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An intersectional approach to energy justice

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An intersectional approach to energy justice: Individual and collective concerns around wind power on Zapotec land

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ABSTRACT

In the Isthmus of Tehuantepec in southern Mexico, utility-scale wind power developments are hotly contested. Steady local resistance is presented by indigenous and peasant "anti" wind power groups, whilst "pro" wind local stakeholders, including many landowners, are perceived as antagonistic to the arrival of wind power. Engaging the energy justice literature and in applying a novel intersectionality approach, this paper presents an exploration of the diverse voices involved, problematising seemingly "rival" discourses in the indigenous town of Union Hidalgo. The research explores how issues of energy justice are intertwined with elements including ethnicity, class, gender, age, power, and the treatment of more-than-humans. Using a mixed methods approach that draws on concept mapping and semi-structured interviews, this paper aims to understand to what extent the lens of intersectionality serves to blur the boundaries between 'pro' and 'anti' voices. It does so by illustrating and discussing how Propietarios ("pros") and Comuneros ("antis") articulate different constructs of energy justice according to varying intersectional positionalities both as groups, and as individuals. Empirically, the paper enriches the literature on local opposition to utility-scale wind power from a non-Western perspective and deepens the exploration of the case study of utility wind power in the Isthmus of Tehuantepec. Conceptually, it advances the use of intersectional approaches in energy justice, advocating for their role in connecting energy justice theory with deeper understandings of individual and collective stances in renewable energy development contestations. This, in turn, offers opportunities to further conceptualise how to achieve energy justice for these communities.

1. Introduction

At a global level, the drive to expand renewable energy systems has been backed by discourses around anthropogenic climate change and environmental justice, resulting in the portrayal of renewable energy technologies as comparatively socially just forms of energy capture [1,2]. Nevertheless, utility-scale wind power, a renewable energy technology (RET) considered by some authors as the most contested RET to date [3–5], *can* reproduce unjust dynamics by burdening vulnerable groups, among myriad other concerns [6–8]. Yet whilst several scholarly contributions explore this "social gap" between the general public acceptance and local opposition to utility wind power from a social science perspective [9–11], the use of intersectional approaches remains unexplored. Addressing, and attending the call to consider intersectional

forms of energy justice analysis [12], this paper mobilises an intersectional approach to answer the question: How can we understand the complex multiplicity of energy justice concerns relating to local opposition and support for utility-scale wind power (USWP) in Union Hidalgo, Mexico? It does so as part of ongoing moves to de-provincialise energy justice scholarship from its European origins [13,14], with acknowledgement that the transition from fossil-fuel-based energy systems to low carbon energy systems represents a crucial moment for the identification, mediation and reconciliation of energy injustices in Latin American countries like Mexico.

Empirically, this research is grounded in the Isthmus of Tehuantepec, a predominantly indigenous region described by Boyer ([15]: xi) as the area with "the densest concentration of onshore wind parks anywhere in the world". Whilst the energy and social science literature has started to

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pay more attention to indigenous and peasant opposition to the development of USWP at a regional level [16–19], these higher-level discussions obscure in-depth understandings of the heterogenic and complex nature of localized justice constructs. In contrast, academic work focusing on specific projects or communities facilitates a clearer understanding of the social, cultural, political, environmental, and economic claims that are integral to the regional mosaic of perceived concerns surrounding USWP in the Isthmus [20–22]. This paper explores these dynamics from the perspective of Propietarios (landowners and USWP "pros") and Comuneros (local assemblies and USWP "antis") in the Zapotec town of Union Hidalgo. A more complete case study background will be provided in section three of this paper.

Our paper is informed by energy justice, a conceptual, analytical and decision making framework which over the last decade, has developed to explore, understand and (more ambitiously) act upon the concerns embedded in energy systems [23,24]. More specifically, our paper builds on calls to include the concept of intersectionality, based in feminist theory [25], to understand how "issues of energy justice are intertwined with other elements such as ethnicity, class, or power and the treatment of non-humans" ([26]: 687). This further responds to calls from Jenkins [27] for empirical insights that can critique the theoretical and conceptual frameworks being debated within the field. We argue that intersectional research allows the exploration of energy justice concerns from an individual and collective standpoint, responding to the aforementioned calls. The overall aim of this research is to understand to what extent the lens of intersectionality serves to blur the boundaries between 'pro' and 'anti' voices and to understand how Propietarios and Comuneros articulate different constructs of energy justice according to varying intersectional positionalities both as groups, and as individuals.

This paper proceeds as follows. The next section provides a comprehensive overview of the concept of intersectionality and its use in energy research, including intersecting energy justice literature. We argue that whilst energy justice is an increasingly well-consolidated field [28], intersectional perspectives can unlock new theoretical avenues and increase the practical impact of the scholarship [29–33]. The proceeding section provides a historical background of Union Hidalgo, in the Isthmus of Tehuantepec before the methods section describes the case study approach. Data collection combined stages of ethnographic fieldwork and quantitative methods between 2017 and 2019, forming part of the lead author's doctoral research. We then present the results from the mixed method study, to unpack how Propietarios and Comuneros in Union Hidalgo perceive environmental, socio-economic and political energy justice concerns related to utility-scale wind power. These findings are discussed alongside previous work around intersectional approaches to energy systems and transitions developed by energy justice scholars [31,32,34] and energy research more generally [35–37]. Finally, the conclusion section summarises and briefly reflects upon the implications of the key theoretical and empirical contributions of this paper; contributions which offer opportunities to further conceptualise how to advance energy justice within these communities.

2. Intersectionality and energy justice

Whilst some authors trace ideas of intersectionality back to as early as 1831 [38], the consensus is that the concept of intersectionality has its roots in the critiques that Kimberlé Williams Crenshaw makes to contemporary feminist discourses and identity politics [25]. As a concept, intersectionality promotes an understanding that human beings are shaped by the interaction of different social locations or identity categories – including ethnicity, indigeneity, gender, class, sexuality, geography, age, among others – all of which occur within a context of connected systems and structures of power [39]. Intersectionality also allows us to study "how the enforcement of different hierarchical social divisions are interrelated and work together to influence people's social positionality, their power (or lack thereof), and their subsequent experiences of privilege and oppression" ([40]: 1). With this in mind, McCall

[41] identifies three approaches to intersectionality, defined principally in terms of their stance towards identity categories. First, "anti-categorical complexity" would seek to deconstruct analytical categories by acknowledging that life is irreducibly complex and by arguing that establishing fixed categories produces inequalities through the process of differentiation. Second, "intercategorical complexity" uses analytical categories to document relationships of inequality among social groups. Finally, "intracategorical complexity" "acknowledges the stable and even durable relationships that social categories represent at any given point in time, though it also maintains a critical stance toward categories" ([41]: 1774].

Although still comprising an emerging research paradigm for political science, the use of intersectionality as a concept has a growing presence in feminist theory, human rights and social movements across sociology, critical legal studies, and history [42]. Intersectionality has also become a recognised theoretical tool for understanding the multiple identities that individuals and communities carry, as well as their implications in the form of uneven resource distribution and social outcomes [43]. Therefore, when applied to energy research, intersectionality as an analytical tool can facilitate a more holistic debate on how different individual actors interact with energy issues from intersecting social locations. It follows that such a stance is key in recognising and taking into consideration a multitude of individual aspirations and agendas so that fairer energy futures can be imagined and eventually achieved [37].

Sovacool et al. [44] call for energy researchers to deepen their engagement with an intersectional approach to advance the understanding of how vulnerable groups or populations outside of industrialised countries experience energy issues, including a gendered perspective. Ryan [45] has also argued that researchers should draw upon intersectionality to explore core concerns in energy research, enabling the exploration of how different identities experience energy issues from the specific standpoints created through the intersection of various social locations. Cannon and Chu [46] argue that intersectional feminist theory can stimulate energy research's ability to understand energy transitions and therefore, to envision a more just transition along political, socio-ecological, economic, and technical dimensions that avoids reinforcing potentially colonial and patriarchal dominant arrangements. Moreover, concepts like identity and gender are already instrumental in understanding access to resources, exposure to pollutants, and opportunities to participate in energy policy and science. Lennon [35], for example, uses the intersectional approach to explore the link between renewable energy technologies and the intersectional ethos of the Black Lives Matter (BLM) movement in a move to decolonise understandings of energy and energy transitions. Here, Lennon highlights that whilst energy is often characterised as "an apolitical biophysical phenomenon governed by the laws of thermodynamics, existing irrespective of human culture – in fact, it is inextricably entangled with our values and symbolic categories" ([35]:2).

