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# Justice concerns in large-scale renewable energy projects: a case study echoing the importance of procedural justice in wind energy development in Kenya

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## Abstract

**Background** Large-scale renewable energy projects are increasingly being rolled out across rural Kenya, with the government playing a frontline role in attracting energy investors through various state-led and state-centric policies and investment incentives such as feed-in-tariffs and power purchase agreements. While these policies are commendable, and are indeed attracting many private investors, existing studies document how social and environmental justice concerns are often overlooked—sometimes causing local contestations against energy projects. However, to date, there has been less attention given to cases where procedural justice elements (e.g., access to information, access to meaningful participation, access to justice, and respect for local culture) led to a successful land negotiation for energy development without outright conflict. Using a case study in Kenya, this article aims to bridge this gap by showing how a fair application of various elements of procedural justice in land consultation has facilitated the establishment of the Kipeto wind farm. This qualitative research is based on semi-structured interviews that took place from February to March 2023, with a follow-up visit in December the same year, supplemented with review of secondary data sources.

**Results** The results indicate that for energy projects to be accommodated in and by communities, access to land must be properly negotiated, particularly with the actual landowners whose livelihoods are most likely to be implicated by the project. Second, local people's perception of what they regard as a 'just' or 'fair' process of land consultation constitutes the basis for their acquiescence and compliance.

**Conclusion** Ensuring a 'just' procedure in land consultation with the actual landowners is a key strategy to avoid conflicts. Land investors, governments, and policy-makers who interface and negotiate with communities must ensure the provision of procedural justice, particularly in contexts where local livelihood is tied to land and where land is individually owned. Although the findings suggest a positive case of wind energy development in Kenya, the project is barely 4 years old; things may change overtime if agreed conditions are not met as specified in the MoU. Therefore, additional follow-up research is needed to ascertain the extent to which both KEL and landowners live up to their promises.

**Keywords** Wind energy, Procedural justice, Land acquisition, Local communities, Kenya

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## Background

The expansion of renewable energy technologies such as wind, solar, geothermal, and hydropower continues to gain prominence around the world [1, 2]. This has been necessitated due to current quests by the global community to mitigate climate change, sustain domestic energy demands, and tackle challenges to energy access. Following the 2015 Paris climate summit, many world leaders expressed their commitments to implement climate-friendly policies—among which was the adoption of renewable energy technologies [1]. Kenya is among the countries in Africa currently leading in renewable energy development, and planning to produce 100% of its energy from renewable sources by 2050 [3]. To the government of Kenya, the adoption and expansion of these new technologies offers the opportunity to attract energy investors to produce additional power, both for domestic and foreign consumption. Electrification and the expansion of power production sources via renewable energy technologies are major components of the government's Vision 2030 [4]. Given this interest from the state, various policy measures and investment incentives have been put in place to attract private sector energy investors. Some of these include *inter alia*, favorable power purchase agreements, import tax concessions, feed-in tariffs, as well as mechanisms to facilitate the issuance of permits and licenses [5].

Although these measures are indeed enabling the generation of power, which in turn is being supplied to the national grid [5], arguably, such policy measures and investment incentives do not directly address local concerns around land acquisition in host communities. This questions justice in the process of generating power on land claimed and/or used by local people for crop cultivation, pastoralism, and the gathering of fuelwood and other non-timber forest products. Justice concerns are particularly stronger in contexts involving dispossession and/or disarticulation of local livelihoods, but also, where land is owned by individuals. Activists, rights groups, pastoral and indigenous communities have played frontline roles in advocating for justice [1, 6–9]—which remains fundamental to many communities hosting land-based projects, including renewable energy projects in countries such as Kenya.

Many studies investigating large-scale renewable energy infrastructures in Kenya show how indigenous and pastoral communities have resisted the establishment of renewable energy projects [3, 4, 10–14]. A common outcome of these studies points to the absence of effective policy measures that address questions of (in) justice especially at the community level with regards to the process of land consultation and negotiation, and this largely explains local pushbacks to many renewable

energy projects. Rogei [3] for instance documents how the planning and implementation phases of the Olkaria geothermal plant in Nakuru undermined community engagement, prompting a plethora of conflicts and lawsuits against the project. Similarly, Pueyo [1] intimates that it was partly unsatisfactory land consultation and negotiation processes that provoked local contestation against the Kinangop wind power project and later led to its collapse (see also Wambua [13]). Existing research equally points to similar procedural lapses in the establishment of Africa's largest wind farm—the Lake Turkana Wind Power project [1, 4, 11]—where flawed land consultation and negotiation has generated numerous controversies, resistance, and conflicts on communal land claimed by the people of Turkana, Samburu, Rendille, and El Molo [15]. Generally, behind these contestations and conflicts, there is lack of clarity regarding land rights and consultation procedures, as well as unbalanced distribution of costs and benefits between investors and communities [1, 12, 16]. These occurrences are common in Kenya, as well as in many countries in the global South (with Mongolia being a notable exception [15]), and these have been widely documented [9, 17–19]. But the story appears to be different in many developed countries such as Germany, Sweden, Canada, Australia, and the USA. In these countries, because the rule of law is highly applicable, considerable attention has been given to justice concerns in renewable energy development [2, 20, 21] particularly to the surrounding communities where these projects are being hosted. In Canada, for instance, in the Bow Lake wind project, good consultations were conducted and local communities have benefited from the wind project through gaining equity and sharing in the revenues generated [15]. But such positive overviews are less common in Africa; where they exist, they are yet to receive sufficient scholarly attention.

In Kenya, the focus of this study, for instance, cases where justice has been fairly observed in land consultation procedures and where the process has gained a positive perspective from host communities are yet to receive sufficient scholarly attention in the literature on large-scale land acquisition for renewable energy development. This is a considerable research gap in energy studies that this paper seeks to fill. Recognizing the importance of land in energy development, and the potential land-related dispossession envisaged in the process, Newell and Mulvaney [22] have suggested the necessity for equity and justice issues to be considered in the drive toward a low-carbon future. This call is important in this current study particularly as land is privately owned, but also constitutes a major livelihood asset to communities.

To address the above-stated gap, the article focuses on Kipeto Energy Limited (KEL), a specific large-scale wind

energy provider that appears to have gained local support from landowners after an unusually lengthy land consultation and negotiation process that lasted for more than a decade. The study explores the approach used by KEL to solicit community compliance and acceptance of the wind energy project; local peoples' perspectives concerning the land consultation and negotiation process; and whether or not key principles of procedural justice were observed. It does so by paying particular attention to some key pillars of procedural justice such as: treating host communities with respect, access to information, access to meaningful participation during decision-making and legislative processes, and access to justice, i.e., citizens have equal access to justice systems to lay claims and resolve their justice problems. Scholars such as Gross [20], Yenneti and Day [9] among others have employed similar criteria to determine the application of justice principles connected to renewable energy development in both the global North and South [9, 20, 23]. Based on the research analysis, the study argues that, despite the pivotal role of the state in attracting energy investors through various state-led and state-centric focused policies and investment incentives mentioned above, for these projects to be accommodated in and by communities, access to land must be properly negotiated across a broad spectrum of stakeholders, particularly with the actual landowners. Also, it argues that local people's perception of what they regard as a just/fair process of land consultation and negotiation constitutes the basis for their acquiescence and compliance, and this has greatly facilitated the successful implementation of the Kipeto wind energy project in Kenya.

Drawing from environmental, climate, and energy justice literatures [24–28], this study uses a procedural justice lens as a practical analytical tool to understand local landowners' perceptions and experiences of the wind energy project, particularly in terms of whether the land acquisition process was/is considered fair or unfair, what Gross [20] describes as 'process fairness'. From a landowner standpoint, perception of fairness of process depicts, among other things, engagement and voluntary participation of landowners in the land deal; the provision of adequate information during land consultation and negotiation; KEL's agreement to accommodate traditional livelihood practices like farming and grazing on the acquired land; respect for local culture; as well as the provision of financial and material incentives to all those affected by the project. Smith and McDonough [29] have explored perceptions of fairness during a public participation meeting and found that people judged fairness on justice principles such as representation, voice, consideration, logic and desired outcomes; and these are crucial for resolving local concerns around

energy transition [30]. This study's focus on procedures as the basis for obtaining social acceptance is increasingly gaining relevance in land-based societies in Kenya and elsewhere, especially as competition for land continues to intensify [9, 30], and this justifies the significance of this study. The paper presents three main contributions. First, it raises awareness on the necessity of supplementing national policies with micro-level measures to address land-energy-related concerns in communities. Second, it shows the importance of the local perspective of fairness of the process in land consultation, with the intention of cautioning investors, governments, consultants, and activists who interface and consult with communities on issues concerning land acquisition for the development of energy infrastructures such as wind. Lastly, the study adds to the literature on energy justice by showing how the fair application of procedural justice elements in land consultation has enabled the establishment of the Kipeto wind farm in Kenya. Even though the findings of this study suggest that KEL is a successful case of wind farm development in Kenya, the project is under 4 years old; things may change overtime if agreed conditions are not met as specified in the memorandum of understanding (MoU) signed with communities. Therefore, additional future research is needed to ascertain the extent to which both KEL and landowners live up to their promises.

