution. The analysis focuses on local decision-makers, which illuminates governance practices but does not capture residents' own perceptions of acceptance, legitimacy, or justice—particularly among marginalized groups. The evidence is based on a relatively small, non-probabilistic sample and a cross-sectional snapshot, which limits generalizability and prevents observation of how interpretations evolve. The study relies primarily on reported practices; stronger triangulation with administrative records, consultation submissions, licensing timelines, and contractual arrangements would enhance validity.

Future research should adopt multi-actor and mixed-method designs, combining interviews with resident surveys, focus groups, and stakeholder mapping. Longitudinal case studies could track how participation and contestation unfold across project lifecycles. Comparative research across municipalities, technologies, and ownership models would help identify which institutional conditions systematically strengthen procedural justice and sustain legitimacy over time, and how different governance arrangements shape participation and long-term acceptance.

CRediT authorship contribution statement

Mónica Meireles: Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Mara Madaleno:** Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Margarita Robaina:** Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Tiago Miguel:** Writing – original draft, Methodology, Formal analysis, Data curation. **Fátima Lima:** Writing – original draft, Methodology, Formal analysis, Data curation. **Edimar Ramalho:** Writing – original draft, Methodology, Formal analysis, Data curation.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.gloenvcha.2026.103225.

Data availability

Data will be made available on request.

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