Despite energy justice contributions exploring certain social categories such as ethnicity [6,32,47], gender [31] or age [48], energy justice research has rarely been approached using an explicit intersectional lens. A notable exception to this is Sovacool et al. [26], who include intersectionality as one of ten principles in their "applied energy justice principles"; an evolution of an earlier contribution from Sovacool and Dworkin [49]. These ten principles are summarised in the work of Sovacool et al. [26] and have been subsequently mobilised in the work of various energy justice scholars [50–52], yet this work is largely theoretical and designed to position future research agendas rather than being empirically led.

Intersectionality approaches can advance energy justice thinking in a number of areas [53], through a better understanding of how categories of ethnicity, class and gender, among others, are intertwined with energy issues, and latterly, how these dynamics affect perceptions of energy justice concerns [26,54]. Its application could also lead to advances in applying intersectionality thinking to policy making [55] with an

energy focus. Moreover, intersectionality could also comprise a valuable tool to reconnect energy justice with activism and grassroots movements [56], advancing impactful research without compromising the alignment, connectivity and orientation of its terminology [29], or its clear conceptual boundaries inherited from a non-activist past [27].

Following the idea that intersectional research must be appropriately situated in historical, geographical, social, cultural, and political contexts [36], this paper discusses intracategorical complexities of the energy justice concerns between Comuneros and Propietarios in the Zapotec Community of Union Hidalgo as they emerge around USWP. The following section explores some of the key historical elements of the context related to Comuneros and Propietarios in Union Hidalgo, and how they map on the intersectional categories previously mentioned.

3. Case study

"There are two Union Hidalgo, two Ranchu Gubiña"

(Comunero, Palmero, Male, +50 years old)

Union Hidalgo, a Zapotec town in the Isthmus of Tehuantepec in southern Mexico, was founded in 1882 to relocate the population of nearby "rancherias" or small agrarian settlements, burned down by Colonel Francisco Leon Hernandez as a strategy to organise scattered population in a more urban settlement [57]. The name "Union" represents the gathering of these "rancherias", with Hidalgo added as the settlement founding date coincided with the name day of Miguel Hidalgo y Costilla, one of the main characters of Mexican independence. "Ranchu Gubiña", the Zapotec name for the town, co-exists with the official name and it is common for its inhabitants to use them interchangeably. Nevertheless, the meaning of "Ranchu Gubiña" reveals a more humbling history linked to diseases and pests which destroyed agriculture in the Isthmus and caused famine in 1882. Older generations from "Ranchu Gubiña" still remember the story of how a plant named Gubiña in Zapotec saved their grandfathers from starvation [58].

More recently, in the last half of the 20th century, Union Hidalgo experienced a tumultuous political history that, alongside other municipalities in the Isthmus, creates great uncertainty around land ownership [59]. According to some authors [60,61], in 1964 the Mexican government provided Union Hidalgo with the titles for collective ownership of land, becoming an extension of the larger agrarian nucleus of Juchitan. Nevertheless, in 1966, the construction of the "Benito Juarez" dam, 3900 titles of private property were provided directly by the president to promote the irrigation district. Such a complex landscape of land ownership, became even more complex in 1978 with the disappearance of Victor Pineda, one of the founders of

COCEI (Coalition of Workers, Peasants and Students of the Isthmus) and winner of the traditional assembly elections of the Juchitán agrarian nucleus. This event meant the loss of local and communal authorities for Juchitán, La Venta, Alvaro Obregon, La Ventosa, El Espinal and Union Hidalgo, contributing to making of the legal status of land in the Isthmus highly uncertain until nowadays [62]. Under this context, land ownership makes for one of the main differences between Propietarios and Comuneros, with Comuneros defending the shared ownership of Union Hidalgo's land in areas like "El Palmar", "El llano" and some areas around the upper lagoon [59], and Propietarios arguing for the private ownership of land in areas where wind farms are being planned and constructed.

The last population census in 2015 revealed that 15,000 people lived in Union Hidalgo, with 82 % considering themselves indigenous and 56 % still speaking Diidxazá, the regional variant of Zapotec. Commerce, agriculture, and services are the main economic activities in the town. However, a diverse set of traditional economic activities are still present in many households, including selling natural medicines and traditional dishes, raising domestic animals and participation in a local palm economy based in the collectively owned land of "El Palmar" (Fig. 1). El Palmar comprises a local forest ecosystem from which people traditionally gather wood, hunting and fishing goods, fruits, and other natural resources, along with palm leaves. The collection and selling of the palm leaves is performed by "Palmeros" who sell them to the local population for sun drying and knitting. It is common to see people sitting outside their houses, chatting whilst they almost effortlessly knit the dry palm. The product (knitted or only dry palm) is sold to a truck that travels from the state of Puebla to the Isthmus every two weeks to trade palm for crafting traditional hats, beds, brooms, bags, and other goods.

Union Hidalgo can be considered a pioneer of wind power projects in the Isthmus. According to Comuneros and Propietarios, local stakeholders attempted (but ultimately failed) to develop a small wind farm in 1995 to power agriculture and irrigation, 11 years before the first USWP project in the Isthmus was constructed. This initial cluster of wind power enthusiasts were later approached by DEMEX, a Spanish utility, who convinced them to sign contracts to develop a 228 MW wind farm, which still operates today. The path was not a smooth one, however. A series of conflicts and break downs in trust between the wind power company and an initial group of landowners led to the creation of an organised resistance group [22]. Consequentially, Union Hidalgo witnessed the rising of Comuneros or "antis" engaging in civil and legal resistance against wind power, whilst trying to restore the forgotten communal authorities, collective land ownership and indigenous ways of living.
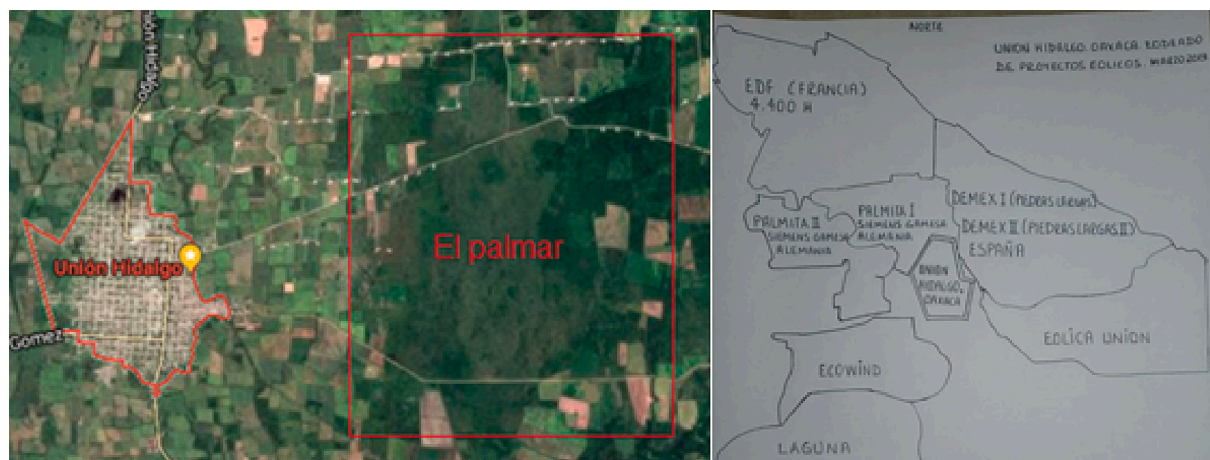

Fig. 1. On the left: Union Hidalgo and the collective area of "El palmar". Wind turbines and pathways are visible on the top right side of the picture. The location where the lead author was hosted during his stay is marked with a star. On the right: A map drawn by an interviewee shows Union Hidalgo surrounded by current and prospective wind farms.

In contrast, Propietarios or "pros" are labelled as those citizens whose lands are included within the wind farm area, often supporting incoming projects as a way to incentivise socio-economic development for the community. At the time of fieldwork, these two groups face each other as two companies –Siemens-Gamesa and EDF aimed to develop two projects of around 360 MW of utility-scale wind power [63] at the time the field work for this research was developed (Fig. 2). Comuneros and Propietarios, both integrated by local and indigenous members of the community, are engaged in a battle to avoid or support the development of such projects.