Following this introduction, the remainder of the paper is structured as follows. First, it provides an understanding of the principle of procedural justice, reviewing the key concepts and arguments and showing how social, environmental, and energy justice literatures emphasize the importance of fair procedures in decision-making. The next section discusses the studied community and the wind energy project, followed by the research methods. Next, it provides insights from interviews to show how landowners in Kipeto perceive the consultation process and how their perception has enabled social acceptance of the wind farm. Finally, the paper provides a brief discussion section, before concluding with some policy recommendations.

### **Procedural (in)justice in land consultation and negotiation: the analytical lens**

To explain environmental-, climate-, and energy-related matter, various categories of justice principles have been proposed including distributional, recognition, and procedural [19, 20, 24, 26, 30–33]. Among these principles, distributive justice (which is perhaps the most used concept of justice in academic scholarship) refers to the distribution of burdens and benefits related to environmental interventions [34, 35]. Distributional justice also addresses questions of access to resources and opportunities that are deemed to be critical to address social

injustices [27]. Justice as recognition concerns who is given respect (or not) and whose interests, values, and views are recognized and taken into account [34]. According to Walker and Day [33], recognition injustices are rooted in cultural and institutional processes and legacies that have implicitly or explicitly given social groups, communities, or individuals unequal recognition in society. Lastly, procedural justice, the focus of this article, is about inclusion and exclusion of people in decision-making processes around environmental and social issues. Procedural justice is rooted in ‘fairness’ [33]; it calls for equitable and democratic involvement of all stakeholders irrespective of class, gender, religion, sexual orientation, socio-economic status, or political affiliation [36–39]. Conversely, procedural injustices occur where people are excluded and/or marginalized from planning and decision-making processes, policies and projects, and these sometimes lead to social discontent [40, 41].

Renowned social theorists such as Rawls [42] and others have historically championed the articulation of justice ideas, although leaning more toward distributional justice. According to these authors, the rules and policies governing social and political institutions in every society shape the distribution of primary goods, benefits, and challenges among members of that society. John Rawls (*ibid*) further suggests that an understanding of justice gives people a common perspective ‘from which their claims may be adjudicated’ and which establishes the bond of civic friendship. However, critics have challenged this focus on distribution of goods and benefits arguing that, first, it neglects an array of other factors such as institutional, social, and cultural that might impede a just distribution [20, 43, 44]. Second, a distributional focus lacks explicit guidance on what constitute just procedures as well as how to arrive at procedural justice [9], which is increasingly gaining prominence in academic and non-academic circles, particularly, with respect to justice at community levels [9, 30]. Inspired by social and democratic thinking, institutions, organizations, and scholars have pushed environmental justice ideas further, to also include elements of procedural and recognition justices that prioritize fairness in decision-making [45]. Scholars such as Young [44], Frazer [26], and Frazer and Honneth [46], among others, have emphasized the need for the recognition and accommodation of the views of a variety of stakeholders, thereby overcoming the rather entrenched patterns of domination, suppression, and marginalization of a particular segment of the population in environmental interventions.

The development of a large body of literature on environmental justice owes its roots to grassroots movements in the USA dating as far back as the 1970s and 1980s in the form of civil rights struggles against the dumping of

wastes that cause pollution, and this was closely connected to issues of race and class [9, 33, 34, 43, 47]. Procedural justice demands in environmental justice movements were given due attention in many international fora such as the ‘1991 First National People of Colour Environmental Leadership Summit’ in Washington [37]. Attended by over 650 grassroots and national leaders from around the globe, 17 principles of environmental justice were adopted—some of which include freedom from any form of discrimination, strict enforcement of the principles of informed consent, the right to participate in decision-making as equal partners, and the right of victims of environmental injustice to receive [fair] compensation. Similar concerns focusing on procedural justice were also expressed at the United Nations Economic Commission for Europe (UNECE) [23] Aarhus Convention. The convention, signed by 47 States across Europe and Central Asia, secures opportunities for access to environmental information and transparent procedures for all citizens of the party countries [9, 48]. According to the convention, procedural justice rest on three pillars: access to information; access to meaningful participation during decision-making and legislative process of all relevant projects; and access to justice in the case of claims with regard to the first two pillars [23]. In a nutshell, the overarching concern of procedural justice in both conventions was to ensure that institutional and procedural norms guarantee all people equal opportunity for consideration in decision-making [49]. These concerns have since led to a growing amount of academic scholarship examining questions around socio-environmental (in)justices, in particular analyzing the politics of resistance by minority and poorer communities in different parts of the world [50, 51], engaging either procedural or distributional (in)justices or sometimes both [43, 49, 52].

Environmental justice is rooted in the principle that disadvantaged communities should not be subject to disproportionate environmental impacts [27], or unfair treatment in environmental interventions such as the acquisition of land for conservation purposes or for renewable energy development for example. Emerging largely from the field of environmental justice, but strongly anchored to the literature on climate justice is ‘energy justice.’ According to Jenkins et al. [53], energy justice is a new center of gravity for energy scholars, providing the opportunity to examine societal response to injustices linked to social and environmental challenges. Sovacool et al. [54] conceived of energy justice as ‘a global energy system that fairly distributes both the benefits and burdens of energy services, and one that contributes to more representative and inclusive energy decision making.’ Like environmental justice, energy justice can also be

understood in terms of specific justices—distributional, procedural, and recognition [53], which are usually interconnected to one another, and often not mutually exclusive in practical terms. Applying constructs and principles drawn from environmental justice literatures, studies on energy justice have emerged in many social science-related disciplines [53, 55]. The focus has been primarily on areas such as energy access [56], energy security [57], fuel poverty [33, 58, 59], energy production and systems [31], energy consumption [60–63], ethical energy consumption [61], and energy activism and politics [59]. These works cut across the globe.

