



Wind energy farms' impacts on environmental justice and human rights

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Abstract

'Centre' groups – governments and private investors – argue that wind energy farms can contribute to global sustainable development and environmental conservation. However, the geographical and cultural landscape attachments of 'periphery' groups – indigenous people –confront the arguments of 'centre' groups. This article employs internal colonialism and environmental justice theories to discuss indigenous people's roots of opposition to wind energy farms at the Isthmus of Tehuantepec, Oaxaca, Mexico. Based on a qualitative longitudinal study developed between 2013 and 2018, the findings suggest that indigenous people's social unrest towards wind energy is based on human rights abuses, uneven regional development and environmental (in)justice. The findings are discussed based on the history embedded in indigenous people's struggle against foreign and local invasions, understood as internal colonialism. Indigenous people continue their fight to control their geographical and cultural landscapes and to preserve their visions of environmental justice.

Keywords

Internal colonialism, environmental justice, indigenous people, wind energy, Mexico

Introduction

In postcolonial countries, preventing changes to one's geographical and cultural landscapes appears to be one rationale for resistance against wind energy projects (Quintana, 2015; Terwindt and Schliemann, 2017) and a cause of confrontation between governments and businesses, on the one hand, and indigenous people's vision of the environment (Agyeman, 2014; Martinez-Alier et al., 2016; Sikor and Newell, 2014), on the other. Literature on conflicts associated with wind energy farms indicates that confrontation between indigenous people and governments and investors neglects to recognise indigenous communities' place-based attachments to the vision of their geographical and cultural landscapes (Cass and Walker, 2009; Dunlap, 2018; Escobar, 2008; Martin, 2005; Nolte, 2016). However, the rule of law to protect the basic human rights of indigenous people and changes in their geographical landscape are at the centre of the negative impacts in postcolonial countries such as Mexico. For example:

*In relation to the *Eólica del Sur* [wind energy] project, Mr. Rolando Crispín López, a member of the communal assembly at Alvaro Obregón, was assassinated on 24 July 2018 (Manzo, 2018).*

Opposition against governmental and multinational corporations (MNCs) seeking to implement sustainable energy solutions might appear retrograde to global strategies for reducing carbon emissions in the fight against climate change, such as the Paris Agreement (UNFCCC, 2015). Governments and MNCs present their investments in wind energy by strategically selecting aspects of perceived reality (Entman, 1993), such as key strategies that contribute to developing local communities in order to reduce poverty or fight climate change (e.g., FEMSA, 2017; IADB, 2011). MNCs' investments in wind energy are developed in Mexico based on the neoliberal principle (Quintana, 2015; Williamson, 2008). Little is known about indigenous people's environmental visions, which might clash with neoliberal principles of supremacy of the private sector and efforts to foster wind energy investments in postcolonial countries (Dunlap, 2017a; 2018; Martin, 2005). Even less is understood about human rights abuses and the criminalization of indigenous people in defence of their geographical and cultural landscapes, which clashes with the principles of neoliberal wind investment (IADB, 2001).

Neoliberal principles in wind energy investments rest on the superiority of market-based solutions over governmental ones. For example, the Swedish government has opted for "a get-others-to-do rather than a do-it-yourself policy" in wind energy (Corvellec, 2007: 131). In the case of Mexico, neoliberal development policies have been implemented since the 1980s following the Washington Consensus (Martin, 2005). These policies facilitated private investments in wind energy parks (Juárez-Hernández and León, 2014), but they have also been associated with an increase in social inequalities, exclusion and human rights abuses (Casanova, 1965; Dunlap, 2018; Olzak, 1983). In 2013, Mexico approved an energy reform based on the neoliberal principle of supporting national and international private investors in renewable energy. However, since the 1990s, private investors have constructed wind energy development projects in the Isthmus of the Tehuantepec region (Quintana, 2015), which is located in Oaxaca State in Mexico. The Isthmus of Tehuantepec region possesses one of the most powerful wind

resources in the world (Elliott et al., 2004). However, indigenous people in this region lack access to basic infrastructure, such as electricity (Hernández et al., 2017; INEGI, 2015). This region is where marginalized indigenous people continue their long tradition of struggles against local and foreign invasions and fight to bring development to their region (Campbell et al., 1993; Quintana, 2015).

Fairness and injustice in wind energy investments have been analysed in more developed economies based in on “older ‘centre’ – ‘periphery’ conflict”, arguing that wind turbines’ negative landscape impacts benefit ‘centre’ groups (Zografos and Martinez-Alier, 2009: 1741) regardless of the opposition of ‘periphery’ groups. ‘Centre’ groups are understood as members of élite groups in positions of political and economic power, whereas ‘periphery’ group refer to the indigenous people who inhabit the landscape where the natural resources are located. The pattern of oppression, repression and violation in postcolonial countries between ‘centre’ and ‘periphery’ groups is defined as internal colonialism (Casanova, 1965; Love, 1989). Internal colonialism is defined as a “geographically based pattern of subordination of a differentiated population located within the dominant power of country” (Pinderhughes, 2010: 2385–2386). Internal colonialism is the theoretical lens through which I discuss exclusion, human rights abuses and environmental (in)justice in neoliberal wind energy investments (Aitken, 2010; Toke and Lauber, 2007).

Based on qualitative longitudinal research (2013-2018), I discuss internal colonialism at the Isthmus of Tehuantepec, integrating insights from the environmental justice literature. The findings suggest that élite groups – MNCs and governments – appear to neglect the particularities of the history of struggles and resilience of local indigenous people (particularly the Zapotecas and Ikoojts) against local and foreign invasions, invasions that have further exacerbated the social exclusion, inequalities, environmental (in)justice and human rights abuses that indigenous people have suffered in relation to wind energy projects. This study advances our understanding of how sustainable energy development projects negatively impact indigenous communities’ landscapes as well as their survival.

The article is structured as follows. First, I present a theoretical framework on internal colonialism and environmental justice. Second, I introduce the developed methodology. In the third section of the article, the findings are presented, while also integrating past research at the Isthmus of Tehuantepec. The final section presents a discussion and the implications of the study, thus contributing to the discussion of problems regarding sustainable green energy between centre and periphery groups in postcolonial countries.