4. Methodology

A wide range of methods have been used to explore the complexity of the intersectionality concept and its application to research and policy circles [64]. Therefore, there is no methodology associated with intersectionality per se [65]. Indeed, methods can include surveys, content analysis, autobiographical and biographical approaches, in-depth interviews and discourse analysis, among others [66]. Some authors have also highlighted the usefulness of multi-method approaches in explore intersectionality, giving rise to new data collection and analysis techniques, such as those based in fuzzy-set logic [65]. This paper uses a mixed methods approach known as Concept Mapping, which is a type of structured conceptualisation that can be used by groups to develop a conceptual framework [67,68].

Concept Mapping holds similarities with fuzzy theory through its use of quantitative methods to attribute a degree to which a particular object belongs to a set [69]. This allows the creation of graphical and quantitative representations of how different groups and individuals conceptualise and articulate various statements related to a singular topic – in this case, the energy justice concerns associated with USWP developments. This methodology has been praised for applications in developing participative research in the social sciences [70], with Pokharel ([60]: 4) arguing that it "helps people to think more effectively as a group without losing their individuality".

Concept Mapping relies on the generation of different statements (generally 80 to 100) that "represent the topic as accurately and in as much detail as possible" ([71]: 668). For this research, 80 statements related to different energy justice concerns around USWP were used to develop the concept map. These statements were generated from the inductive and deductive coding [72] of extensive field notes and 58 in-depth interviews undertaken in Spanish (and ranging from 0.5 to 3 h each). The fieldwork was undertaken by the lead author (a middle-class, male, early-career academic, native from central Mexico) between October 2017 and February 2018, and the coding process and analysis was developed from March to June 2018. Of the 58 participants interviewed, 32 were locals from Union Hidalgo [73]. The lead author sought to actively engage with a wide diversity of interviewees by recording the relevant information related to social categories (e.g., their age, ethnicity, and occupation) and where representation from a particular section of society was missing, by using purposeful sampling and snowballing to targeting their perspectives. Thus, although the statements used for the Concept Mapping were not developed in a participatory fashion per se, they represented a wide range of perspectives and were developed with careful attention to positionality-led subjectivities and biases.

Following the generation of the 80 statements (capturing environmental, technical, socio-economic, political, and cultural concerns from interviews), a second fieldwork period from July to August 2018 allowed the collection of quantitative data from eight Propietarios and sixteen Comuneros through sorting and rating activities. For the sorting activity, participants were requested to order the 80 statements "in a way that makes sense to them", before naming each pile with a short descriptive label. The result of an individual sorting process can be seen in Fig. 2. After the participants finished sorting the statements and the researcher collected the data, they were asked to rate the 80 statements on a likert-type scale according to how important they believed each of these concerns to be. The categories were: 1- "not important at all"; 2- "not so important"; 3- "important"; 4- "very important"; 5- "extremely important" [74].

The quantitative data that emerged from this exercise was later used to develop the concept maps and graphics (Figs. 3 and 4) on which the later cluster analysis is based. These were developed used R-CMap, an open-source software developed by Bar and Mentch [75]. Throughout the analysis, attention was paid to intersectional concerns by assessing the emergence of both in-group and between-group areas of agreement or disagreement according to various social locations and categories.

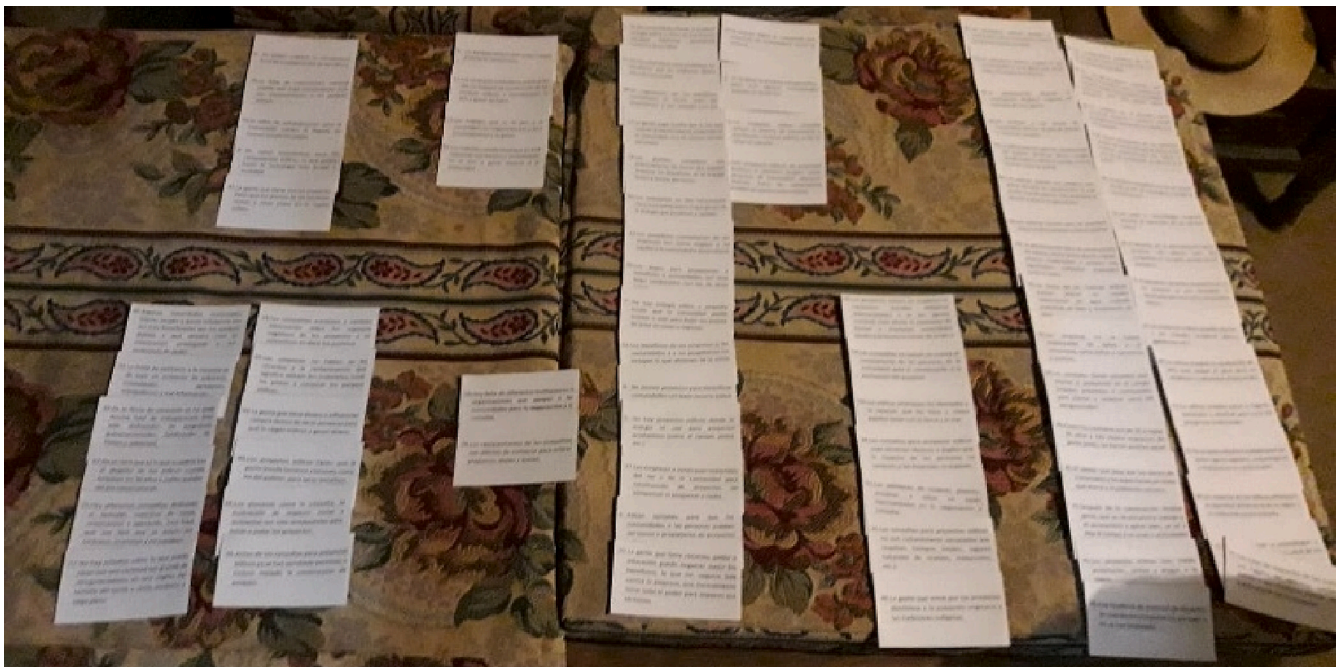The lead author undertook a final field trip to Union Hidalgo in

Fig. 2. Result of an individual sorted process; the 80 statements have been clustered into different groups (photograph taken by the lead author).
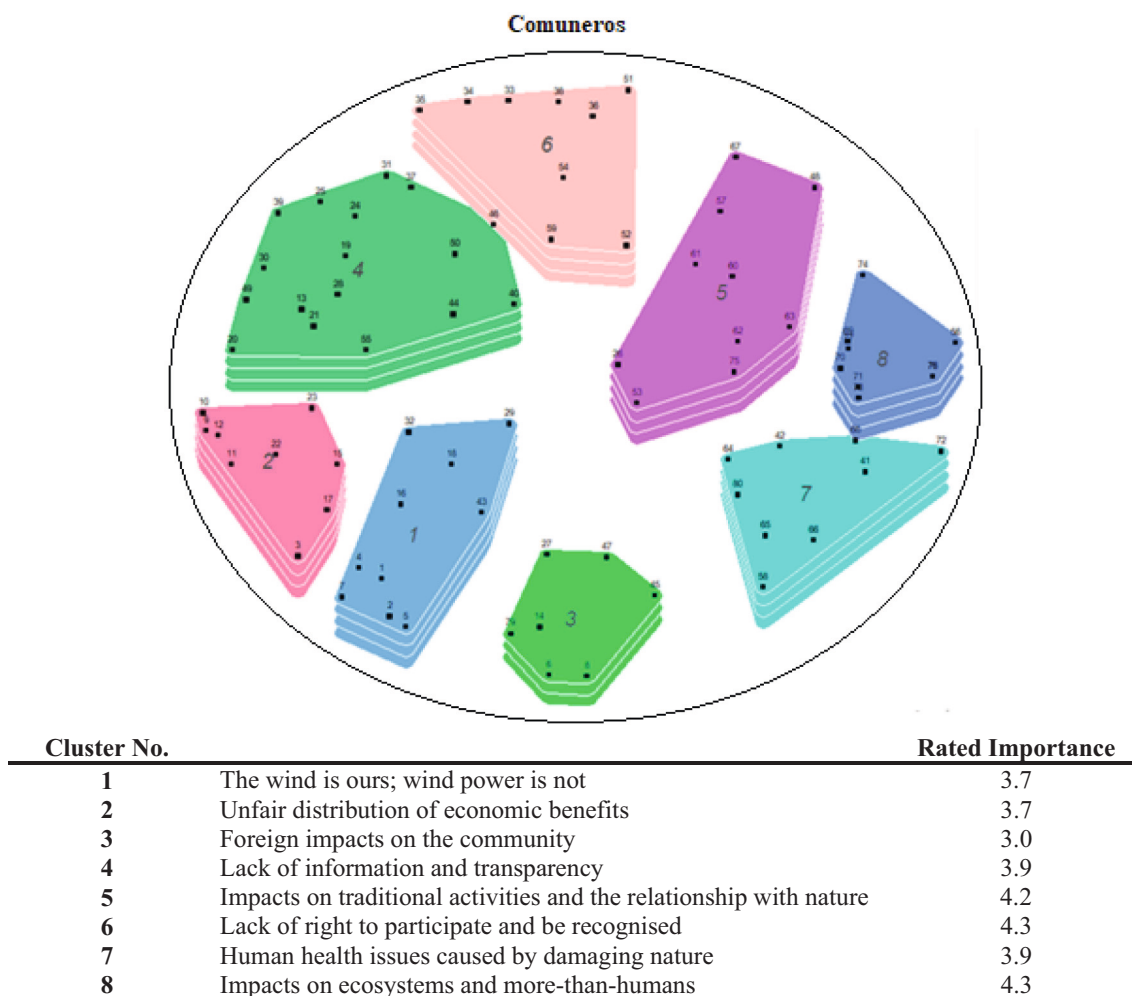
Fig. 3. Image and table summarising the Concept Mapping process of the Comuneros group.