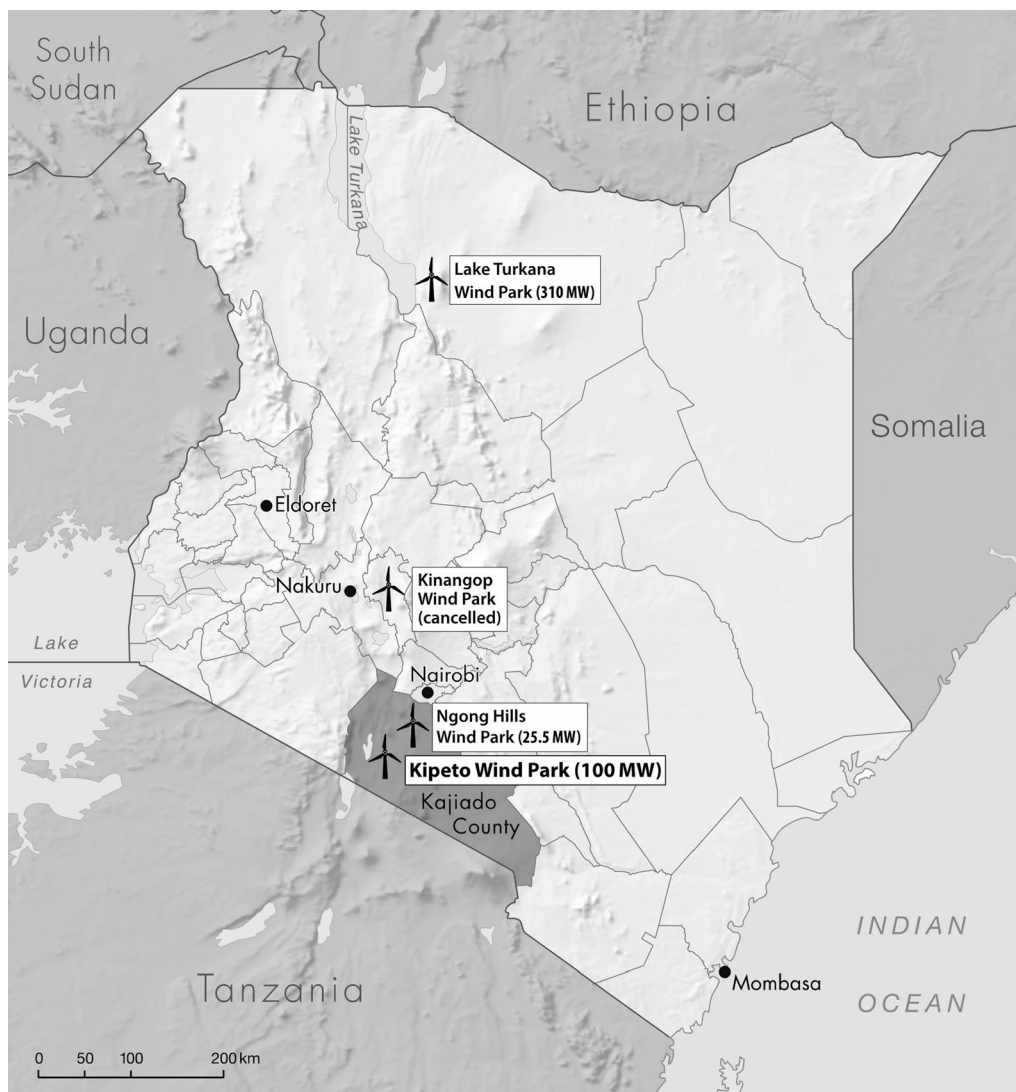
Many studies investigating the expansion of renewable energy infrastructures have emphasized the importance of fair procedures as the basis for community acceptance and compliance [20, 60]. For example, Gross' [20] study on wind energy development in Australia draws on both environmental and social justice ideas to justify her claims on the importance of procedural justice as key for soliciting social acceptance. Corroborating UNECE and the First People of Colour Leadership Summit, Gross [20] reaffirms the importance of adequate information, the ability of people to participate, and be heard. These have strong positive effects on local perception and reaction toward the project, on social acceptance, and ultimately on community empowerment as Ndi [64] has shown. This is quite important in Kenya where [semi] pastoralists, ethnic minorities, and indigenous people are often alienated and marginalized from key political and economic processes, mostly due to lack of recognition and/or flawed land consultation and negotiation processes as many studies have argued [1, 14, 15].

### **The study community and the wind energy project**

This study focuses on Kipeto, a community in Kajiado County, located South West of Nairobi (see Fig. 1), the capital of Kenya. Over the last 10 years, the county's proximity to Nairobi has necessitated an increasing demand for land by both domestic and foreign land investors for various purposes including for renewable energy development. The Maasai, a semi-nomadic indigenous community, owns the majority of the land. Land is a key livelihood asset. People depend on land to graze livestock, which is the principal economic activity of the area. Owning livestock symbolizes wealth and power—livestock are used to exert clan influence. Land is also used to grow vegetables and other crops on a small scale, mainly for household consumption. Before the 1970s, land was held under the communal or group ranch arrangement, and used mainly for pastoralism. The communal land system supported unrestricted mobility and opportunistic grazing—allowing pastoralists to move with their animals to areas of under-utilized

forage during periods of drought [65–67]. Nevertheless, between 1970 and 1996, there was a new wave of individual ownership of land, encouraged primarily by those occupying the corridors of political and economic power in Kenya, prompting the then President Moi to make a pronouncement, stating and reiterating that since all Kenyans have the right to own their land, group ranches should be abolished; and the land be sub-divided among its members (Galaty [68], citing *Kenya Times, Saturday April 15, 1989*). Land in Kajiado was sub-divided into individual holdings and people were given freehold title deeds [69]. Some have argued that sub-dividing land has negative implications on pastoral mobility as well as on livestock carrying capacity of available land per household [70–72]. The land allocated to individuals vary from 50 to 1000 acres.

The Maasai of Kipeto are polygamous—a man can have more than one wife, with more than six children per household. Also, the community is patriarchal and there is a hierarchy of power relations across gender but also between age groups; and this translates into decision-making. As Dorothy Hogson [74] has observed, even though gender roles in Maasai culture are changing, in traditional Maasai societies like Kipeto, elderly male voices are still privileged over youths and women, particularly on matters concerning land. Husbands are generally seen as household heads, while women tend to assume a subordinate position in their homes, unless unmarried. Inheritance of land is mainly through the male line, although female inheritance is possible when there are no males or when the husband dies. This explains why title deeds are mostly in the hands of men. However, due to increase awareness on women's land rights and human rights leading to changing national laws on inheritance, many Kenyan women (including women in Kipeto) are now in possession of title deeds. By possessing title deeds, landowners in Kipeto tend to exercise more power and control over their land, compared to where there are no title deeds or where land is communally owned, as is the case with communities hosting, for instance, the LTWP and geothermal developments in Marsabit and Baringo Counties, respectively. In Kipeto, landowners can decide whether to retain, lease or sell land to potential land investors, as the need arises. This made it easier for Kipeto Energy Limited (KEL) to identify landowners and begin the negotiation process with them from 2008. Cognizant of the increasing demand for land in the Kajiado County, and upon request for land by KEL, some landowners of Kipeto positioned themselves at the land-resource frontier to strategically negotiate large-scale land deals, with the county government playing only a guiding/assisting role. Land was leased-out to KEL for wind



**Fig. 1** Map of Kenya showing project location: readapted from Greiner et al. [73]

energy development for a period of 30 years, instead of sale, which was the company's initial intention.

KEL owns Kipeto wind energy, in partnership with African Infrastructure Investment Fund 2, International Finance Corporation and Craftskills Wind Energy International Limited, financed with funding from the Overseas Investment Corporation (OPIC). In 2009, KEL was awarded a concession license to undertake feasibility studies and subsequently, to generate electricity through wind energy in Kipeto. The project employed specialists and consultants to conduct a series of environmental and social impact assessments, to ensure conformity with international best practices as outlined in the International Finance Corporation (IFC) environmental performance standards [75].

In 2016, KEL entered into a 20-year Power Purchase Agreement with Kenya Power LTD, a government-owned monopoly in charge of electricity transmission and distribution to supply 100 MW to the national grid at the Isinya sub-station in Kajiado County [75]. The project went operational from January 2021. It is the second largest wind energy project in Kenya after the Lake Turkana Wind Power (LTWP) project, covering approximately 70 km<sup>2</sup>. It currently hosts 64 turbines. Although KEL was awarded its concession license in 2009, land acquisition for this project was a huge challenge from the outset due to disagreements over forms of benefits [15, 76]. More details on agreed forms of compensations and benefits to landowners have been documented in Ndi [64]. Of the total land acquired,

only about 20% of it has been put into effective use—primarily for the installation of turbines and cable lines.

After the land negotiation, benefits to the community and to landowners are in the forms of annual rent (based on the size of the acquired land), employment, newly built houses to displaced persons, and most importantly, landowners are allowed to continue using the acquired land to support their traditional livelihoods practices (e.g., farming and grazing) as long as they do not interfere or cause harm to the company's property (see Fig. 2, under the section 'study community and the wind energy project'). All terms and conditions of the lease agreement are in an MoU signed with landowners in Kipeto.

### Methods

The research takes an exploratory approach to identify aspects of the consultation processes as perceived by local landowners themselves that qualifies the land consultation and negotiation procedure as either fair or unfair. Each interviewee provided his/her perspective on the consultation process. Fieldwork took place from February to March 2023 with a follow-up visit in December the same year. The research used a semi-structured interview guide to elicit data in Kipeto. Interviews were conducted with three categories of stakeholders: county government officials (at the office of the Deputy County

Commissioner and with a Local Chief); company officials and employees; and with local communities. Interviews with county government officials helped to harness insights concerning the role of the government in promoting and/or facilitating renewable energy development in Kipeto in particular and Kenya in general. Interviews with company officials helped to explain the company's approach to land acquisition; how it engages with local communities; promises made to landowners; and challenges faced, etc.

Community interviews targeted two groups of landowners to provide their perspective on the consultation process. Landowners were identified through snowballing technique [77], but also by purposeful sampling—by moving from house-to-house according to people's availability: the first group consisted of eight (8) homesteads belonging to landowners who accepted to lease land. These are the direct beneficiaries of the wind project. The second group, consisting of eight (8) homesteads were those who refused to be part in the project and so, did not benefit directly. This group was skeptical about the promises made by KEL; drawing from negative experiences suffered by some communities associated with other energy projects like the Olkaria geothermal plant in Nakuru; and so, wanted to avoid future land complications with KEL. Even though they refused to cede land,



**Fig. 2** Image showing wind turbines. Source: Author

they have encountered no pressure or repression from the State or KEL, and they continue to retain their individual land to date. Interviewing these different groups enabled triangulation of information from across sources especially regarding the land acquisition procedures.