Theoretical Background

Internal Colonialism Theory

Internal colonialism refers to a process of unequal development among regions in a given country and a lack of access to economic and social benefits; these problems are seen to result from the implementation of an economic development model (Casanova, 1965; Hechter, 2017). Internal colonialism has gained acceptance in the social science literature since the 1960s with the work of the Mexican sociologist Pablo González Casanova (Hind, 1984), who emphasized ethical elements of internal colonialism, and built into his definition “the historical fact of conquest of members of one civilization by another” (Love, 1989: 906). Since then, internal colonialism has been used in the context of ethno-regional studies in Europe and the US, as seen in studies of Great Britain (e.g., Hechter, 2017; Love, 1989).

Internal colonialism involves the exploitation of people and land; it applies to different ‘centre’ and ‘periphery’ groups within a country (Love, 1989). During the European period of classic colonialism in the Global South, the following patterns (among others) occurred: (1) physical and/or psychological violence; (2) economic exploitation; (3) poverty; (4) illiteracy; (5) lawlessness; and (6) stealing and crime (Casanova, 1965; Pinderhughes, 2010). In contrast to classic colonialism, internal colonialism represents a condition in which both the dominant and the subordinate groups coexist as natives of the same country (Steady, 2009).

In this research, internal colonialism is understood as a “geographically based pattern of subordination of a differentiated population, located within the dominant power or country” (Pinderhughes, 2010: 235–236). Place-based attachments, identities, meanings and values (Cass and Walker, 2009) are present in indigenous communities, for example, in festivities, food, and indigenous languages. Place-based attachments are a conscious process in which internal colonialism might not necessarily be consciously implemented (Love, 1989). For example, the collapse of oil prices in the 1970s, among other factors, resulted in Mexico’s economic crisis, which is known as a debt crisis. In the 1980s, Mexico implemented the neoliberal development model as an alternative to the import substitution industrialization (ISI) development model to decrease dependence on oil revenues (Rangel and Garmendia, 2012). Neoliberal economic policies offer free play and open the economy (Hechter, 2017) to foreign direct investments (FDI), among other measures (Martin, 2005), but these practices can have unintended distributional consequences (Hechter, 2017) in Mexico, especially for indigenous people (McAfee and Shapiro, 2010).

Studies of disparities in regional development in the rural areas of Mexico inhabited by indigenous people report that 70% are poor (APROMECI, 2016). In the state of Oaxaca, 70.4% of the population is poor (CONEVAL, 2017). Uneven social contentions between ‘centre’ and ‘periphery’ underdeveloped groups rest on access to basic human rights (e.g., health, education, food, water, freedom) and income inequalities (OECD, 2015). According to the Organization for Economic Co-operation and Development (OECD, 2015), in Mexico, the incomes of the richest are more than 25

times those of the poorest (OECD, 2015). Internal colonialism serves as a theoretical framework for examining social unrest in the Global South, focusing specifically on the conflict between wind energy investments and indigenous people's place-based attachments to their geographical landscapes (e.g., Cass and Walker, 2009) as related to environmental justice, a concept that is presented in the following section.

Environmental Justice

Justice is a combination of ensuring and recognising the basic equal worth of all people, referred to as the basic principle of human rights, together with a commitment to the "distribution of good and bad things" (Campbell, 2010). An ethical-normative approach to energy justice holds that energy justice "aims to provide all individuals, across all areas, with safe, affordable and sustainable energy" (McCauley et al., 2013: 1). I interpret this definition as stating that all individuals are equal (United Nations, 1948), in the sense of all ethnic groups belonging to a single geographical community based on a collective morality, referred to as energy for all (McCauley et al., 2013).

Environmental Justice has been defined as the fair treatment and meaningful involvement of all people – regardless of race, colour, national origin or income – in the development, implementation and enforcement of environmental policies (Bullard and Johnson, 2002). Environmental justice calls for the meaningful involvement of different social groups, which implies procedural questions about the ability of different social groups to engage in and exert influence over environmental decision-making (Agyeman, 2014). This vision is presented in Goal 7 of the Sustainable Development Goals (SDGs), which states: Ensure access to affordable, reliable, sustainable and modern energy for all (United Nations, 2015).

The first National People of Color Environmental Leadership conference in 1991 adopted a manifesto that defined environmental justice in 17 clauses (Environmental Justice/Environmental Racism, 1991). I highlight the following:

- Environmental Justice affirms the sacredness of Mother Earth, ecological unity and the interdependence of all species, and the right to be free from ecological destruction.
- Environmental Justice mandates the right to ethical, balanced and responsible uses of land and renewable resources in the interest of a sustainable planet for humans and other living things.
- Environmental Justice demands the right to participate as equal partners at every level of decision-making, including needs assessment, planning, implementation, enforcement and evaluation.

The above clauses are derived in response to communities, including 'periphery' groups such as indigenous people, who lack empowerment and access to energy resources. Respect for indigenous people's perceptions of the protection of Mother Earth appear to be at the centre of disputes in environmental (in)justice. Sikor and Newell (2014: 152) echo Martinez-Alier et al. (2016), stating that poor people's claims "are not only about the distribution of environmental goods and bads but also about whose visions

of the environment are recognised, who participates in environmental decision-making and democracy, and what kinds of values come to matter – all of which are central matters of justice” (Sikor and Newell, 2014: 152). The debate about environmental justice has become more significant because of “observations that poorer and more deprived communities are often excluded from exerting influence in the decision-making processes that affect them and that they are disproportionately affected by negative social and environmental outcomes” (Gouldson, 2006: 402).