Cluster No.		Rated Importance
1	The wind is ours; wind power is not	3.7
2	Unfair distribution of economic benefits	3.7
3	Foreign impacts on the community	3.0
4	Lack of information and transparency	3.9
5	Impacts on traditional activities and the relationship with nature	4.2
6	Lack of right to participate and be recognised	4.3
7	Human health issues caused by damaging nature	3.9
8	Impacts on ecosystems and more-than-humans	4.3

August–September 2019 for the data interpretation phase; the concept maps, clusters and graphics were presented and explained to participants, enabling them to participate in the interpretation of results. The interpretation stage emphasises the collaborative nature of the method by developing a participatory understanding of the constructs of justice behind wind power developments in Union Hidalgo [68]. Three separate workshops were undertaken with six Propietarios and seven Comuneros as well as individual engagement with other two Comuneros.

The Concept Mapping empirical data is supported and enriched with qualitative data from the in-depth interviews and discussions during the interpretation process carried out in Union Hidalgo [76]. Any quotations have been fully anonymised, only providing information that allows the identification of the different social locations from which the individual elaborates the claims, their background as Comuneros or Propietarios, and occupation, gender, and age. The quotes have been carefully selected to represent the core themes of analysis and should not be taken as indicative of wider opinions in Union Hidalgo.

5. Findings: exploring Comuneros and Propietarios concerns around utility wind power

Figs. 3 and 4 provide a graphical and quantitative representation of how Comuneros and Propietarios in Union Hidalgo created different rated groups to make sense of the 80 statements that summarise claims around utility-scale wind power. Each one of the concept maps shows a group of clusters, eight for Comuneros and nine for Propietarios. The number of clusters was determined by the average number of individual

clusters created by each group member during the sorting stage. Each cluster is differentiated by a descriptive colour and number which were added automatically by R-CMap [75] to distinguish one cluster from another. As clusters are created based on how participants sorted different statements into piles that made sense to them, it is expected that clusters that are closer together share a similar conceptualisations. In contrast, those that appear further apart are expected to be conceptually different (i.e., meaning different things or pertaining to different groups of concepts). Nevertheless, the shapes, colours or sizes of the clusters hold no meaning in and of themselves.

In the tables below, each of the respective concept maps presents the number of clusters along with its descriptive label (describing the cluster's general topic) and its rated importance, allowing readers to navigate the concept maps and tables. The lead author assigned labels following the data analysis provided by participating Comuneros and Propietarios during the structuring and interpretation stages in order to synthesise the central topic of each cluster. The Average Importance Values (AIV) were calculated automatically by RC-map to represent the average value of importance given by participants to the different statements included in each cluster. To be clear, as a 1 to 5 scale was used to rate statements, the AIV provides a numerical estimate on how important the specific cluster and topic was for Comuneros or Propietarios.

A quick examination of the concept maps and tables from the Comuneros and Propietarios presented in Figs. 3 and 4 provides enough data to understand how both groups frame energy justice concerns around wind power. One of the first differences is that Comuneros

Fig. 4. Image and table summarising the Concept Mapping process of the Propietarios group.
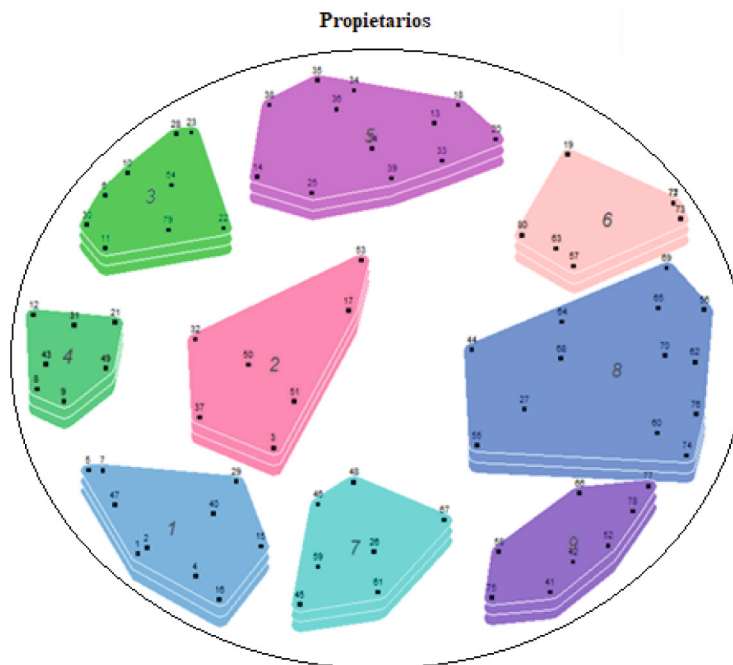
Cluster No.		Rated Importance
1	Fair distribution of benefits for Propietarios and the community	3.4
2	Lack of information and support to negotiate	3.4
3	Elite capture of benefits and community division	3.4
4	What the field used to be, and a new local economy based on wind power	3.2
5	The indigenous consultation	3.4
6	Environmental Impact Assessment will clarify any false claims	2.8
7	Social Impact Assessment will clarify any false claims	2.7
8	Environmental Impacts are made up, over-blown or unfairly attributed to wind power	2.6
9	This time the new wind company will respect the environment	2.9

attributed, in general, higher rates of importance to the 80 statements representing claims related to wind power. These higher rates of importance could be indicative of the Comuneros' role as the local opposition group, as these 80 statements mainly represented perceived injustices related to USWP. Nevertheless, the results also show clear areas of concerns from Propietarios related to the incoming wind projects, which problematises their apparent stance as a purely "pro" wind power group. Secondly, the conceptual maps and tables illustrate how, for Comuneros, the most important clusters are the ones related to environmental impacts affecting nature and socio-environmental relationships (clusters eight and five), as well as lack of recognition to effectively participate in decisions related to wind power (cluster six). On the other hand, Propietarios give the lower importance to clusters related to socio-environmental concerns (six, seven, eight and nine) and rate, with high importance, the clusters related to issues of due process, lack of information and fair distribution of benefits (clusters one, two, three, four and five). Therefore, it can be seen that for Propietarios, the main concerns focus on the distributive and procedural dimensions related to socio-economic benefits, whilst the potential environmental and social impacts are considered substantially less important (for reasons that will be explained in the following section). The relatively low rate of importance given by Comuneros to the distribution of socio-economic benefits in contrast to Propietarios, and the inverse relationship with environmental impacts (relatively low for Propietarios and high for Comuneros) could be explained by the fact that Comuneros focus on the environmental or social impacts of the projects as they are not part of most of the socio-economic benefits. On the other hand, Propietarios focus on the political processes leading to a fair distribution

of socio-economic benefits, which they directly internalise from hosting energy infrastructure in their lands.