Most community interviews were conducted in people’s homes. It started with the author introducing himself and the purpose of the visit, followed by brief discussion about the energy situation in Kenya. Such general discussions helped to bridge the communication gap between the researcher and local communities. Although the author tried to talk to interviewees on a one-on-one basis, in most cases, this was difficult. Other family members would occasionally join in the interviews, mostly as listeners—gazing and smiling, but they sometimes throw comments to either confirm or reject an opinion. While such intrusion appeared to interrupt the interview process and distort the exact head counts of interview participants, it also helped to enrich the conversation and enabled the author to understand the local dynamics and diverse perspectives among people from within the same household. Community people were asked questions relating to the land consultation process with the primary intention to assess the extent to which key elements of procedural justice were considered. Drawing from UNECE’s [23] three pillars of procedural justice (mentioned above), participants were asked questions relating to their participation in the project, communication and access to information, and stakeholder engagements. Other questions also queried whether local voices were heard and if landowners and community people were treated with respect. The questions were broad in scope to understand the land acquisition approach, but specific to capture people’s perspectives about the procedure in terms of fairness in the process. Both English and the Maasai language were used to collect data. The author made use of a research assistant, to help with translation where the interviewee could not express him/herself in English or where he/she preferred to speak in Maasai. Each interview lasted between 1 h and 1.5 h. Interviews were not recorded at the request of respondents. Direct quotes were verified with respondents during fieldwork.

**Table** summarizing interview categories and participants

Interview categories	Number	Rationale/purpose/distinguishing characteristic
Company representatives and employees	<i>n</i> = 6 persons	To understand company’s approach to land acquisition; how it engages local communities; those (not)involved; promises to landowners; challenges and benefits of project; conflict management mechanisms; etc
Landowners who accepted to cede land and are participating in the project	8 households, each household contains a minimum of 6 children	These are the direct beneficiaries; have received newly built houses; and are receiving rent for the leased land. Interviewing this group helps us to understand the reasons for their involvement in land deal; how they were approached by KEL; their perspective in terms of fairness of process; how the consultation and negotiation proceeded; conditions for leasing land; how decisions to lease land was arrived at; etc
Landowners who refused to cede land and opted out of the land negotiation	8 households; each containing a minimum of 6 children	This group has no direct benefit, except for corporate social schemes and other generous provisions to communities—like the distribution of food items during the peak covid-19 in the county. Interviews help us to understand how they were approached by the wind company seeking land; what they think about the company; why they refused to cede land; their general perception of the consultation process; etc
County government officials and a local chief	<i>n</i> = 5 persons	To gain insights concerning the role of the government from land acquisition to project implementation vis-à-vis community concerns and interests



Moreover, because land is a sensitive topic in the county, some of the interviews were conducted informally—mostly in places like a local bar or grocery store. At the time of fieldwork, an informal conversation with a management official revealed that the company was making some efforts to fulfill some of its un-met promises to communities, including the establishment of a Community Trust Fund where 5% of the proceeds realized by the company would be allocated to the Kajiado County to support its local socio-economic development. This probably explains why some Kipeto Energy officials were overly cautious about being interviewed formally during fieldwork. Formal and informal conversations with community people and some company employees who requested anonymity revealed some of the on-the-ground realities and important dynamics accompanying pastoralists involvement in land deals. Thus, understanding the importance of the application of some key principles of procedural justice during consultation and negotiation requires seeking answers to questions such as, how was land negotiated, with whom and by whom? Who participated in consultation and negotiation and who did not and why? How did people participate? How consultation and negotiation proceeded? Whether land givers were/are satisfied with the process or not, etc.

## Results

### Local perspective of fairness in the process and the importance of ensuring procedural justice

This section explains key aspects of the consultation process that shapes local perspectives of fairness of the process and enables landowners' acquiescence and compliance toward the wind energy project. These include, among others: effective communication, inclusion and voluntary participation of landowners in land consultation and negotiation, and the formation of a community initiative group, etc. These are discussed below.

### Communication exchange and access to information

The importance of effective communication and access to information between land investors and local communities was paramount in this current context where land is individually owned, where local livelihood is predominantly linked to land, and where land conflict is common. Here, people depend on land for grazing and crop cultivation. Unlike in many land acquisition approaches where state authorities, investors, and few political and community elites negotiate access to land on behalf of the entire community (see for instance [1, 14]), the acquisition approach used by KEL in Kipeto, according to interviewees, involved a wide variety of community actors deliberating over a lengthy negotiation process that lasted more than a decade. As Sovacool et al. [54]

strongly argue, the absence of a meaningful deliberative process to address the risks and costs inherent in large-scale energy projects exemplifies a situation of energy injustice. Conversely, full information disclosure and policy mechanisms to foster public participation are essential to achieving procedural justice [78]. Interviews revealed that KEL's community-entry approach to seeking land was initiated by the people of Kipeto themselves, and not by intermediaries or land brokers. Over ninety percent of all respondents (including those who refused to lease land) revealed that local consultation was one of the most acclaimed efforts made by KEL—whereby its representatives provided adequate information about the wind project to landowners and community—and landowners had the option whether to participate or not.

An important first step in KEL's communication approach was to reach-out to a Kipeto indigene, asking him to convey to the entire community, the company's interest to develop a wind farm in their community. To this effect, the indigene, later on, contacted other community members and the entire village became aware of the planned windfarm. The author was not privy to know where and how the company authorities met this particular Maasai and why he was chosen. A landowner explained:

*'...One of our brothers told us that a wind company is interested in our land...'* (22/02/2023).

*Another landowner added '...when we got the news about a certain wind energy company, some people were happy, others were not...'* (24/02/2023).

A common feature of the above respondents points to the fact that people were informed about the company's intention to acquire land for wind energy development. This awareness by local communities, particularly landowners is quite important given that local people also depend on the same land for sustaining traditional livelihood activities.

Interviews confirm that landowners and community people were already aware of KEL's intention to acquire land before the company authorities commenced consultative meetings with both participating and non-participating landowners. Information disclosure helped the landowners, particularly the participating landowners to reflect upon their thoughts before entering into the land lease agreement. During interviews, the author was told that KEL officials began the land consultation process, first, by visiting individual households to officially express the company's interest to acquire land. Later on, the company organized a series of public participation meetings to discuss *inter alia* the planned duration of their proposed project; the areas suitable for the wind turbines and power lines; some envisaged challenges

accompanying the land acquisition; as well as benefits of the project to landowners in particular, and the Kajiado community in general. In particular, during consultation meetings, participating landowners were also notified that those whose homes would coincidentally fall on the same land parcel earmarked for the wind turbines would be asked to move, and would be resettled elsewhere in new houses constructed within the same land claimed by the landowner.

While information flow from the company to participating landowners forms the first part of the expected two-way communication flow, it was interesting to note in interviews that during group meetings, landowners presented some key conditions to KEL prior to consenting to ceding land. In particular, the author was told that landowners, including local women, held tight on the request to maintain continuous access to the acquired land for crop production and grazing; and that upon expiration of the 30-year lease term, they (landowners) would decide whether to extend the lease or not. KEL consented to these key conditions by the landowners. Thus, by accommodating local views, concerns, needs, and expectations, it is fair to say that KEL completed the second part of the communication process in land consultation and negotiation, which landowners and those concerned with the land deal perceive as a fair approach. An indication of fairness in land consultation and negotiation with affected communities can be deduced from the following statements made by a landowner:

*‘...We gave the company some conditions before leasing land: for example, we agreed to lease our land for 30 years...’ (24/02/2023). Another Maasai posited: ‘...We also told them that we will still need the land for grazing and crop cultivation...; and the company agreed...’ (24/02/2023).*

The above quotations show there was a considerable degree of communication between the wind investor and the participating landowners during land consultation. In addition, on the one hand, the quotations also show the agency of the landowner, how they were also negotiating strategically—and are/were not necessarily ‘victims of progress’ [79] as argued in some scholarship; they roll out terms and conditions that ensure continuous support to their local livelihood practices. On the other hand, although the company prioritizes its benefits, it nevertheless agreed to local people’s desire to continue accessing the acquired land. To qualify the company’s acceptance to some of the key conditions, a company representative posited:

*‘... we are happy to let people continue with their livelihood activities as long as it does not affect the*