In the Global South, efforts at environmental justice are unclear regarding how democratic governance that integrates communities “to participate as equal partners at every level of decision-making” are instrumented in renewable energy investments (e.g., Environmental Justice/Environmental Racism, 1991). A critical issue in these ethical dilemmas is how to evolve from a situation of political and business exclusion to the integration of indigenous communities in the process of the planning and development of renewable energy projects (Zografos and Martinez-Alier, 2009). A key foundation of such ethical dilemmas is the question of why indigenous communities were “devalued” (Schlosberg, 2013) and excluded in the first place, which is a pattern of internal colonialism (Casanova, 1965). Thus, environmental justice is about reversing past colonial repression, oppression and practices that have violated Mother Earth, all of which place burdens on indigenous people in postcolonial countries. Thus, environmental justice cannot be achieved unless the environmental movement itself becomes democratic. Thus, an energy justice movement (Martinez-Alier et al., 2016) has emerged in Global South, seeking to create opportunities to destabilize power relations – ‘centre’ vs. ‘periphery’ – reverse histories of dispossession, marginalization and social and environmental (in)justice, and “replac[e] monopolized fossil fuel energy systems with democratic and renewable structures” (Burke and Stephens, 2017: 36).

Territory is a particular component of social justice in the Global South. The concept of territory encompasses the history of place, which is the shared sense of meaning that is connected to history, culture, landscape and social life in a specific place (Escobar, 2008: 62). A lack of knowledge of territory may stem from improperly applying the FPIC principle (Colchester and Ferrari, 2007). The FPIC principle is based on the International Labor Organization’s (ILO’s) Convention on Indigenous and Tribal Peoples in Independent Countries – 169/1989 (International Labour Organization, 2016). The ILO 169 Convention was ratified by Mexico on September 5, 1990. The FPIC principle lays the groundwork for fair compensation to local communities as part of the land transfer process in, for example, sustainable energy development projects. The relation between the FPIC principle and human rights is related to Principle 13 of the United Nations’ Guiding Principles on Business and Human Rights (UNGPs): *Principle 13: The responsibility to respect human rights requires that business enterprises: a) Avoid causing or contributing to adverse human rights..., b) Seek to prevent or mitigate adverse human rights impacts that are directly linked to their operations...* (United Nations, 2011: 14). The FPIC principle is expected to be reached through political freedom, freedom of speech and transparency between local communities and MNCs. This expectation suggests that to ensure business success, businesses should be proactive: “respect for applicable legislation, and for collective agreements between social partners, is a prerequisite for meeting that responsibility” (The European Commission, 2011: 6).

The challenge that MNCs face when trying to operate in contexts with persistent corruption, the lack of rule of law and the presence of organized crime and violence suggests that it is the responsibility of 'centre' groups such as MNCs to build healthy institutional settings in order to create legitimacy and respect for different visions of environmental justice. Thus, the objective of this research is to discuss the environmental (in)justices and human rights abuses that are neglected by 'centre' elite groups, which then lead to uneven development in Mexico.

Methods

In 2013, newspapers in Mexico and Denmark presented the Zapotecas and Ikoojts in Mexico protesting at the Danish Embassy and the headquarters of the Danish wind firm, Vestas, against the *Mareñas Renovables* wind energy project at the Isthmus of Tehuantepec. This study (2013-2018) is based on archival data, in-depth interviews, focus groups and participatory observations. I developed 55 conversations with indigenous people to understand the traditions, culture, struggles and resilience of the Zapotecas and Ikoojts. Fifteen participant observations occurred at assemblies and weekly meetings at different locations in the Isthmus of Tehuantepec. Twenty-five in-depth interviews were performed with indigenous people, as well as governmental, MNC, and NGO representatives. Indigenous people and governmental officials requested to not be recorded, but they agreed that I could take notes. In-depth interviews lasted an average of 80 minutes and consisted of questions to identify Mexico's national plan for wind energy and the MNCs' strategies for investing in wind farm projects, as well as indigenous people's positions on these investments in the geographical and cultural landscapes and human rights issues in Mexico. I triangulated the empirical materials with previous research on the Isthmus of Tehuantepec's indigenous people (e.g., Campbell et al., 1993; Juárez-Hernández and León, 2014; Quintana, 2015; Rubin, 1994; 2004). Appendix A presents a detailed account of the methodology developed. The following section presents the findings, which triangulate the empirical material with previous research and reports on wind energy investment in Oaxaca. The section begins with a presentation of the research context.