These two concept maps represent how both Comuneros and Propietarios construct energy justice as a group, through the clustering and ranking of 80 statements. Both concept maps provide a snapshot of how both groups perceived concerns, providing an easier way to compare both group constructions of energy justice under similar variables and statements. However, as previously mentioned, Comuneros and Propietarios groups contain a great diversity of individuals, each one with their own identity categories of gender, class, occupation, age, and more, which, as we will illustrate in the next section of our discussion, have a strong influence on individual energy justice constructs, blurring the boundaries between "pros" and "antis". Therefore, even if the conceptual maps shown provide a useful means to explore group energy constructs of Propietarios (pros) and Comuneros (antis), the following sections illustrate how an intersectional approach serves to analyse the resonances and dissonances existing among individuals pertaining to these two apparently antagonistic groups. It does so across three different environmental, socio-economic and political dimensions.

5.1. More-than-human justice: birds, bats and humans

> *"According to what is currently happening with global warming what would you prefer, that birds die, or that humans die?"*
> **(Wind Power Company, Project Developer, Male, +50 years old)**

Departing from an anthropocentric and dominant Western worldview, which axiomatically endows human life with a higher degree of importance than those of other species [77], the above question was

posed by a respondent to justify the advancement of utility-scale wind power. Even if bird mortality related to USWP has been widely studied [78–81], and estimates show lower rates of mortality when compared to other energy technologies [82], the question points to a wider issue on how more-than-human beings and elements are framed within renewable energy transitions and climate change debates. Comuneros cluster eight represents a radically different worldview to typical Western lenses, placing utility-scale wind power's environmental impacts on nature and more-than-human beings centre stage. This cluster, which was one of the more highly rated by Comuneros, revolved around the discussions of how the concrete foundations of turbines affected underground water systems irrigating the region, or how the mortality of pollinisers like birds and bats could deeply impact the broader ecosystem. Thus, Comuneros cluster eight challenges traditionally anthropocentric theories of justice, and represents what Sovacool et al. [26] refers to as the indigenous perspectives of the Americas. However, the following paragraphs will illustrate how different Zapotec inhabitants from Union Hidalgo articulate what we recognise as a very broad category of indigenous perspectives of the Americas, which would most likely fail to express individual constructs of energy justice, influenced from their very own identity categories. This section therefore demonstrates that it is only by applying an intersectional lens to the analysis from different indigenous inhabitants from Union Hidalgo that more-than-human forms of injustice are revealed.

> *"Bats and birds are also suffering and dying, our nature is very wise, there is a reason why God made it the way it is, and well, everything we see, everything done by nature is in equilibrium."*
>
> **(Comuneros, Activist, Female, +50 years old)**

This statement builds on two relevant axioms. The first assumes that birds and bats, like humans, are capable of suffering, endowing them with emotions and recognising them as sentient beings worthy of consideration. In this way, it adopts animal-centred theories of justice [26,83]. The second is that nature achieves equilibrium through the interdependence of different elements. This last assumption is reflective of ecojustice perspectives, which are concerned with applying justice for non-humans, independently of their instrumental value [84].

Expanding on the idea of interconnectedness and shifting the focus slightly closer to anthropocentric views, Comuneros cluster seven elaborated over the interdependence between the human and more-than-human worlds. This cluster included discussions around how utility-scale wind posed a threat to food security due to deforestation, the mortality of birds and bats as natural pest controllers, or displacement of wild animals from traditional hunting grounds. The link between bat mortality and the increase of diseases like zika, dengue and chikungunya in the region comprised one of the most frequent and illustrative examples of these interrelations.

> *"It is very sad for me to tell the story of bats. They helped our ancestors, our grandfathers and parents to survive here in nature and are now being affected by wind power…those bats ate the mosquitos which carried dengue and zika; this is why we are having all these outbreaks."*
>
> **(Comuneros, Palmero, Male, +50 years old)**

In the claim from the project developer (a non-local, non-Zapotec participant) on the previous page, the narrative was: there is a choice to be made when it comes to wind power development and fighting climate change: Its either birds and bats, or us, so as long as we save ourselves its "fair" or ok to impact local fauna. For both Comuneros and Propietarios birds and bats (and local fauna) play a very important role in claims for and against wind power.

Until recently, there was a lack of studies about bird and bat mortality in the Isthmus, leading authorities and promoters to use estimated figures from other countries were mortality was minimised in comparison to other causes like transmission lines or domestic cats [78]. Nevertheless, a recent study from Cabrera-Cruz et al. [85] measuring

bird and bat mortality for three wind farms in the Isthmus has estimated that rates of mortality are higher than those in other countries like the USA. These claims provide visibility to species of animals which are often overlooked and unrecognised through a utilitarian and anthropocentric perspective; where they are collateral damage in the fight against climate change in a bid to save human lives.[1] Comuneros remove the labels of importance between species and recognise the rights of more-than-humans, unleashing "energy from its colonial context, (so) we can begin to disentangle the systems through which we change matter from the systems through which certain lives are made to not matter" ([35]:18). The activist work of Comuneros aims to advocate for more-than-humans by exposing potential negative environmental impacts (Fig. 5).

For Comuneros, this worldview of praising nature and more-than-humans stems from rural livelihoods, a frequent topic of discussion in the interviews. Relatedly, cluster four of Comuneros focuses on how wind power presented a disruptive element for traditional activities like agriculture, fishing, gathering, cattle, hunting, and so on. This emotional link between indigenous people, territory and nature through the practice of traditional economic activities has been studied in various countries [20,86–88]. However, as "modernity among the elite and middle classes of South America is tied to urbanity, whiteness, and Euro-North Americanized consumer culture" [89], underdevelopment in Mexico has been historically tied to conceptions of indigenity and rurality. Such association leads parents and younger generations in Union Hidalgo to actively break their bond with the field – the productive landscape - in the pursuit of modernity and professionalisation.

> *"Sadly, the fight has been delegated to our grandparents, where are the children and the grandchildren? They are not interested in agriculture; they stopped loving the field… People have been educated with the idea that living from the field means underdevelopment."*
>
> **(Comunero, Activist, Male, −40 years old)**

Against this background, utility wind power and its associated socioenvironmental impacts are framed by Comuneros as a disruptive force that not only strengthens ideas of modernisation, but which weakens the bond between younger generations and nature. This stands in contrast with traditional occupations in Union Hidalgo which retain a strong bond to in-depth empirical knowledge of and sensitivity towards their local ecosystems.

> *"This is the University, the first lecture, this is the classroom and I am the professor, a professor from the field… I saw how bats are born, I saw them sprouting from there, I am by the side of their nest every day when I go to el Palmar, I am not in an office studying them from a computer, NO, I know how they are impacted by wind power… our grandparents didn't go to primary school but they were professors from the field, they were teachers, and were lectured by other older teachers, in the river, in the stream, in the lagoon."*
>
> **(Comunero, Palmero, Male, +50 years old)**

Such claims restate the relevance of indigenous knowledge, building from a long history of practical experience with local ecosystems, as preserved by generations, in a time of energy transition and climate change [90]. However, Propietarios clusters six, eight, and nine point to a different, if not opposite, rationale about environmental concerns. Even if Propietarios are also local, Zapotec, and often part of the same age group as senior Comuneros, environmental concerns were given the lowest rankings of all. For Propietarios, most of the environmental concerns related to USWP were seen as either made up, over-blown or unfairly attributed to wind power as a discursive strategy to undermine projects. Respondents seemed confident that environmental impact assessments would prove this, and that Mexican authorities and experts

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[1] Although many animal lives will, of course, also be threatened by this global phenomenon.

Fig. 5. On the left, behind a metal structure collapsed by an earthquake in 2017, a mural painted by a wind company in Juchitan, shows a bird wearing a backpack full of pinwheels, sitting in a tree branch at the side of a wind turbine. The mural on the right, painted by an opposition group in Union Hidalgo, shows a bird fleeing from wind turbines and another one lying dead on the ground (Photographed by the lead author).

would provide any necessary clarification during open and formal informative processes.