*wind farm...’ (22/02/2023).*

Communication between KEL and participating landowners was done with the supervision of the county government. Respondents attest that among other responsibilities, the county government’s primary roles were to monitor the process, making sure negotiation procedures were appropriately conducted, and that both parties respect the terms and conditions of the lease agreement as stipulated in the MoU. The county government was also mandated to assist in managing the planned community trust fund, and to mediate in case of conflicts between local communities and the company. Still, in an attempt to ensure a fair negotiation procedure, both participating and non-participating landowners revealed that the company employed the services of a Maasai lawyer—to help explain to community people, the legal implications of leasing their land, but also, to explain to them that their participation in the project was optional and voluntary (confirmed [69]). The majority of the interviewed landowners mentioned that clarifications from the lawyer helped to bridge the communication and knowledge gap between KEL officials and local communities, particularly those without formal education. Nonetheless, trust issues were raised by a few landowners and community people (particularly by the youths) regarding the use of the Maasai lawyer. The main community concern was that because the lawyer was on the payroll of KEL, he would probably not fully represent the interests of local communities. Interviewees mentioned that KEL was aware of this community concern at the time of land negotiation and reacted by suggesting to participating landowners to bring their own private lawyers during consultation meetings, as they deemed it necessary. Interviewees confirmed that few participating landowners who could afford legal fees yielded to this suggestion and employed the services of a private lawyer during negotiation. This allowance by participating landowners to use private lawyers to their own accord helped to facilitate communication exchange with the company representatives during land consultation and negotiation. According to the participating landowners, this was fair.

#### **Inclusive, voluntary participation of landowners and local community members**

In as much as two-way information and communication exchange constituting an important element of procedural justice, local inclusion and participation and giving ‘voice’ to potentially affected local people remains critical in shaping social acceptance and project outcomes [80, 81]. As already elaborated above, consultation proceeded, first with individuals before progressing to community

level. At the initial consultation phase, every community member (men, women, and youths) was invited in public meetings whose purpose was to explain the wind project. Calls to attend meetings were made by the village head and council of village elders who designate a community member to go around the village with a whistle or traditional gong, inviting villagers to assemble for meetings. This method of invite ensures quicker percolation of information at the village level.

Interviewees revealed that two categories of landowners emerged during consultation: on the one hand, were those who were not convinced of the potential benefit of the project to them, and so refused to cede land and opted out of the land negotiation in the first few years of discussion. The uninterested or non-participating landowners argue that they prefer to preserve land for their children and grandchildren, and that their disengagement from any land deal would simply prevent future land-related complications with the wind energy company. On the other hand, were the landowners who saw the project as beneficial, and so decided to subscribe to it (also referred to as the 'willing' or 'participating' landowners), albeit under certain terms and conditions mentioned above, prior to leasing land. Thus, when the uninterested landowners exited the negotiation scene, the company continued discussion with the willing landowners. This confirms the voluntary dimension regarding the landowners' decision as to whether to cede land or not. The IFC standards recognize and prescribe stakeholder engagements as necessary for building effective and responsive relationships between projects and host communities, including ensuring proper environmental and social impacts analysis [82]. Also, other international instruments such as the United Nations Declaration on the Rights of Indigenous Peoples require the free, prior, and informed consent of indigenous communities in the design and implementation of projects in their territories [15]. Cognizant of these, interviewees mentioned that KEL convened several public participation meetings with the 'willing' landowners and their families, explaining the project, listening to their concerns and soliciting their views, and interests, to be factored in the decision-making process. These, according to Sovacool and Dworkin [83] are critical for addressing energy land and energy-related injustices. All the participating landowners mentioned that the numerous meetings enabled them to reflect over their decisions, before deciding whether to lease land or not.

A striking revelation noted in interviews was the role of culture in shaping the land acquisition process. In Kipeto, there exists a hierarchy of power relations across gender and age groups. According to interviewees, the Maasai culture prescribes that women and youths rally

behind their family heads—whom in most cases are older males, and give them their full support in matters concerning land. Participating landowners mentioned that KEL respected this cultural prescription of men playing frontline roles in decision-making, and this in turn made the consultation and interaction process between the duo relatively easier, since participating landowners could automatically gain the support of other community members, including women. But women, the author was told, were not completely overshadowed. They (women) also played the frontline role of determining the location and design of the newly built houses provided to all displaced homesteads. The reason being that in Kipeto, women are generally seen as the 'keepers' of the homes and would want their houses to look a particular way, especially the location and distance between the main house and the kitchen and pit latrine. This ownership of houses by women is captured in a statement made by a male farmer when he asserted that '...a house does not belong to the man... it belongs to the women...' (21/02/2023).

In contemporary times, one would expect this power asymmetry over land to be contested by women—but this was never the case in Kipeto. Instead, women mentioned that they had no issue about men making the key decision since they (men) are the head of the family and in control of land. As one woman noted: '...I attended the meetings... but my husband decides when it comes to land... Another woman asserted '...we believe in our men to take decision concerning land...' (24/02/2023). The general impression from interviews is that women seem to trust their husband's abilities in making key decisions when it concerns land, which to an extent confirms men's leadership position as family heads. But this acceptance of male dominance by women on land issues might further consolidate existing gender inequalities in the society, as other studies of feminist political ecology and gendered access to resources have identified [84–87]. Ironically, as Ndi [88] and Wisborg [89] have argued, a major difficulty in attaining gender equity in land deals stem from the fact that those who suffer the most from discrimination have the least power to defend themselves—women in this case. It remains an open question if Kipeto women are/were simply respecters of culture or are/were unable to express their views in the presence of their men. Thus, additional research adopting a gender disaggregated data collection method would help crosscheck whether the views expressed by women were not influenced by the presence of their husbands during interviews.

Like the women, Maasai youths also rallied behind their parents to support their consensus-based decision and to give approval to the land deal. The age-sect cultural practice has a role to play here. Following this

age-sect cultural practice, youths tend to trust the opinions of people older than them—in this case, parents, and to follow their lead—indicating a strong ‘social power relations’ [90] within the households. As Svarstad and Benjaminsen [34] have observed, some social groups and individuals are poorly recognized in environmental interventions—in this case, the Kipeto youths. Nonetheless, the pursuance of and/or adherence to the age-sect cultural prescription raises critical unanswered questions regarding genuine participation in land consultation by the youths. Additional studies examining an intergenerational perspective about whether or not to allocate land for large-scale wind energy projects would shed further lights on these issues. Nevertheless, the few youths from the participating households interviewed claimed that their perspectives and concerns were sought during consultation; stating further that they (youths—both male and female) were mainly concerned about gaining formal employment with KEL. Meanwhile, their parents were more concerned about generating income by leasing land. In other words, among community members, needs, interests, and aspirations vary, although common community interests also prevail. For instance, the community at large wants continuous access to land to grow crops and graze cattle. KEL’s acceptance of this key community demand among others, including being coupled with the financial and material incentives provided to participating landowners, have helped to influence local perception and facilitated landowners’ acquiescence and compliance toward the wind energy project. This also probably explains why, to date, there has been no community mobilization against the wind energy project as commonly envisaged in some other energy sites in Kenya.

#### Formation of a representative committee

Although two-way information exchange, and the inclusion and participation of landowners exemplifies a fair land consultation procedure, it is equally fundamental for the views of other community members to be considered as part of the process to ensuring procedural justice. Interviewees revealed that although there was a lawyer to help clarify legal issues and facilitate communication during consultation, community people suggested to KEL, the need for a community representative committee group that would oversee grassroots affairs, liaise with KEL, and facilitate information exchange during and after the implementation of the wind project. KEL agreed to this suggestion—and this led to the formation of a representative group called the ‘Community Initiative Committee’ (CIC). The CIC members were elected from within the Kipeto community (consisting of village elders, men, women, and youths), and supplemented by

a representative from the county government and KEL. Participating landowners mentioned that when any community issues arose linked to the wind project, the CIC would meet with KEL authorities in the presence of a representative from the county government to seek solutions. The CIC in turn provides feedback to all those directly concerned.

Interviewees mentioned that the role of the CIC is important considering that a large segment of the population is not formally educated and could barely read or write. Participating landowners recounted that the CIC serves not only as the link with the company, but also as local gatekeepers of community affairs. The committee members are entrusted with the responsibility to work for the interest of the people—to defend them on matters concerning land, including issues of human rights abuse. This is very important in the project area because, at the moment, Kenya has no law that guides the interactions between businesses and human rights [69]. However, there are indications that the government plans to design a national Action Plan on Business and Human Rights that will enable businesses, regardless of the size or operational context to incorporate human right concerns in their agenda [69].