Framing the Isthmus of Tehuantepec's Neoliberal Wind Energy Investment Landscape

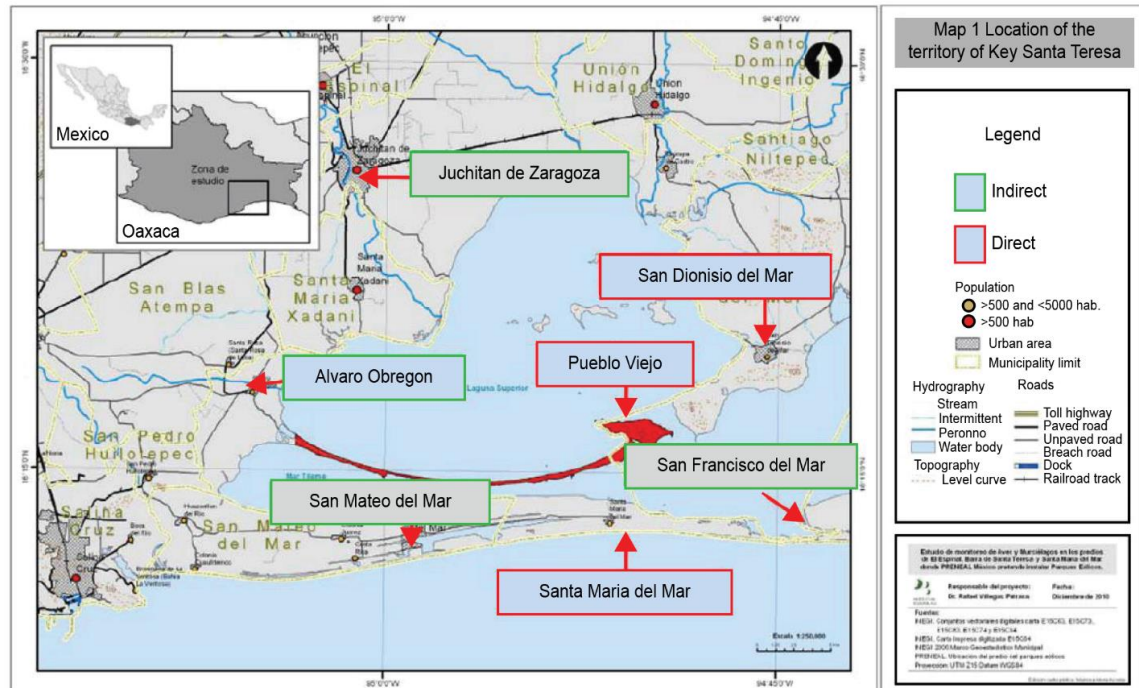
Institutional Evolvement

The Isthmus of Tehuantepec is located on a peninsula of the Atlantic Ocean and the Gulf of Mexico, which makes the landscape a geographical natural corridor for wind from both sides. Given this physical geography, the Isthmus of Tehuantepec has been a geopolitical territory since colonial times, given its potential to shorten the distance between the Atlantic and Pacific Oceans (Martin, 2005). The Isthmus of Tehuantepec's landscape has been "rediscovered" as a result of its proven natural wind resources, which are seen as ideal for building wind energy farms (Elliott et al., 2004).

The Heroic City of Juchitán de Zaragoza (hereafter Juchitán) is the head of the municipality of the Isthmus of Tehuantepec, see Map 1. This adjective, *heroic*,

encompasses the Zapotecas' – which are the local indigenous people – inherit rebelliousness and detestation of subjugation (Matus, 1993).

Map 1: Location of the territory of Key Santa Teresa



Crippa, L. A. (2012). Solicitud de Consulta y Verificación de Observancia Proyecto Eólico Mareña Renovables ME-L1107. Washington. Retrieved March 25, 2013, from <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37602983>

In the 19th century, the Zapotecas' capacity to defend their geographical landscape and cultural landscape (such as their autonomy) via armed rebellion led to their reputation as criminals and barbaric (Rubin, 1996). Zapotecas expelled the French from their geographical landscape in 1888. In the 20th century, after the Mexican revolution (1920), the Zapotecas developed Juchitán and constructed schools, clinics, and roads during the twenty-five years of cacique rule by General Heliodoro Charis (1896-1964). During the ruling years of Charis, the Zapotecas demonstrated their ability to resist the hegemony of the national 'centre' cultural landscape by maintaining their cultural indigenous landscape including their language, festivities such as *Velas*, clothes, and food. In the 1970s, students in Juchitán formed an activist grassroots movement, which became the *Coalición Obrera Campesina Estudiantil del Istmo* (COCEI), to democratically fight against failed economic development in the Isthmus of Tehuantepec that resulted in widespread poverty and political corruption (Rubin, 1996). A former member of the COCEI and a current human rights defender in Juchitán commented on one of these mobilizations: “*I was in secondary school when, together with my classmates, we marched to Juchitán's town-hall to demand public transportation to the school*”. (Interview)

In the 1970s and 1980s, during a period in the Zapotecas' history that coexisted with the Oaxaca state and the rest of Mexico, COCEI presented its mobilization for Zapotec culture as a discourse for a poor people's movement and ethnicity, which were collectively defined as a multi-class pueblo (Rubin, 1996). COCEI also fought – with considerable success – for rural land and agricultural opportunities, urban wages and benefits, and municipal sovereignty, and the group overcame violent repression in the process (interviews). In the 1980s, the Zapotecas surprised Mexicans and foreigners, as Juchitán democratically won an election with a Socialist Party, which sent a strong message that opposed the technocratic, market-oriented *Partido Revolucionario Institucional* (PRI) party that had uninterruptedly ruled Mexico's local municipalities and state governments between 1929 and 1989 and the federal government from 1929 through 2000.

The neoliberal development model was legitimized by the technocratic market-oriented Mexican president, Carlos Salinas de Gortari (1988-1994), of the PRI party (Institutional Revolutionary Party (Spanish: Partido Revolucionario Institucional, PRI)). The neoliberal development model was implemented in Mexico through changes in the Mexican constitution and laws. President Salinas de Gortari pushed through reform of Article 27 of the Mexican Constitution, which ended the programme of land redistribution and enabled the sale and purchase of previously inalienable communal landholdings, known as *ejidos* (*ejidos* were parcels of land given to landless peasants). In Oaxaca, this land-tenure regime existed alongside communal landholdings, which indigenous communities were given title to by the Spanish Crown (Martin, 2005: 208). I will address the institutional evolution in relation to the Mexican energy sector. For a comprehensive account of neoliberalism in Mexico, see Martin (2005).

In the 1990s, the energy sector, including electricity commercialization and distribution, constitutionally remained exclusive to the Mexican government. However, in 1992, a constitutional reform changed the law to public service electricity, *Ley del Servicio Público de Energía Eléctrica* (LSPEE), which allows private sector participation in generating electricity for consumption and/or sale to third parties.

In the mid-1990s, Mexican President Ernesto Zedillo (1994-2000) launched a mega-project for the “development” of the Isthmus of Tehuantepec through investments in infrastructure (new roads, rail, canals and airports) and industry (Reyes, 2011). The former Mexican President Vicente Fox (2000-2006) incorporated Mexico's “development” into a broader framework called *Plan Puebla Panama*, announced in 2001. The *Plan Puebla Panama* seeks to speed up development and integration among Central America's nations and Mexico's southern and south-eastern states through sustainable and participatory projects (Martin, 2005). The development plan was intended to enable the construction of large-scale telecommunications, energy, and transportation networks reaching from the Mexican state of Puebla to the country of Panama (IADB, 2001). The *Plan Puebla Panama* has financial support from multilateral lending agencies such as the IADB for the purpose of investing in wind energy farms (IADB, 2011). The state of Oaxaca is part of the *Plan Puebla Panama* mega-project to open up the state for foreign investment as a means to address what former President Fox called the abandoned and underdeveloped Oaxaca state (Aznarez, 2001; Reyes, 2011).