"When the informative stage of the consultation is done all those issues will be discussed, they will talk about environmental impacts, what is true and what is not… they (Comuneros) came up with: 'because of wind farms rain has stopped', last year rain poured down the sky, and then again, they said that was because wind farms… they want to regionalise and link everything to wind farms but is not that way!"
(Propietarios, Ex-Municipal President, Male, +50 years old)

This statement presents a clear contrast with Comuneros who use indigenous knowledge from their daily interactions to challenge institutionalised or expert knowledge. Instead, Propietarios place their confidence in what Pesch et al. [91] describe as formal assessments for energy projects and their ability to adequately protect the community or restore any potential environmental impacts arising from wind power developments [24]. This battle between local indigenous knowledge and formal assessments of environmental impacts resonates with the ideas of Lennon [35] regarding little-e and big-E characterisations of energy, marked by race, gender, class and geography. Whilst little-e is related broadly to indigenous peoples expressing a moral relationship between animals, people and the land, Big-E is mainly shaped by white male energy experts through economics and policy.

Challenging claims from Comuneros, Propietarios question the sustainability of some of the traditional livelihoods frequently mentioned by their opposing group. By way of an example, hunting was presented as one of the traditional activities that seemed to have similar or even more disruptive environmental effects than USWP in relation to animal species and the natural equilibrium [92].

"Who is depleting plants, flora and fauna in the region? The population, the very population! Here we have many hunters, poor little animals, daily they go hunting them, daily… Who is finishing fauna? They are not wind power. We consume them, and we are accomplices."
(Propietarios, Pensioned Teacher, Male, +50 years old)

Here, again, wind power serves as a point of departure to interrogate and re-examine some of the elements around traditional activities like hunting. The quotes and discussions over the last paragraphs, illustrate how an intersectional approach serves to enrich the analysis and further our understanding on the diversity of ideas, epistemologies and constructs of justice existing among two predominantly Zapotec groups within the community of Union Hidalgo.

In this section, an intersectional approach to the environmental concerns around USWP has served to explore intracategorical differences between indigenous Propietarios and Comuneros. These differences expose discussions around the future and past relationships between humans and more-than-humans, as well as theorisations of justice from non-Western contexts. These discussions also invite discussions around how indigenous knowledge can be effectively and respectfully integrated into formal processes of environmental assessments [93,94]. An intersectional approach to framing more-than-humans in energy transitions and climate change could enhance energy justice principles of sustainability and intragenerational equity in energy transitions within different indigenous contexts around the world. Moreover, this section shows that whilst both groups are constituted by indigenous people, they have different views on the role (and importance) that local and expert knowledge must have in the development of wind power projects. Thus, we illustrate the diversity of opinions and categories of belonging within Zapotec groups. This also contributes to our goal of illustrating how different Zapotec inhabitants from Union Hidalgo articulate what we recognise as a very broad category of indigenous perspectives of the Americas, which would most likely fail to express individual constructs of energy justice, influenced from their very own intersectional identity categories.

5.2. Yearning for communality: collective wind and private land

"We (Propietarios) work under the understanding that land is ours, but wind is not, wind belongs to everyone in the community. Therefore, all people must be benefited."
(Propietarios, Pensioned Teacher, Male, +50 years old)

This opening quote gives a glimpse into the difficulties related to the fair distribution of socio-economic benefits from USWP when two of its most strategic resources – land and wind – are conceptualised differently under private and collective ownership models. The following paragraphs discuss accessibility concerns shared by Comuneros and Propietarios and issues of intragenerational equity, which raise conflicts [26].

The current wind farm in Union Hidalgo operates under a self-supply contract, meaning that large private consumers from outside the region purchase the power fed into the grid [95]. Cluster one (Fig. 3) of Comuneros elaborates a sentiment of perceived unfairness relating to this practice and the contrasting lack of quality or access to energy services in the region; a sentiment also shared by Propietarios. Such a

contrast creates a sense of disconnection between the wind farm and the community, and therefore, even with around 98 % of the households connected to the grid, wind power is not considered as directly contributing to meet energy services in the community by some Comuneros.

"Not even one bulb is lightened in Union Hidalgo by those windmills, not even one." **(Comunero, Palmero, Male, +50 years old)**

The lack of energy services stemming directly from the wind power project, including the lack of proper public lighting in Union Hidalgo, was a concern in the town. For street lighting in particular, respondents stressed its importance in safety as it has an essential role on decreasing robberies and other crimes [96]. Indeed, for some women in the global-south, a lack of public lighting becomes a more substantial concern as it heightens the risk of harassment or sexual violence [97]; a feeling echoed by respondents who suggested that a lack of public lighting limited their ability to move freely and without concern.

"What use has wind power if we don't even have lighting?... Some months ago, an old woman was attacked and raped near the graveyard by night... many women prefer now to move in groups, and I always try to avoid dark and lonely places."
(Comunera, Pensioned Teacher, Woman, +50 years old)

In contrast with other regions, where renewable energy resources like distributed solar have been linked to the development of wider rural productivity [98,99], USWP is framed in Union Hidalgo as disconnected from rural activities, giving rise to a feeling of unfairness. Residents with farms or cattle highlight the lack of accessibility to energy services for developing productive projects in farm land away from the main grid, for example.

"Is not fair that in our farms many times we have no power, or we have power cuts, when we produce loads of power in our own lands!"
(Propietario, Veterinarian, Male, +50 years old)

Although only illustrative, and certainly not exhaustive, these examples demonstrate that, in general, Comuneros and Propietarios share common concerns around the accessibility of energy services given the proximity of wind power productivity on collectively owned wind. Moreover, it is clear that whilst the concerns around a lack of energy services are shared at a collective level by both groups, the more specific individual concerns are informed directly by the respondents' social locations (in this case, sex and occupation). Thus, an intersectional approach towards the identification of these energy injustices reveals the opportunity for normatively-led solutions, such as the enhancement of public lighting or provision of distributed renewable solutions for agricultural projects as compulsory community benefits from incoming wind projects.

The perspectives of Comuneros and Propietarios begin to differ when discussing land-based economic benefits, including land leases, community benefits and jobs [18]. Comuneros, as with most people in the Isthmus, do not benefit from land leases, are typically considered second after Propietarios for jobs, and are not able to participate in community benefit negotiation processes [17]. Cluster two from Comuneros elaborates the feeling of intragenerational justice in the distribution of benefits and burdens stemming from wind power.

"Landowners made committees to negotiate with the companies, but all of them have been bought... What we get from wind power are only crumbs, but because people here are poor, we settle for it, they would be able to give much more!"
(Comunera, Small Retailer, Woman, +50 years old)

On the other hand, the comparatively priviledged position of the Propietarios is perceived by the group as fair given the wind farms are built on their private land. Consequently, members of Propietarios are present on committees negotiating benefits, whilst acknowledging that

Propietarios should come first in the distribution of opportunities like jobs.

"If there are no relatives from Propietarios who can occupy a job vacancy, that's fine, then we go to the community job bank, because we will create one... Who is leasing the land?Propietarios. Then who should get the benefits first? Well, Propietarios. If I do you do not own land, well, from the bottom of my heart I am very sorry, my brother."
(Propietario, Accountant, Male, +50 years old)

It follows that the differential distribution of benefits from incoming wind power projects could create new processes of socio-economic differentiation in Union Hidalgo and other communities in the region [100]. This carries knock-on implications in increasing intracommunity conflicts as the feeling of being either a "winner" or a "loser" is reinforced [16]. Moreover, as utility-scale wind projects are expected to last around 25 years, there are emerging concerns around how these processes of intracommunity conflicts and socio-economic differentiation could affect the next generations too [101]. Nevertheless, even if Propietarios seem to be the clear winners so far, cluster three shows that the elite capture of benefits is one of their more highly rated socio-economic concerns. Indeed, from discussions with Propietarios, it seems to be that they are only one step above the general population in the benefit distribution pyramid, which places influential and powerful stakeholders at the state, regional and local level at the top. These influential stakeholders include public servants and workers' unions who have the political leverage to enable wind power companies to advance their projects in exchange for benefits. The case of workers' unions seem to be a particular concern for Propietarios as they claim that they not only represent one of the many "elites" that captures most benefits, but that some of their members or associates are used to dissuade any local opposition to the project, including through intimidation or violence [17,102].

