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Wind Energy Development in Mexico: An Authoritarian Populist Development Project?

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Narratives favouring climate change mitigation and a transition towards 'green' energies are reconfiguring rural areas in the Global South using a double 'win-win' discourse: creating a global good while bringing new investments, jobs, growth and development to socially deprived regions. Renewable energies are assumed to represent a path away from the hard choices based on fossil fuels, towards a soft and sustainable path that would be flexible, resilient, benign and fraught with opportunities for development (Raman, 2013, p. 172). For the Mexican government wind energy expansion brings different sorts of opportunities to the country: to reduce carbon emissions without compromising economic growth, to contribute to climate change mitigation, to develop local capabilities, to foster technological development, amongst others (Szeman & Boyer, 2017, p. 277). It is in this context that Mexico has passed one of the most ambitious frameworks with regards to Renewable Energies development in the world. The Law for the Utilisation of Renewable Energies approved in 2008, on the one hand, establishes that in every renewable energy project that is above 2.5 MW should seek local participation and should foster social development in the region (Diputados, 2008). The General Law of Climate Change passed in 2012, on the other hand, set up the goal for the year of 2024 to produce at least 35 percent of the total electricity by clean energy sources including sources such as nuclear, coal and gas with Carbon Capture Storage Schemes (Diputados, 2012). It is important to mention, however, that these narratives seeking to come up with popular appeals to the interests of the poor and the vulnerable populations through a transition towards green energies seem to advance the interests of foreign and domestic capitals adding to the heterogeneity and complexity behind authoritarian populism (Scoones et al., 2017).

This tension has to be analysed in relation to the energy reform approved in 2013. Until this date, electricity was classified as a service to be provided by the state and allowing private generation under specific schemes – self-generation, cogeneration and independent producer – to be sold to the state-owned enterprise (Huesca-Pérez, Sheinbaum-Pardo, & Köppel, 2016). The majority of wind energy projects, under this framework, are large investments, funded by international organisations, acting as self-generation societies – scheme where private actors and public-private partners set up an agreement for generation and commercialisation of electricity amongst partners, paying only a fee to the state-owned utility for the transmission of energy (Niño, Mendivil, Velasco, & García, 2015, p. 26). The energy reform approved in 2013 under Peña Nieto's office modifies this framework by establishing that only transmission and distribution of energy are public services to be provided by the State (G. of Mexico, 2013). That is to say that the electricity system is transformed, from a completely state-owned utility, into a free and non-discriminatory market where private entities can now participate in electrical generation spaces (Baker, 2016). One of the novelties behind this new framework is that within secondary laws, notably the Law for the Electric Industry, it is now required a Social Impact Assessment for electricity projects, as well as an indigenous consultation within international standards – ILO 169 Indigenous and Tribal Peoples Convention (P. of Mexico, 2013).

Both the scheme before and after the reform has promoted an expansion of wind energy projects on a massive scale in Mexico, especially in the Isthmus, since 1994 -when the first wind park in Latin America was built (Juárez-Hernández & León, 2014). Nowadays, the outlook is so positive that investments in wind energy are expected to attract between 13 to 15 billion dollars in the period between 2016 and 2018 (GWEC, 2016). Also, it is expected that energy capacity generation will double up by 2022 and in some places of the country like Yucatán, for instance, wind energy is expected to reach Oaxaca's capacity – process that took more than 2 decades – in less than 2 years (AMDEE & PWC, 2014). There are, likewise, further incentives for private actors to invest in

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renewable energy development in the country, which positions Mexico as the 6th most attractive economy for investments in renewable energies (Huesca-Pérez et al., 2016; Staff, 2018).

Wind energy development is presented as a solution to energy and climate crisis that can benefit poor people and socially deprived regions by creating employment opportunities and bolstering social and economic development (Eléctrico, 2012; O. Rodríguez, 2017). It is important, however, to pay attention to the asymmetric ways in which the benefits of climate change and renewable energies development are being distributed in Mexico. All of the wind energy projects implemented before the energy reform, for instance, did not carry a prior consultation process according to international standards. The permits were just granted at the federal level and the enterprises were just in charge of implementing the project. This generated two phenomena in the region. On the one hand, the idea that “social responsibility” was more related to agreements between partners than to an actual obligation imposed by the state behind wind energy development. As one of my informants argues: “in the case of Eurus wind park Mexican Cement, our partner, obliged us to have a formal social area focused in the development of this project” (Laura, personal interview, Feb 14, 2018). On the other hand, it started articulating opposition on the basis that these projects were alien to the region and imposed upon indigenous communities against their will. Mexico, in consequence, faces an inherent tension with regards to wind energy: while wind energy and its growth in emergent markets will play out a salient role in de-carbonisation and development efforts, its prospects and pathways will be made and reshaped by the local politics of contestation.

This paper seeks to understand the current context and the consequences resulting from wind energy in the rural setting in the Isthmus of Tehuantepec. The argument is that the new investments, jobs and growth that supposedly would result from wind energy development authoritarian populist project easily appealed stakeholders in the Isthmus. Yet, the capture of land, wind and livelihoods has provoked asymmetries and social conflicts that result in new exclusions and dispossessions for some people. This paper will explore, in this line, the consequences in the Mexican rural setting of three different analytical moments in wind energy development: the sitting of a project, the expansion of projects in less than 5 years and the long-term projects that have been in the region for over a decade. At the same time, it will seek to explore how the top-down rationale behind these projects has actually generated opening for resistance that seem to be exacerbated by the recent earthquakes that stroke the region last year and by the recent declaration of the Isthmus as a Special Economic Zone in 2018.