In the march towards neoliberal development policies in Mexico, under the administration of the former president, Felipe Calderon (2006-2012), Mexico joined the Clean Technology Fund (CTF) investment plan. The CTF is a 'business plan' agreed upon and owned by the Government of Mexico for the International Bank for Reconstruction and Development (IBRD), the IADB and the International Finance Corporation (IFC); the goal is to provide support for the low-carbon objectives contained in Mexico's 2007-2012 national development plan, its national climate change strategy and special climate change programme (The World Bank, 2009). In 2012, Mr. Calderón, accompanied by Spanish executives, inaugurated the wind parks La Venta I, II and III, which were projects developed by Iberdrola (Presidencia de la República, 2012).

In 2013, Mexican President Enrique Peña Nieto (2012-2018) launched constitutional energy reform. The energy reform aims at increasing renewable energies and facilitating private investment in energy in Mexico. In 2014, a package of laws that governed Mexico's energy sector for private investors came into force. Under the new laws, project developers must inform both the property owners and the Mexican Energy Secretary of their proposed plans for energy development. Then, developers can negotiate with the landowner to determine whether the land will be bought, leased, or subject to temporary use and how much the owner will receive in exchange (Terwindt and Schliemann, 2017).

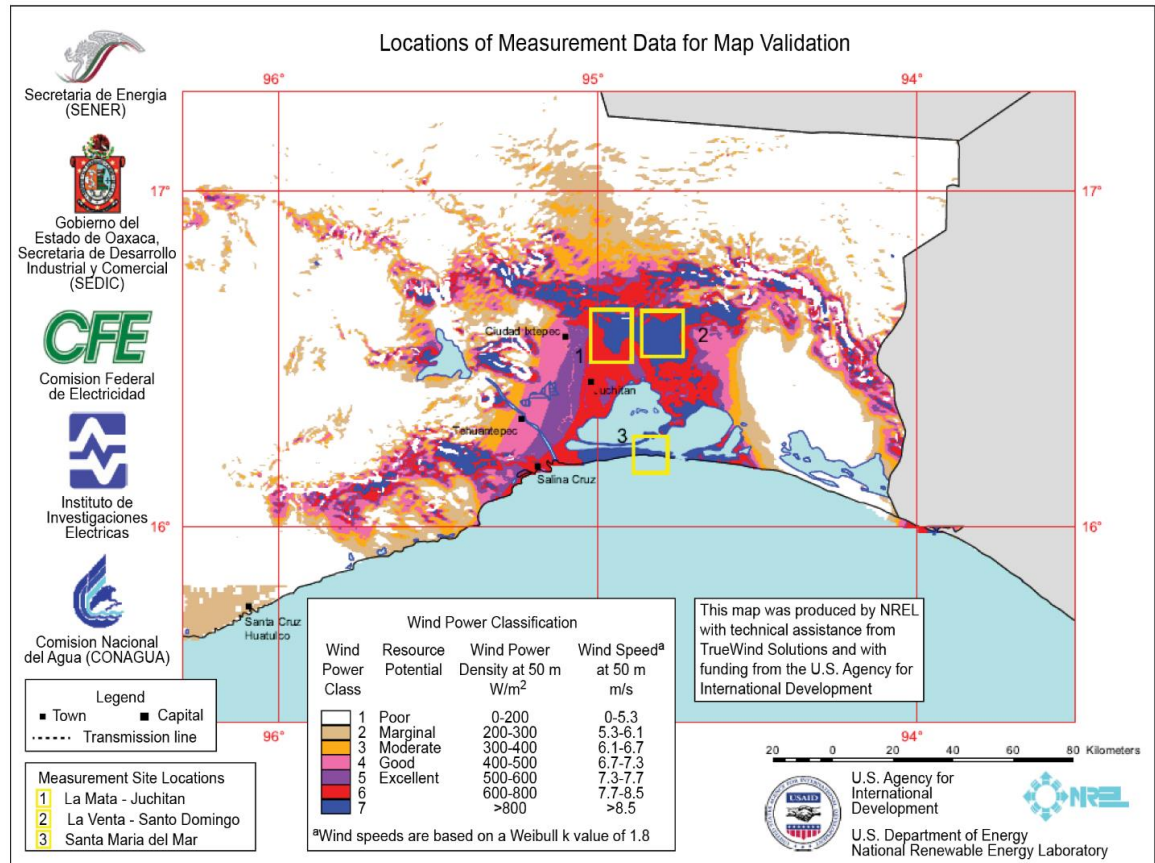
In the 21st century, indigenous people at the Isthmus of Tehuantepec continue to contest the neoliberal policies that are implemented in Mexico. Although different human rights abuses have been registered and there have been protests for structural reforms in Mexico, the march towards neoliberalism continues. The neoliberal policies implemented in Mexico signified that the government was not the motivator for development and investment; rather, it appeared that the government's role was to create the conditions for private, large-scale investments (e.g., Aitken, 1996; Özen and Özen, 2017). The following section presents wind energy investments at the Isthmus of Tehuantepec.

Wind Energy Farms at the Isthmus of Tehuantepec

The geographical location of the Isthmus of Tehuantepec has attracted private wind energy investors who seek to exploit the area's proven wind resources. According to the Wind Resource Map of Oaxaca (Elliott et al., 2004), the area of San Mateo del Mar in the Isthmus of Tehuantepec, where the Ikootjs indigenous people live, has wind resource potential that is among one of the world's best. This geographical location is estimated to have Class 7+ wind resources, which are measured at > 800 Wind power Density at 50 m W/m², see map 2.

MNCs have constructed wind farms in the Isthmus of Tehuantepec since the 1990s primarily under the self-supply model—energy that is exclusively produced for customers. The wind farms were developed in the Isthmus of Tehuantepec as part of the United Nations (UN) Clean Development Mechanism (UNFCCC, 2016). This mechanism allows MNCs to compensate for their damage to the environment by purchasing carbon credits (McAfee and Shapiro, 2010).