The existent issues of socio-economic differentiation become more critical in Propietarios cluster four. In this cluster, Propietarios express some degree of expectation that they might transition from a declining economy based on traditional field-based activities, to a new economy heavily reliant on USWP and its benefits. In this context, an intersectional approach allows us to analyse how senior Zapotec Comuneros and Propietarios recognise that wind power has become an issue affecting community cohesion, with interviewees commonly highlighting a stark contrast with "old times", when life in the community was simpler and people relied on the traditional ways of the past, instead of reflecting on the uncertain ways of the future [103]. This contrast manifested through the concept of commonality; a traditional way to bond the community, rooted in traditional ways of life that enabled a "better" path for the distributions of the benefits and burdens across the community. Images and murals trying to foreground ideas of commonality and community identity, like the one represented in Fig. 6, can be found in many places across Union Hidalgo.

Both Propietarios and Comuneros reflected upon the concept of "guendalizaa" or "tequio", which represents a form of communal work obligations based on cooperation and collective well-being [104,105]. Such notions were used mainly by senior participants to reflect on the contrast between the private and collective worldviews, linked to wind power companies and indigenous communities respectively, as well as their relationship to well-being and benefit distribution.

"How wind companies and communities look at things are completely opposed, between the private and collective benefit...We, people from the original cultures, have a collective mentality, and that have always kept us united... The municipal palace, for example, was built using Tequio, not a single peso was paid by anyone... wind power companies are the opposite. If they could negotiate only with one person, they would do it, it would be easier for them."
(Propietario, Pensioned Teacher, Male, +50 years old)

Fig. 6. A mural outside Union Hidalgo primary school. The mural, which says "community" at the top, depicts a tree featuring painted hands from the local children (Photographed by the lead author).

Anchored in this idea of communality, authors like Baker [106] and Merino et al. [107] have proposed that alternative schemes like community renewables could address some energy injustices related to energy access, intragenerational equity and the participation of indigenous communities in renewable energy projects in Latin America. The case of Yansa, a Community Interest Company aiming to develop a large community-owned wind farm in the Isthmus, has also been studied as a feasible opportunity to drive a renewable energy transition working closer to the worldviews of the local indigenous population, empowering them to reinvest part of the profits in the local community's common well-being [108]. The representative of Yansa, Sergio Oceransky, highlights the long term reduction of electricity tariffs, increased local internalisation of socio-economic benefits and increased participation and empowerment of local stakeholders in project planning and decision making as potential benefits of community-led projects [62,109,110].

Across its varying parts, this section has illustrated that concept mapping reveals intersectional discussions around accessibility and intragenerational equity. These discussions allowed the concept of communality to surface, connecting the previous intersectional discussions with potential practical solutions represented by community-led renewable energy projects, which could be more closely link to local indigenous communities' worldviews.

5.3. Gender, age and occupation: the world outside and inside the formal process of indigenous consultation

> *"As inhabitants of this land we should have the right to say: look, we want this project or not, just because is our land…they (wind power companies) come from outside, trying to decide what is going to be done with our land… It feels like if I went to your house and do whatever I want."*

(Municipal Government, Ex-public servant, Male, +50 years)

Following the regulatory changes triggered by the Mexican energy reform, the indigenous consultation procedure was introduced as an obligatory participatory mechanism for energy projects developed in indigenous territories [111,112]. The aim of the consultation is to "guarantee the right for indigenous people to be consulted over the proposals to develop infrastructure projects for the energy sector" [113],

based on the 169 covenant from ILO about indigenous peoples rights for Free Prior Informed Consent [114] and Mexican agrarian law [115]. This has become the critical point of political contestation between Comuneros and Propietarios who engage with radically different approaches.

Propietarios cluster five illustrates how the political world involving wind power is defined within the institutional arena of the indigenous consultation process. It is within this institutional and formal process that Propietarios have the relevant power to politically mobilise as a group, to legitimise the project and formalise the promises that had been negotiated with the wind power company. Propietarios are therefore aware of their political value for wind power companies and a positive outcome in the indigenous consultation process.

> *"I will clap if you (the wind company) can deliver the indigenous consultation on your own and without my Propietarios. If you think you are capable I will clap you my brother, but let me tell you, that you will not be able to do it. I will go with different groups of Propietarios, they are going to support me, and I am going to support them because they are my friends and my brothers… You alone are not able to deliver a successful Consultation, not even dream about it, because no one knows you in Union Hidalgo."*

(Propietario, Accountant, Male, +50 years old)

Representatives of Propietarios committees in Union Hidalgo seem to have strong political influence at a local level, including interactions with pensioned teachers, ex-public servants and owners of important businesses within the community. The teachers who actively participated in the heavy politicised union system in the region seemed to be particularly influential. The political know-how of these Propietarios leaders appears to be useful when developing a robust method of negotiation and organisation in preparation for the formal process of the indigenous consultation. This process mainly consists of rallying supporters for the project into the indigenous consultation itself in order to ensure enough political muscle to support desirable motions, guaranteeing they pass through the voting processes.

> *"Some people say it is not a true consultation because some groups arrive prepared, but that is a way to organise, we are teachers, and this is how we*

organised when naming our secretaries. Other people also had the freedom to organise themselves; this is why I say its legal!"

(Propietario, Teacher, Male, +50 years old)

However, this same framing is not shared by other Propietarios, who instead frame these political strategies as being in tension with due process, transparency and accountability [26]. One of the Propietarios claimed that the political work carried out between some committees and companies to set agreements for legitimising specific agendas over the Indigenous Consultation Process constituted a violation to the Free and Previous character of an open consultation. For him, and others, such political actions end up hijacking what is supposed to be an inclusive and participative process, transforming it into a merely bureaucratic simulation to legitimise and officialise the wind power project. Propietarios framing the consultation as a simulation did appear to silence their individual opinions in a bid to avoid diminishing the political momentum for the consultation approval.

"Look, in short, yes this consultation is a simulation... We look at how members from other committees use a piece of paper, to know what to say at specific moments. They have it in their bags, and this is why I say it is a simulation a farse... We can only wonder what is happening between the company and those committees. They don't give us any piece of paper. Therefore we can only be expectant on raising our hands; this is why I say is a simulation."

(Propietario, Pensioned, Male, +50 years old)

The last testimonies illustrate how the political experiences brewing from social locations such as occupation play a fundamental role on how different Propietarios frame the procedural concerns related to the indigenous consultation process. With this in mind, an intersectional approach provides a deeper understanding of how power is exerted by specific groups, creating situations of disadvantage for other groups, resulting in their effective exclusion from consultation or decision making processes.

In connection with the above, Comuneros cluster six explored their concerns around violations to their rights to participate and to be recognised, departing from the assumption that the indigenous consultation process serving as a bureaucratic simulation used to formalise and legitimise utility wind power projects in the Isthmus [116]. Whilst the group held heterogenous opinions of procedural issues these appeared not to stem from political experience, but according to age. Two of the younger Comuneros expressed frustration at the older Comuneros' categorical refusal to seek recognition as a participant group in the indigenous consultation. Young Comuneros believed that it was essential to politically engage with this formal process by raising their voices, leaving a record of their disagreement with the project, or in a bid to ensure better community benefits of the whole population. On the other hand, senior Comuneros believed that actively participating in a process controlled or rigged by their political adversaries would only come to strengthen the project's legitimacy given they could then argue that they were given a voice and a right to participate. The high rate of average importance for this cluster illustrates the relevance of recognition and due process for Comuneros.

"Since the last three or four years we are trying to bring back our communal roots because of conflicts, old people reactivated the local assembly to fight against wind power."

(Comunero, Activist, Male, −50 years old)

With a lack of trust in formal processes like the indigenous consultation, the Comuneros' strategy in Union Hidalgo has been based mainly on engaging with international legal NGOs and using their legal advice to stop the project(s) [22]. They also seek civil mobilisation through the regional, bottom-up indigenous opposition network to "Proyectos de muerte", or "death projects" [117]. This "death projects" umbrella is used by rural and indigenous activists in Mexico to mobilise against the environmental and social impacts of large-scale extractive and

neoliberal projects. To tap into this network, Comuneros have focused legally and discursively on the uncertain land tenancy regime in Union Hidalgo. Comuneros argue that the presidential decree which recognised Union Hidalgo as an Indigenous Community remains valid, regardless of the historical and political processes which extinguished Communal authorities in Juchitan and Union Hidalgo [22]. Thus, the complex and turbulent political history of Union Hidalgo has allowed the Comuneros to challenge wind power projects on the grounds of land leases.