In a nutshell, the key drivers for local acquiescence and compliance from the perspectives of the landowners, grounded on procedural justice principles include:

- Effective communication with landowners and families
- Inclusion and voluntary participation of landowners in land consultation
- The formation of a community initiative committee
- Acceptance by KEL to certain community conditions, e.g., to lease land instead of sale
- Accommodation of traditional livelihood practices (like farming and grazing)
- Provision of benefits (e.g., jobs, new houses, and finance)

#### Discussion

Land acquisition for wind energy development in Kipeto has revealed the importance of local people’s involvement in processes that potentially has implications for their livelihoods. Using a procedural justice lens, the study provides insights on the importance of local perception of fairness of process as the basis for landowners’ acquiescence and compliance, although with the expectation to derive financial and material incentives. Two key arguments emerged: first, the study argues that for large-scale renewable energy projects to be accommodated in and by communities, access to land must be properly negotiated, particularly with the actual landowners. A key

strategy for ensuring effective negotiation, as shown, is proper communication. Landowners who participated in interviews revealed that participation in public meetings was huge, and communication and information exchange prevailed extensively between landowners and company authorities prior to, and during land consultation and negotiation. The two-way communication flow between landowners, their families and concerned community people, on the one hand, and KEL officials, on the other, was/is a fulfillment of a key aspect of a procedural justice element in host communities. Moreover, most interviewees felt the consultation process was fair, especially as the actual landowners were at the center of land negotiation. Soliciting landowners' perspectives and making their participation to be 'voluntary' inscribes a sense of fairness in the company's approach and possibly account for its positive outlook and perception using the lenses of the 'land-givers,' which according to Edwards et al. [91] enables people to live lives that they consider to have value.

Second, the study argues that local people's perception of what they regard as a 'fair' process of land consultation constitutes the basis for their acquiescence and compliance. Their perspective of fairness of process is based on adequate disclosure of information, meaningful participation, representation, and consideration of the views of concerned stakeholders—which are fundamental for addressing procedural injustices in communities linked to energy development as Sovacool and Dworkin [83] argue. All participating landowners interviewed presented a positive opinion about the consultation process and reported that the decision whether or not to cede land was optional. Although the final decision rested in the hands of the adult male member of the landowning family as their culture prescribes, respondents mentioned that women and youths rallied behind family heads to approve the land deals. From a local standpoint, such inclusive processes are indicative of a just procedure. On the contrary, as some scholars have opined, exclusionary decision-making processes signify highly unjust procedures and would most likely generate negative outcomes for the host communities [9, 92], and this has been the case with the infamous Kinangop and LTWP mentioned above. But in Kipeto, cultural affinity and allegiance were very instrumental in facilitating community consensus around the wind energy project—although privileging older male voices. At the same time, a cultural prescription like the age-sect practice might curtail the abilities of youths from voicing their independent views, and this epitomizes a situation of social injustice in a true sense of 'community inclusion.' Nonetheless, as gleaned from the interviews, there was a strong 'social power relations' [90] among participating households based on the claims made around fairness in process of acquisition—most

landowners made references to other energy projects as 'worst' cases. As some studies in both the global North and South have revealed, the provision of opportunities for inclusion and participation by communities constitutes central components of procedural justice [93, 94], while at the same time enabling the social acceptance of new technologies such as wind energy [20].

Outside this case study area, the literature on land acquisition for renewable energy development in Kenya generally portrays how most host communities are challenging, resisting and/or contesting many renewable energy technologies [95]. This is mainly due to flawed land consultation and negotiation procedures as well as concerns over distribution of costs and benefits [3, 4, 12, 13]. Similar trends have been observed in other parts of the global South [18, 19, 92]. In Kenya in general, although these trends are deeply entrenched in many communities hosting energy projects, and have been triggering various sorts of land-related conflicts, this current study shows that KEL made significant strides to avoid such occurrences by engaging landowners during the land consultation and ensuring that they achieve financial and material incentives from the land deals (cf. [64]). Some scholars researching the rush for land for agro-industrial investments in Africa have noted that livelihoods, homes, and histories are disarticulated when people are side-lined in processes and activities that tampers on their wellbeing [96–98]. KEL's pursuance of procedural justice tenets appears to be quite unique and uncommon in Kenya. This could be due to the high public visibility of the company's owners, partners, and funder—who are probably opened to public scrutiny, as opposed to private equity funds and individual investors that appear less vulnerable to external pressure and criticisms as Temper [8] argues.

But this pursuance of procedural justice tenets in Kipeto could be attributed largely, to the 'good will' and liberty of the wind energy investor and partners—in the sense that the company is/was not obliged by any Kenya law or regulation to do so. While such efforts on the part of the company are highly commendable and should perhaps serve as a good example for future renewable energy investors to emulate, particularly those seeking privately owned land in Maasai communities, it is incumbent on the state to institute policy measures that guide the land acquisition process in ways that promotes fairness and justice at the community level.

## Conclusion

As Klagge and Nweke-Eze [5] have observed, the government of Kenya plays a profound role in the drive toward a low-carbon future through its various state-centric support policies mentioned above. But such policies do not

seek to directly address the needs and concerns of local people. Similar observations of state-led policies that oftentimes tend to neglect social impacts have been documented by scholars such as Lee and Byrne [78], among others. In Kenya, such an approach does not only have far-reaching policy implications for the state's vision to achieve a low-carbon economy, but also raises questions around the future of rural places and people hosting these projects. Cognizant of these, the study suggests that for energy projects to be accommodated in and by communities, national-level policies need to be complemented with institutionally backed micro-level measures and mechanisms seeking to address local needs and concerns around land acquisition. For example, policies explaining the land acquisition process and clarifying issues around land rights, access, ownership, as well as the costs and benefits of leasing land prior to, during, and after land acquisition etc. These are critically necessary because local perceptions of fairness of process have strong influence on social acceptance [99]; and without a positive community outlook about the project, energy-induced land-related contestations and conflicts are most likely to arise over time.

Moreover, governance arrangements around energy projects, such as wind need to be strengthened with policies that, for instance (1) compel wind investors to conform to international best practice as outlined in the IFC [82] environmental performance standards, in particular, undertaking proper environmental and social impacts assessments in earmarked communities; (2) ensure the application of human rights and justice principles in host communities; and (3) engage landowners as active players during land negotiation. These policies have proven effective in many advanced countries such as Sweden, Germany, Spain, the US, and UK. In Kenya, such policies will need enforcement and monitoring mechanisms at the county level to play gate-keeping roles in communities. This will require the political will of politicians, local chiefs, and other community stakeholders mandated to monitor the process. This is also important because, currently, it appears there is no law in Kenya guiding how communities benefit from land investment projects such as wind [69].

Thus, for energy justice to prevail, ensuring a 'just' procedure during land consultation with the actual landowners is not an option, it is a necessity and a key strategy to avoid conflicts or resentment in host communities as some energy justice scholars have opined [20, 81]. Land investors, governments, and policy-makers who interface and negotiate with communities must ensure the provision of procedural justice in decision-making, particularly in contexts where local livelihood is strictly tied to land and where land is owned by individuals such as in

Kipeto. Even though the findings of this study suggest a positive trajectory of wind farm development in Kenya, the project is barely 4 years old; things may change over-time if agreed conditions are not met as specified in the MoU. Therefore, additional follow-up research is warranted to ascertain the extent to which both KEL and landowners live up to their promises. Moreover, additional cases examining questions around gender and generational inequalities linked to land acquisition, as well as where and how procedural justice principles could be applied in different landownership contexts with a history of land struggles, would shed further lights on these issues, support generalizations, and enrich the literature on energy (in)justice in Kenya.

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#### Availability of data and materials

No datasets were generated or analyzed during the current study.

#### Declarations

#### Competing interests

The authors declare no competing interests.