Map 2: Locations of Measurement Data for Map Validation



Elliott, D., Schwartz, M., Scott, G., Haymes, S., Heimiller, D., & George, R. (2003). "Wind Energy Resource Atlas of Oaxaca". Golden, CO.; <https://doi.org/10.2172/15004364>; Figure taken from Page 45

Mareña Renovables was the name of a wind energy project started in 2004 by the Spanish renewable energy developer, Preneal (McGovern, 2012). It was planned that the electrical power produced by the wind power project would be purchased (with a 20-year power-purchasing agreement) by the beer producer Cuauhtémoc Moctezuma, which is an operating company of Heineken NV and a subsidiary of FEMSA (FEMSA, 2011). On August 29, 2012, the IADB announced the approval of a loan for 75 million USD to fund the project (IADB, 2011). FEMSA, through wind energy projects, has a primary role in proving the business case for an innovative multi-stakeholder investment scheme for sustainable green energy (FEMSA, 2017). An executive from the Dutch pension fund PGGM explained in an interview that PGGM's "adventure," as the executive described the *Mareña Renovables* project, was motivated to invest pension money in green energy projects. One of the challenges in wind energy investment is the consultation process with local communities.

Environmental (in)Justice

The focus groups developed in 2013 indicate that opposition to the *Mareñas Renovables* project was focused on concerns about ecological destruction. Zapotecs and Ikoots argued that installing 132 V90-3.0 MW turbines on the *Barra* (Key) would have an adverse “environmental impact” (conversations). The *Barra* (Key) is located between *Laguna Superior* (Upper Lagoon), Municipality of San Dionisio del Mar and *Laguna Inferior* (Lower Lagoon), Municipality of San Mateo del Mar. Fishermen explained the following:

“We live by catching shrimps at *Laguna Inferior* [Lower Lagoon], the shrimps eat from the leaves that fall from the trees at the *Barra* [Key], if they [wind firm] install these *ventiladores* [wind turbines], there will be no more trees...and so no more shrimps...(Fishermen at San Mateo del Mar)

According to conversations with local residents, in certain circumstances, constructing wind energy parks might destroy sacred sites. In Mexico, as in many cultures, death is a cultural festivity that has a specific connotation for cemeteries, which are sacred for the Zapotecas and Ikoojts (Field notes). The webpage of wind energy investors in Oaxaca states the following:

“...the installation of wind power turbines in the park would not affect the daily activities of the local communities, such as agriculture and fishing”.
(Secondary Material, Webpages)

In 2013, there were disputes among indigenous people, *Mareñas Renovables* representatives and government officials when engineers from the firm Vestas, responsible for building the *Mareñas Renovables* project, planned to drive trucks from the town of Alvaro Obregon to *Barra* Key. The firm Vestas attempted to initiate its work to install 102 wind turbines on the key and 30 wind turbines in Santa María del Mar, which is located in San Mateo del Mar (conversations in Juchitán and San Mateo del Mar). Indigenous people explained the reason for their dispute:

“Wind farms have contaminated lagoons with fuel waste, which has affected fishing. It is clear that large foreign companies, such as Iberdrola or Vestas Wind Systems, are those that have earned millions in profits at the expense of our land” (Conversations – Representative of the Communal Assembly at Juchitán).

Given the social unrest and the cancellation of the *Mareñas Renovables* project by a judge of the state of Oaxaca in 2013, the *Mareñas Renovables* project was renamed *Eólica del Sur* in 2015. However, the Dutch pension fund PGGM decided to cancel its participation in the renamed *Eólica del Sur* project. An executive from PGGM commented:

“PGGM trusted that all stakeholders in the project followed standard procedures for constructing the wind energy farm. However, this project is

too controversial...so we decided to leave” (conversation with a PGGM executive in 2017).

In a follow-up focus group developed in 2015, indigenous communities present more sophisticated arguments in relation to the cost of development and environmental (in)justice:

“The biggest environmental impact of wind power is evident to the naked eye. As wind farms grow, a country needs to pay more attention to the landscape and to environmental, historical, cultural and tourist-related impacts”. (Conversations with indigenous people at San Mateo del Mar).

Although the Zapotecas and Ikoojts argued for different negative impacts in relation to the wind parks, they had no scientific evidence to support their arguments. I interviewed an engineer in Denmark who worked on wind energy projects, who explained that the wind turbine itself does not damage the environment. The engineer explained that there is a risk of land ionizing radiation in relation to the transmission lines from the wind turbine to the electrical substation. This risk could be technical due to the quality of material and maintenance or external factors (Interview). For example, land ionizing radiation could register due to natural disasters. On 7 September 2017, the strongest earthquake to hit Mexico in over 100 years (8.2 in magnitude) destroyed thousands of buildings, specifically in the city of Juchitán. According to newspaper reports, 21 wind parks, which have a total of 1,186 wind turbines in the Isthmus of Tehuantepec, were affected by the earthquake, and each park has an electrical substation (Rasgado and Hernández, 2017). The CFE has three electrical substations in which all wind parks in the Isthmus of Tehuantepec provide electricity for firms and private users. There is not an official report about the consequences of the earthquake on the potential for land ionizing radiation in the Isthmus of Tehuantepec in relation to the wind parks in the region. The CFE only reported that the electrical substation Juchitán II was operating normally after the earthquake (Quadratín, 2017). An Ikoojts commented on the different reports in the aftermath of the earthquake as follows:

“...we never will read or hear the reality of the negative impacts of the earthquakes on our land. The government and firms always hide information, as they have done when assigning wind park construction to firms without our consultation...” (Fisherman in San Mateo del Mar)

I will now focus on human rights stemming derived from wind energy investments on the Isthmus of Tehuantepec.