"At that moment we had our eyes closed, we did not know how to begin. That is how we met the indigenous people assembly...When we learned about how land in Union Hidalgo used to be Communal, it was like a light in the middle of all that darkness...They (APIIDTT or Assembly of Indigenous Peoples of the Isthmus of Tehuantepec in Defense of Land and Territory) clearly told us that this was not a one-day or even one year fight, we do not know how long it will take, but it is not impossible, no."

(Comunera, Activist, Female, Union Hidalgo, +50)

However, the use of communal land claims is not the only legal resource to stop utility wind power. Close participation with the APIIDTT has introduced the Comuneros to a broader regional fight, leading them to include gender, social justice, defence of the territory, indigenous culture and environmental activism arguments into their political agenda. Even if the battle for sovereignty in Union Hidalgo has been important, the resultant outcomes are far from other communities with robust traditional indigenous authorities like Alvaro Obregon, San Dionisio del Mar or San Mateo del Mar [105,118]. Still, the fight for sovereignty and autonomy can be characterised in opposition to that of the Propietarios' search for institutional legitimisation.

Women play crucial roles as the main leaders of regional and local civil organisations (e.g., APIIDTT, Indigenous Women in Defence of Life or Union Hidalgo's community council). As identity politics and indigeneity has played a very important role in the history of the Isthmus [119], the role of the "tehuana", the regional Zapotec women, has become notorious as a symbol for bottom-up resistance, the recognition of indigenous rights and the feminist movement, as can be seen in Fig. 7.

Such portraits of women that strive for recognition and seek to disrupt formal male-dominated politics (represented by groups like Propietarios), also challenges imaginaries of the local indigenous women's role, moving them from housewives or sexual victims of foreigner workers [120] to empowered civil rights activists.

"As women, we realise how the government is involved, how companies arrive and how they plunder. Vile plunder between government and companies, the very governments that should defend us, that should be on our side... you begin to realise how the woman is the one coming from behind, the one who talks but is not seen. Maybe she has great ideas but is not taken into account. But in this fight, fortunately, because I have participated in it, well, I have been taken into account. Sometimes it is hard, because you still must manage the house, there is the husband, housework, there is everything and having time sometimes is complicated, but its worth it."

(Comunera, Activist, Female, Union Hidalgo, +50)

Here, then, an intersectional approach to energy justice research creates a link between the indigenous communities' fight for sovereignty as a way to gain recognition of their national and international rights in the Mexican energy transition, and activist women's struggle for increasing visibility and recognition as relevant actors in politics at the local, regional and national level.

6. Conclusion

The analysis and discussion of environmental concerns around wind power illustrated throughout this paper have demonstrated that Comuneros use ecological and animal-centric theorisations of justice to

Fig. 7. A political poster observed in Juchitan. The woman dressed in her traditional Tehuana clothes puts her hand up to say "stop". The text says: (Top) The Isthmus is ours, no to the interoceanic corridor. (Bottom) Destruction and dead disguised as progress. No, thank you!. (Photographed by the lead author.)

challenge the sustainability and intragenerational equity of USWP developments in the Isthmus of Tehuantepec. These contrast with extant Western worldviews around the development of renewable energy projects, recognising the importance of more-than-human lives and ecological equilibrium. Comuneros outline that older generations were more likely to develop a link with and in-depth empirical knowledge of nature through traditional activities, which plays a key role in framing USWP projects as environmentally disruptive. On the other hand, the same nature-based and more-than-human theorisations were also used by Propietarios to question traditional practices like hunting, thereby framing wind power as a more sustainable opportunity. These findings illustrate the ability of intersectionality to analyse the diversity of worldviews within indigenous communities, based on the clear division between how Comuneros and Propietarios perceive activities that are disruptive for more-than-humans. The findings also illustrate such diversity when Comuneros rely on a focus on indigenous and empirical knowledges and clash with Propietarios who prioritise formal processes like environmental and social impacts assessments. Yet divides between the Comuneros and Propietarios are not present in every domain.

Discussions around socio-economic concerns give rise to shared views emerging from the paradoxical situation in which communities lack access to high-quality energy services despite the fact they host utility-scale energy projects that profit from collective resources. Here, the paper has explored how the lack of access to energy services impacts the well-being of women and farmers, and give rise to strong claims that question the fairness of USWP in the region. On the other hand, the

paper has also discussed how a private conceptualisation of land leads to divisions in intragenerational equity framings between Comuneros and Propietarios, particularly as they relate to the distribution of benefits in the form of land leases, jobs and community benefits. These divisions appear in the context of intracommunity conflicts for both present generations and future generations given the reinforcing trends of socio-economic differentiation in the community. Despite this dynamic of so-called "winners" and "losers" brewing intracommunity conflicts, both groups share the opinion that an elite capture of benefits skews them towards stakeholders outside of the town. Against this complex mix of intersectional dynamics, the relevance of an indigenous worldview based in commonality arose from many different participants.

Finally, the paper has explored the themes of political concerns, and the practices and discourses used inside and outside of the indigenous consultation process in the eyes of Propietarios and Comuneros, respectively. This included unpacking the opinions of Propietarios with and without political expertise as unionised teachers and questioning the adherences of some practices to the principles of due process, information transparency and accountability. It was possible to see how the political world in which Propietarios participated was mainly delineated to advance the indigenous consultation process for legitimising the project and ensure that companies and Mexican institutions formally recognise socio-economic agreements. Here, educational levels and political mobility played a key role. On the other hand, Comuneros dynamics were divided between the young and the old. Young Comuneros defended the need to formally participate in the indigenous consultation process, whereas more elderly members framed it as a project legitimisation mechanism, believing that any formal engagement could result in adversaries arguing it was a truly participative process. Within this context, we discuss the Comuneros' engagement with NGO's legal advice and alignment with regional civil network of resistance, "proyectos de muerte", where women play a fundamental role in connecting the group to a broader political agenda including issues of sovereignty, gender, social justice and environmental activism. These findings illustrate how an intersectional approach to energy justice allows to reveal the different hierarchies and exclusions (e.g. between Propietarios and Comuneros, men and women, old and young) in the political arena dictating the decision making processes around energy systems.

Although the fieldwork confirmed strong tensions between concerns and perspectives from Comuneros and Propietarios, the findings also challenge simplistic representations of "anti" and "pro" utility-scale wind development stances in this particular non-Western, Zapotec context and in some categories of concern, blur the boundaries and reveal areas of commonality. Using a novel intersectional approach to energy justice, this paper has explored the intracategorical complexities related to perceived energy justice concerns between indigenous Comuneros and Propietarios, both as groups and as individuals. The findings illustrate that local clashes around USWP developments open various paths for Comuneros and Propietarios to discuss and connect with (seemingly dormant) issues from the indigenous community's past, bringing these into conversation with pressing community issues arising from externally driven economic developments. In so doing, this paper makes a triple contribution. Empirically, it enriches the literature on local opposition to USWP and energy justice from a Zapotec and non-Western perspective [13,121,122] and deepens the exploration of utility wind power development in the Isthmus of Tehuantepec, a development which is internationally significant due to scale and location and timing. Conceptually, the research advances the use of intersectional approaches in energy justice advocating for its role in connecting energy justice theory from both individual and collective standpoints, answering to the call from Jenkins [27], and contributing to a growing body of academic literature in energy justice and intersectionality [26,35,46]. Practically, the paper shows how these individual and collective standpoints align with potential pathways to enhance energy justice through connecting concerns around wind power with energy

justice principles. Such pathways include advancing the inclusion of local indigenous knowledge and more-than-humans in environmental and social impacts assessment procedures; developing programmes and policies to address and increase access to high-quality energy services and facilitate alternative project models that allow a fairer distribution of socio-economic benefits across local communities, or finding strategies that allow an effective political reconciliation of local actors within consultation processes - all with attention to intersectional identities and dynamics. We see significant potential for applying this approach to other contexts and encourage future research in this area, including that concerned with justice benefits as well as burdens.

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.

Data availability

The data that has been used is confidential.

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