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#### References

- Pueyo A (2018) What constrains renewable energy investment in Sub-Saharan Africa? A comparison of Kenya and Ghana. *World Dev* 109:85–100. <https://doi.org/10.1016/j.worlddev.2018.04.008>
- Swofford J, Slattery M (2010) Public attitudes of wind energy in Texas: local communities in close proximity to wind farms and their effect on decision-making. *Energy Policy* 38:2508–2519. <https://doi.org/10.1016/j.enpol.2009.12.046>
- Rogei DS (2021) Mediating Maendeleo: examining the nexus between geothermal extraction, wildlife conservation and community well-being in Olkaria- Suswa. Carleton University, Southern Kenya
- Boamah F (2020) Emerging Low-carbon energy landscapes and energy innovation dilemmas in the Kenyan periphery. *Ann Am Assoc Geogr* 110:145–165. <https://doi.org/10.1080/24694452.2019.1629869>
- Klagge B, Nweke-Eze C (2020) Financing large-scale renewable-energy projects in Kenya: investor types, international connections, and

- financialization. *Geogr Ann Ser B* 102:61–83. <https://doi.org/10.1080/04353684.2020.1729662>
6. Koopman J (2012) Land grabs, government, peasant and civil society activism in the Senegal River Valley. *Rev Afr Political Econ*. 39(134):655–664
  7. Keck ME, Sikkink K (1999) *Activists beyond borders: advocacy networks in international politics*. Cornell University Press, Ithaca
  8. Temper L (2018) From boomerangs to minefields and catapults: dynamics of trans-local resistance to land-grabs Leah Temper From boomerangs to minefields and catapults: dynamics of trans-local resistance to land-grabs. *J Peasant Stud*. <https://doi.org/10.1080/03066150.2017.1398144>
  9. Yenneti K, Day R (2015) Procedural (in)justice in the implementation of solar energy: the case of Charanaka solar park, Gujarat, India. *Energy Policy* 86:664–673. <https://doi.org/10.1016/j.enpol.2015.08.019>
  10. Avila S (2018) Environmental justice and the expanding geography of wind power conflicts. *Sustain Sci* 13:599–616. <https://doi.org/10.1007/s11625-018-0547-4>
  11. Cormack Z, Kurewa A (2018) The changing value of land in Northern Kenya: the case of Lake Turkana wind power. *Crit Afr Stud* 10:89–107
  12. Greiner C (2020) Negotiating access to land and resources at the geothermal frontier in Baringo. In: Lind J, Okenwa D, Scoones I (eds) *Land investment & politics: reconfiguring Africa's pastoral drylands*. James Currey, Woodbridge
  13. Wambua C (2017) Promoting public acceptance of wind energy projects in Kenya: towards a wind-wind solution
  14. Achiba GA (2019) Navigating contested winds: development visions and anti-politics of wind energy in Northern Kenya. *Land*. <https://doi.org/10.3390/land8010007>
  15. Waters-Bayer A, Wario Tadicha H (2022) Pastoralism and large-scale renewable energy and green hydrogen projects: potential and threats
  16. Greiner C, Klagge B, Grawert E, Mkutu K (2022) Future-making and scalar politics in resource frontier: energy projects in Northern Kenya
  17. Dunlap A (2017) Counterinsurgency for wind energy: the Bii Hixoxo wind park in Juchitán, Mexico. *J Peasant Stud*. <https://doi.org/10.1080/03066150.2016.1259221>
  18. Dunlap A, Arce MC (2022) 'Murderous energy' in Oaxaca, Mexico: wind factories, territorial struggle and social warfare. *J Peasant Stud* 49:455–480. <https://doi.org/10.1080/03066150.2020.1862090>
  19. Yenneti K, Day R, Golubchikov O (2016) Spatial justice and the land politics of renewables: dispossessing vulnerable communities through solar energy mega-projects. *Geoforum* 76:90–99. <https://doi.org/10.1016/j.geoforum.2016.09.004>
  20. Gross C (2007) Community perspectives of wind energy in Australia: the application of a justice and community fairness framework to increase social acceptance. *Energy Policy* 35:2727–2736. <https://doi.org/10.1016/j.enpol.2006.12.013>
  21. Zoellner J, Schweizer-Ries P, Wemheuer C (2008) Public acceptance of renewable energies: results from case studies in Germany. *Energy Policy* 36:4136–4141. <https://doi.org/10.1016/j.enpol.2008.06.026>
  22. Newell P, Mulvaney D (2013) The political economy of the "just transition." *Geogr J* 179:132–140. <https://doi.org/10.1111/geoj.12008>
  23. UNECE (1998) Convention on access to information, public participation in Decision-making and access to justice in environmental matters
  24. Sovacool BK, Heffron RJ, McCauley D, Goldthau A (2016) Energy decisions reframed as justice and ethical concerns. *Nat Energy* 1:1–6
  25. Hogan JL, Warren CR, Simpson M, McCauley D (2022) What makes local energy projects acceptable? Probing the connection between ownership structures and community acceptance. *Energy Policy*. <https://doi.org/10.1016/j.enpol.2022.113257>
  26. Fraser N (1998) Social justice in the age of identity politics: redistribution, recognition, participation.
  27. Schlosberg D (2013) Theorising environmental justice: the expanding sphere of a discourse. *Env Polit* 22:37–55. <https://doi.org/10.1080/09644016.2013.755387>
  28. Walker G (2009) Globalizing environmental justice: the geography and politics of frame contextualization and evolution. *Glob Soc Policy* 9:355–382. <https://doi.org/10.1177/1468018109343640>
  29. Smith P, McDonough M (2001) Beyond public participation: fairness in natural resource decision making. *Soc Nat Resour* 14:239–249
  30. Barragan-Contreras SJ (2022) Procedural injustices in large-scale solar energy: a case study in the Mayan region of Yucatan, Mexico. *J Environ Planning Policy Manage* 24:375–390. <https://doi.org/10.1080/1523908X.2021.2000378>
  31. Heffron RJ, McCauley D (2014) Achieving sustainable supply chains through energy justice. *Appl Energy* 123:435–437. <https://doi.org/10.1016/J.APENERGY.2013.12.034>
  32. Schliamsberg D, Carruthers D (2010) Indigenous struggles, environmental justice, and community capabilities. *Glob Environ Polit* 10:12–35
  33. Walker G, Day R (2012) Fuel poverty as injustice: Integrating distribution, recognition and procedure in the struggle for affordable warmth. *Energy Policy* 49:69–75. <https://doi.org/10.1016/j.enpol.2012.01.044>
  34. Svarstad H, Benjaminsen TA (2020) Reading radical environmental justice through a political ecology lens. *Geoforum* 108:1–11. <https://doi.org/10.1016/J.GEOFORUM.2019.11.007>
  35. Williams S, Doyon A (2019) Justice in energy transitions. *Environ Innov Soc Transit* 31:144–153. <https://doi.org/10.1016/J.EIST.2018.12.001>
  36. Buckingham S, Kulcur R (2009) Gendered geographies of environmental injustice. *Antipode* 41:659–683. <https://doi.org/10.1111/j.1467-8330.2009.00693.x>
  37. Bullard RD, Johnson GS (2000) Environmental justice: grassroots activism and its impact on public policy decision making. *J Soc Issues*. <https://doi.org/10.1111/0022-4537.00184>
  38. Taylor DE (2000) The rise of environmental justice paradigm. *Am Behav Sci* 43:508–580
  39. Walker G (2009) Beyond distribution and proximity: exploring the multiple spatialities of environmental justice. *Antipode* 41:614–636. <https://doi.org/10.1111/J.1467-8330.2009.00691.X>
  40. Fast S (2013) Social acceptance of renewable energy: trends, concepts, and geographies. *Geogr Compass* 7:853–866. <https://doi.org/10.1111/gec3.12086>
  41. Walker C, Baxter J (2017) "It's easy to throw rocks at a corporation": wind energy development and distributive justice in Canada. *J Environ Plann Policy Manage* 19:754–768. <https://doi.org/10.1080/1523908X.2016.1267614>
  42. Rawls J (1971) *Theory of justice*. Harvard University Press, Massachusetts
  43. Schlosberg D (2004) Reconceiving environmental justice: global movements and political theories. *Env Polit* 13:517–540
  44. Young M (1990) *Justice and the politics of difference*. Princeton University Press, New Jersey
  45. Kuehn RL (2000) A taxonomy of environmental Justice. *Environ Rep*. 30:10681–10703
  46. Fraser N, Honneth A (2003) *Redistribution or recognition? A political philosophical exchange*. Verso
  47. Holifield R (2018) Introduction: The worlds of environmental justice. In: Holifield R, Chakraborty J, Walker G (eds) *Routledge Handbook of Environmental Justice*, 1st Edition
  48. Gupta A (2008) Transparency under scrutiny: information disclosure in global environmental governance. *Glob Environ Polit* 8:1–7
  49. Shrader-Frechette K (2002) *Environmental justice: creating equality, reclaiming democracy*. Oxford University Press, Oxford
  50. Pulido L (1996) *Environmentalism and economic justice: two chicano struggles in the Southwest*. University of Arizona Press, Arizona
  51. Pellow D (2002) *Garbage wars: the struggle for environmental justice in Chicago*. The MIT Press, Cambridge
  52. Clayton S (2000) New ways of thinking about environmentalism: models of justice in the environmental debate. *J Soc Issues* 56:459–474
  53. Jenkins K, McCauley D, Heffron R et al (2016) Energy justice: a conceptual review. *Energy Res Soc Sci* 11:174–182. <https://doi.org/10.1016/j.erss.2015.10.004>
  54. Sovacool BK, Burke M, Baker L et al (2017) New frontiers and conceptual frameworks for energy justice. *Energy Policy* 105:677–691. <https://doi.org/10.1016/j.enpol.2017.03.005>
  55. Sovacool BK (2014) What are we doing here? Analyzing fifteen years of energy scholarship and proposing a social science research agenda. *Energy Res Soc Sci* 1:1–29. <https://doi.org/10.1016/j.erss.2014.02.003>
  56. Sovacool BK, Dworkin MH (2014) *Global energy justice*. Cambridge University Press, Cambridge
  57. Sovacool BK, Sidortsov R V, Jones BR (2014) Energy security, equality and justice