Human Rights Abuses

For business and human rights, in the “Global Agreement” between the European Union (EU) and Mexico, which took effect in 2000, Article 39 states: “The Parties may conduct joint projects in order to strengthen cooperation between their respective electoral bodies...” and, the incise C establishes: “the promotion of human rights and democratic principles” (European Union, 2000). However, it was not until 2015 that the Mexican government publicly committed to developing a national programme for business and human rights. In April 2016, the Danish Institute for Human Rights signed a Memorandum of Understanding (MoU) with Mexico to develop the country’s National Action Plan (NAP) on Business and Human Rights (The Danish Institute for Human Rights, 2016). In September 2016, Mexico invited the UN Working Group on Business and Human Rights to conduct an assessment of Mexico. After the visit (September 2016), the group made the following conclusion:

“Although the Mexican government has committed to moving forward on the human rights and business agenda, businesses continue to exhibit worrisome behaviour”. (Interview – Member of the Working Group on HR at UN)

The President and Chief Executive Office at the European green energy firm in 2014 declared:

“...[our organization] expects its business partners to respect human rights, and will take measures to promote responsible practices by its business partners in relation to our organization value chain. Our firm will identify and consult with stakeholders whose human rights might be impacted by our organization’s operations, including engaging in dialogue with local communities to identify and address any human rights risks and opportunities of our organization’s operations” (European wind energy firm’s internal document).

The above statement illustrates the compromise made by a European firm in relation to the basic principles of human rights. In 2008, the EU and Mexico replaced the “Global Agreement” with a new Global Agreement. The new Global Agreement presents the basis for the EU’s future relationship with Mexico. In it, the EU and Mexico agree to cooperate on issues such as climate change and human rights, and work together on issues such as combating poverty or researching new medicines.

“The trade agreement is a part of the wider new Global Agreement between the EU and Mexico, which will strengthen cooperation and the regular high-level meetings between Mexico and the EU in the areas of human rights, security and justice” (European Commission, 2018).

However, human rights abuses continue to mark wind energy projects in the Isthmus of Tehuantepec. For example, Héctor Regalado Jiménez, a member of the Asamblea Popular del Pueblo Juchiteco (APPJ), was assassinated in 2013 in relation to

opposing the construction of a wind park, Bii Hioxho, by the Spanish firm, Gas Natural Fenosa (FIDH and OMCT, 2014).

“On 21 July 2013, hitmen working for the Spanish company Gas Natural Fenosa attacked, with gunfire, members of the Popular Assembly of the People of Juchiteco (APPJ), leaving fisherman Héctor Regalado Jiménez with six bullet wounds. Regalado Jiménez died from that attack on 1 August, according to a statement from the APPJ” (Blog SIPAZ, 2013; Kaos, 2013).

According to the *Centro Mexicano de Derecho Ambiental, A.C.* (CEMDA), between July 2015 and July 2016, 35 attacks have been registered as threats against human rights defenders at mega-projects in Oaxaca. For the wind energy project, there were eight human rights violations in 2015; CEMDA registered another assassination in relation to wind parks in the Isthmus of Tehuantepec, and four were reported to CEMDA in June 2016 (Hernández et al., 2017; Presbítero et al., 2015).

Zapotec and Ikoots communities have witnessed disputes over (uso y costumbres) customary rights, faced threats and physical violence, faced death threats in person and by phone, had guns fired in front of their homes, and experienced attempted kidnappings and assassinations related to wind energy investments (Dunlap, 2018; interviews).

The UN Working Group on Business and Human Rights conducted an assessment of Mexico in 2016 and concluded the following:

“Although the Mexican government has committed to moving forward on the human rights and business agenda, businesses continue to exhibit worrisome behaviour” (Interview – member of the UN Working Group on Rights).

I discussed the above statement with Mr. Dante Pesce, member of the UN Working Group on Human Rights, and he commented:

“...it is the cost of development. [Mexican] society and government officials seem to live on different planets – in particular, the political élites, they [élite groups] do not have anything in common with indigenous people” (Interview – member of the UN Working Group on Human Rights).

This statement reflects the different understandings of the “élite groups” in relation to indigenous people, as reflected in their different visions of environmental justice (e.g., Sikor and Newell, 2014).

Next, I discuss the findings in relation to internal colonialism and environmental justice.

Discussion

Over the years, Mexico's neoliberal development reforms appear to have emphasized the normative assumption of the value of the capitalist free market (O'Toole, 2003). Neoliberalism has been implemented in Mexico through constitutional changes, new laws, and the signing of international conventions. Mexico's neoliberal development model has underpinned a "radical reconstruction of Mexican economy and society" (Martin, 2005: 204), which is presented in this article, particularly in the transformation of the Isthmus of Tehuantepec's economy and geographical and cultural landscapes through wind energy farms.

Technocrat Mexican's presidents, for example, Carlos de Gortari, implemented intuitive neoliberal policies to upgrade Mexico as a developed country and assume undevelopment and poverty to be technical problems. Mexico's energy reform (published in 2013), which aimed to place Mexico at the forefront in, for example, wind energy and to fight against climate change (UNFCCC, 2015), was granted on the assumption of the private sector's supremacy over state-owned investments (Corvellec, 2007). It seems intuitive for 'centre' elite groups to assume that 'periphery' groups such as indigenous people would support wind investments that, unlike fossil fuel investments, "theoretically" do not involve environmental (in)justices, such as in the mining industry (Costanza, 2016). However, a non-intuitive outcome is that the environmental vision of indigenous people's space-based attachments to geographical and cultural landscapes clashes with neoliberalism in the economy in terms of the neoliberal approach to wind energy farms. The findings support the view that the supremacy of wind turbine technology and the notion of resolving the technical problems of "development" in the Isthmus of Tehuantepec within the *Plan Puebla Panama* mega-project 1) threaten local cultural landscapes, 2) entail environmental (in)justices, 4) physically transform the local economy and geography, and 5) incite human rights abuses. These outcomes suggest that reaching the SDGs, particularly Goal 7, through wind energy investments, is naïve given the failure to properly consider the fundamental place-based attachments to the environmental and geographical and cultural landscape visions of indigenous communities (Escobar, 2008; Martin, 2005; Nolte, 2016).

The history of the struggle of the indigenous people of the Isthmus of Tehuantepec to bring "development" to their region represents one example of the sophisticated political, cultural, economic, and environmental visions as well as place-based attachments that contrast with Mexico's neoliberal development model. The Zapotecas' and Ikoojts' visions of development are based on their consciousness of and pride in their history of constant fighting to bring to their communities basic access to education and respect for their human right of self-determination. However, the wind energy farms built at the Isthmus of Tehuantepec visually present how neoliberal development projects become materialized, which alters the geographical spaces of indigenous people, and confronts them with environmental (in)justices and human rights abuses.

Zapotecas and Ikoojts, on the one hand, and governmental and MNCs, on the other, have adopted different understandings of regional development through wind

energy investments. I argue that the 'centre' elite groups are attempting to implement their business models at the Isthmus of Tehuantepec, and in doing so, 'centre' groups seem to overlook the basic principles of environmental justice and human rights. These conflicting views pose a dilemma for wind energy private investors aiming to foster positive community relations (Aitken, 2010).

Indigenous communities' continuous pattern of subordination in a system of inequality (Pinderhughes, 2010) is understood in this article as internal colonialism (Casanova, 1965; Pinderhughes, 2010). Equal access to renewable energy for all, as well as equal recognition and participation in the use of geographical spaces and wind energy resources (Cass and Walker, 2009), appear to be at the centre of environmental (in)justices related to neoliberal wind energy investments on the Isthmus of Tehuantepec. However, rights struggles tend to be difficult when the claim threatens major economic interests (Chenoweth et al., 2017). Scholars and nongovernmental organizations (NGOs) claim that governments implementing neoliberal development policies overlook human rights abuses perpetrated by foreign investors because FDI satisfies neoliberal policies (McAfee and Shapiro, 2010; Terwindt and Schliemann, 2017).

Neoliberal wind energy investments built in Mexico have done little to alleviate the persistent inequality and uneven development of the Zapotecas and Ikoojts, understood in this article as internal colonialism (Casanova, 1965). In the state of Oaxaca, 5% of the population lacks electricity (INEGI, 2015), and 70% of the indigenous people at the Isthmus of Tehuantepec are poor (CONEVAL, 2017). The communities visited, such as San Mateo del Mar and Huamichil, do not have access to purified water, public drains, and sanitation. Élite 'centre' groups portray investments in wind energy as the development of sustainable energy, which aims to reduce carbon emissions. An aspirational talk (Christensen et al., 2013) connected to members of the 'centre' group, such as Mr. Calderón Hinojosa, promoted Mexico as an ideal destination for green energy investments (e.g., McAfee and Shapiro, 2010). However, elite 'centre' groups failed to disseminate – in a timely manner – evidence on the impact of wind energy farms to indigenous people who are directly affected by Mexico's energy reform and rules of law that affect the struggle for human rights advocacy. Where the rule of law is weak, as reflected through corruption or a lack of accountability in security forces or judicial sectors, the protection of human rights almost universally suffers (Haugen and Boutros, 2010).

The Zapotecas and Ikoojts have been portrayed as a "rebel" 'periphery' group of people in Mexico in their response to wind energy, and other development investments continue to market the history of the Zapotecas and Ikoojts with this tone. Dante Pesce (ONUDH, 2016) stated in this regard: "*[Mexican] society and Government officials seem to live in a different planet – in particular the political Élites, they [Élite groups] do not have anything in common with indigenous people*". This statement reflects the different understandings of so-called 'centre' "civilized" people (whites) and 'periphery' "natural" people (Indians) in the evolvment of internal colonialism (Casanova, 1965). Race and culture are legacies of the Spanish domination that emphasized greater purity, expressed in religion as well as the purity of blood: the conflicts between *Gente de razón* (civilized

people –whites) and *naturales* (natural people –Indians) (Aitken, 1996) are replicated in wind energy investments at the Isthmus of Tehuantepec.

The empirical material indicates that indigenous people in the Isthmus of Tehuantepec fight against their ‘centre’ local, state and national government officials, who fail to implement current law and regulations in Mexico (e.g., Crippa, 2012). At the same time, the ‘centre’ MNCs involved in the conflict have other resources with which they could “fight” indigenous people. For example, MNCs can protect their investments through contracts with Mexican officials. In addition, MNCs have access to tools, procedures, and even coaching from external stakeholders such as the UN, the IDB, or the ILO to assist in the implementation of such principles as ILO Convention 169, particularly with regard to consultations with and consent of local communities. One might wonder why MNCs do not utilize these tools. It seems that these complexities tend to be more evident in wind energy projects. MNCs that have been invited by the Mexican federal government to invest in Mexico should exercise caution in, for example, due diligence exercises when engaging with local actors in institutional settings that challenge the rule of law.

The findings and discussion presented could help develop an agenda with a development orientation in which the ‘centre’ group function with the public consent of the ‘periphery’ group. MNCs are expected to constructively serve the needs of society (CED, 1971). However, based on the results presented, it could be argued that MNCs could function as a platform not only for job creation but also to remedy and reinstall basic human rights principles aimed at sustainable development. Surprisingly, the Zapotecas and Ikoojts are fighting to reinstall the basic principles in relation to their geographical and cultural landscapes. Remediation could also be a strategy developed by micro-level actors – indigenous people. ‘Periphery’ groups together with MNCs could function as key actors in host countries without governmental capacity to ‘protect, respect and remedy’ human rights and environmental justice.

Although the research setting presents unique particularities in the Isthmus of Tehuantepec, the Zapotecas’ and Ikoojts’ struggles echo the silent voices of developed countries. Silent voices are people who feel left behind due to neoliberalism, experience an increase in inequalities, and start to mobilize and trigger other political consequences around the world.

Conclusion

Wind energy investments have also provoked internal colonialism in the Isthmus of Tehuantepec. It is clear that governments from emerging and developed countries have made efforts to integrate the Universal Declaration of Human Rights (UDHR) (United Nations, 1948) into their internal and foreign policy agendas. However, ‘periphery’ groups in different regions of the world demand protection of their basic human rights. This demand continues to characterize economic and space conflicts (Martin, 2005) that directly and indirectly include business investments. Future research could examine how ‘centre’ groups manipulate national laws and international conventions to gain investments in wind energy and development projects. This study empirically presents

how a government can be a strong connection that facilitates MNCs' FDI while simultaneously failing to protect local people's basic human rights.

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