58. Bouzarovski S, Petrova S, Tirado-Herrero S (2016) From fuel poverty to energy vulnerability: the importance of services, needs and practices. *SSRN Electron J* 2014:1–17
59. Fuller S, McCauley D (2016) Framing energy justice: perspectives from activism and advocacy. *Energy Res Soc Sci* 11:1–8. <https://doi.org/10.1016/J.ERSS.2015.08.004>
60. Cowell R, Bristow G, Munday M (2011) Acceptance, acceptability and environmental justice: the role of community benefits in wind energy development. *J Environ Plan Manage* 54:539–557
61. Hall SM, Hards S, Bulkeley H (2013) New approaches to energy: equity, justice and vulnerability. Introduction to the special issue. *Local Environ* 18:413–421. <https://doi.org/10.1080/13549839.2012.759337>
62. Jenkins K, McCauley D, Forman A (2017) Energy justice: a policy approach. *Energy Policy* 105:631–634
63. Toke D, Breukers S, Wolsink M (2008) Wind power deployment outcomes: How can we account for the differences? *Renew Sustain Energy Rev* 12:1129–1147
64. Ndi FA (2024) Land acquisition, renewable energy development, and livelihood transformation in rural Kenya: the case of the Kipeto wind energy project. *Energy Res Soc Sci* 112:103530. <https://doi.org/10.1016/J.ERSS.2024.103530>
65. Galvin KA (2009) Transitions: pastoralists living with change. *Ann Rev Anthropol*. <https://doi.org/10.1146/annurev-anthro-091908-164442>
66. Hobbs NT, Galvin KA, Stokes CJ et al (2008) Fragmentation of rangelands: implications for humans, animals, and landscapes. *Glob Environ Chang* 18:776–785. <https://doi.org/10.1016/j.gloenvcha.2008.07.011>
67. Little PD, Smith K, Cellarius BA et al (2001) Avoiding disaster: diversification and risk management among east African herders. *Dev Change* 32:401–433. <https://doi.org/10.1111/1467-7660.00211>
68. Galaty JG (1992) The Land Is Yours: social and economic factors in the privatization, sub-division and sale of Maasai Ranches. *Nomad People* 26–40
69. Sena K (2017) Kipeto wind energy project: a case study on best practice in community engagement in energy projects. *Int Fund Agric Dev*. 2(4):18–35
70. Mwangi E, Dohrn S (2008) Securing access to drylands resources for multiple users in Africa: a review of recent research. *Land Use Policy* 25:240–248. <https://doi.org/10.1016/j.landusepol.2007.07.002>
71. Otieno KJ (2021) Appraisal of the climate change resilience of a pastoral social-ecological system: a case study of the Maasai community in Kajiado County, Kenya. PhD Thesis, University of Nairobi
72. Lesorogol CK (2008) Land privatization and pastoralist well-being in Kenya. *Dev Change* 39:309–331. <https://doi.org/10.1111/j.1467-7660.2007.00481.x>
73. Greiner C, Klagge B, Owino EA (2023) The political ecology of geothermal development: green sacrifice zones or energy landscapes of value? *Energy Res Soc Sci*. <https://doi.org/10.1016/j.erss.2023.103063>
74. Hodgson DL (1999) "Once Intrepid Warriors": modernity and the production of Maasai Masculinities
75. PRNewswire (2018) 100MW Kipeto wind power project reaches financial close
76. Osano A (2021) Indigenous peoples and renewable energy projects in Kenya. Ogiek Peoples Development Program, Nakuru
77. O'Leary Z (2004) The essential guide to doing research. Sage Publications, London
78. Lee J, Byrne J (2019) Expanding the conceptual and analytical basis of energy justice: beyond the three-tenet framework. *Front Energy Res*. <https://doi.org/10.3389/fenrg.2019.00099>
79. Bodley JH (2008) Victims of progress. Altamira Press, Lanham
80. Soneryd L (2004) Public involvement in the planning process: EIA and lessons from the Örebro airport extension, Sweden. *Environ Sci Policy* 7:59–68. <https://doi.org/10.1016/j.envsci.2003.10.007>
81. Walker G, Devine-Wright P (2008) Community renewable energy: what should it mean? *Energy Policy* 36:497–500. <https://doi.org/10.1016/j.enpol.2007.10.019>
82. IFC (International Finance Corporation) (2012) Performance standards on environmental and social sustainability. In: <https://www.ifc.org/content/dam/ifc/doc/2010/2012-ifc-performance-standards-en.pdf>
83. Sovacool BK, Dworkin MH (2015) Energy justice: conceptual insights and practical applications. *Appl Energy* 142:435–444. <https://doi.org/10.1016/j.apenergy.2015.01.002>
84. Berry SS (1984) The food crisis and agrarian change in Africa: a review essay. *Afr Stud Rev* 27(2):59–112
85. Elmhirst R (2015) Feminist political ecology. In: Perrault T, Gavin B, MvCarthy J (eds) *The Routledge handbook of political ecology*. Routledge, Abingdon, pp 82–90
86. Peters PE (2004) Inequality and social conflict over land in Africa. *J Agrarian Change* 4:269–314. <https://doi.org/10.1111/j.1471-0366.2004.00080.x>
87. Rocheleau D, Thomas-Slayer B, Wangari E (1996) *Feminist political ecology: global issues and local experience*. Routledge, Abingdon
88. Ndi FA (2019) Land grabbing: a gendered understanding of perceptions and reactions from affected communities in Nguti Subdivision of South West Cameroon. *Dev Policy Rev*. <https://doi.org/10.1111/dpr.12351>
89. Wisborg P (2014) Transnational land deals and gender equality: utilitarian and human rights approaches. *Fem Econ* 20:24–51. <https://doi.org/10.1080/13545701.2013.862341>
90. Heynen N, Kaika M, Wyngedouw E (2006) *In the nature of cities urban political ecology and the politics of urban metabolism*, 1st edn. Routledge, London
91. Edwards GAS, Reid L, Hunter C (2016) Environmental justice, capabilities, and the theorization of well-being. *Prog Hum Geogr* 40:754–769. <https://doi.org/10.1177/0309132515620850>
92. Ramirez J, Böhm S (2021) Transactional colonialism in wind energy investments: Energy injustices against vulnerable people in the Isthmus of Tehuantepec. *Energy Res Soc Sci*. <https://doi.org/10.1016/j.erss.2021.102135>
93. Mitra SK (1992) *Power, protest and participation local elites and development in India*. Routledge, London
94. Renn O, Webler T, Kastenholz H (1996) Procedural and substantive fairness in landfill siting: a swiss case study. *Risk* 7:145–168
95. Hughes L, Rogei D (2020) Feeling the heat: responses to geothermal developments in Kenya's Rift Valley. *J E Afr* 14:165–184
96. Ndi FA (2017) Land grabbing, local contestation, and the struggle for economic gain: insights from Nguti village, South West Cameroon. *SAGE Open*. <https://doi.org/10.1177/2158244016682997>
97. Peluso NL, Lund C (2011) New frontiers of land control: Introduction. *J Peasant Stud* 38:667–681. <https://doi.org/10.1080/03066150.2011.607692>
98. Ndi FA, Batterbury S (2017) Land grabbing and the axis of political conflicts: insights from southwest Cameroon. *Afr Spectr*. <https://doi.org/10.1177/000203971705200102>
99. Dimitropoulos A, Kontoleon A (2009) Assessing the determinants of local acceptability of wind-farm investment: a choice experiment in the Greek Aegean Islands. *Energy Policy* 37:1842–1854. <https://doi.org/10.1016/J.ENPOL.2009.01.002>

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