Theorising Wind’s Material and Social Life: Why Is Wind Energy Contested in Mexico?

Amongst other elements, the construction of wind as a resource and as a commodity provide insights on the nature of contestation behind wind energy. With regards to the construction of a resource, two elements determine the material life of wind: its relationality and its resistance to enclosure. Wind, on the one hand, only becomes visible and ‘tangible’ through points of contact with other entities (Howe & Boyer, 2015). Moreover, wind also evades enclosures. It is an energy that can be harvested but never appropriated (Howe & Boyer, 2015). Wind as a resource is also affected by social elements. As Tania Li (2014) underscores, resourceness of wind has to be made up not only according to an assemblage of material substances, technologies, discourses and practices; but also according to different actors who may have divergent opinion on what wind is. Whereas for some stakeholders, wind is related to governmental opportunities ranging from development interventions to climatological aspirations; for other people it might be more related to livelihood strategies like fishing, agriculture or cattle raising (Howe, 2014).

In relation to wind as a merchandise, commodification of nature relies on ecological production processes whose subordination to the market can only be partial (Bakker & Bridge, 2006; Prudham, 2009). This is not only because of objective constraints but also because of subjective elements related to the allocation and distribution of the resource. Commodification process, in this sense, inherently depends on particular natures and their materiality (Castree, 2003). Wind commodification is, therefore, unruly, chaotic and heterogeneous. Just as Bakker and Bridge (2006) suggest with water, wind can also be a source of unpredictability, unruliness and resistance to human will.

Wind's life along with its commodification process allows us to shift our viewpoint into a world of objects constituent of social relationships (Bakker & Bridge, 2006) with two conclusions. First, because of its material life, wind is never separable from land. If wind blows across land, then one is supposed to harvest this resource by installing windmills, transmission lines, etc. On the other hand, because of its low energy density, wind requires vast amounts of land to generate the same energy that with fossil fuels would just be extracted from a hole (Smill, 2006). Hence, wind in its social assemblage positions land as the key resource from which value can be extracted (McEwan, 2017). Or to put it in Howe and Boyer's (2015) terms: 'wind energy draw us back to land, its masters and its politics'. Wind energy, thus, connects us to not only the different schemes of landholding that exist in Mexico, but also to the idea that dispossession and exclusion resulting from wind energy projects actually has to do with land and how people relate to it.

Wind Energy Sitting Planned From Above: Creating Openings for Resistance

Eólica del Sur wind farm is, by far, the most contested case in the Isthmus of Tehuantepec. In spite of the enterprise's narrative to promote sustainable development, indigenous' identities and values, accountability and education (Sur, 2014) ; since the first attempt to install windmills in 2006, under the name of Preneal, this project has left a trace of division, conflict and ungovernability in the region. In this section, it is important to analyse the evolution of the project and to observe the local consequences in rural settings of a populist discourse promoting global good through a transition towards renewable energies.

It started in 2006 when under the name of Preneal – a mix of Spanish Capital -, a renewable energy project sought to install 132 windmills with a total capacity of 396 MW on the land of San Dionisio del Mar and Santa María del Mar – locality under the jurisdiction of Juchitán (Casado, 2011; Ramirez, 2015). Because the only way to access by road Santa María del Mar is through San Mateo del Mar, the enterprise asked permission to San Mateo del Mar's Indigenous Assembly in order to move their machinery. However, not only the continuous transportation of machinery was at stake. Most importantly was that Santa María del Mar decided to cede part of their territory to install windmills on land that was sacred and that had been in dispute with San Mateo del Mar for more than a century (Rueda, 2011). When San Mateo's Indigenous Assembly rejected the project proposed by Preneal and Santa María del Mar decided to approve the project, the conflict rapidly escalated between the two towns to the extent that San Mateo del Mar decided to block permanently the access to Santa María del Mar (Ávalos, 2017). Nowadays, after almost 10 years of conflict, the road is permanently blocked and the conflict is still existent between the two towns.

Two years afterwards, under a different name – *Mareña Renovable* – and a mix of Australian and Mexican Capital - the enterprise decided to enter the lagoon area through San Dionisio del Mar (Wind Energy and Electric Vehicle Review, 2011) . Unlike the previous case, the project tried to reach an agreement with local authorities, notably the Municipal President. By offering between 10-12 million pesos to the authority the enterprise sought to obtain the Land Use Change Authorisation ((APIIDTT), 2012). However, when the Municipal President announced the people of San Dionisio he had given the permits to install windmills, the people decided to occupy the Local Government Office and to constitute the Indigenous Assembly of San Dionisio del Mar. The purpose of this indigenous body is to decide in a collective fashion the public affairs of the town. Nowadays, 6 years after these events, San Dionisio is still a divided town: it presents one formal authority formed by elected authorities originated in political parties and one collective authority representing the Indigenous Assembly of San Dionisio del Mar (Manzo, 2017).

enterprise and the government were keener to negotiate benefits for Juchitán. Whereas in this town after a 9-months long process it was agreed that the enterprise would fund a communitarian wind park with 3 windmills, a community centre and would pay 65 million pesos in taxes; in El Espinal -after a 2-weeks long process - the only benefit to be given by the enterprise would be a payment of 15 million pesos (Romo, 2017). Although negotiations exist with both the government and the enterprise to even out the payment, it is important to look out at the tensions and asymmetries created between the two towns.

Eólica del Sur wind park is, thus, an example of how the sitting of a project with a top-down rationale, with full state-backed support and with a populist framing has generated new asymmetries within and between communities in the Isthmus by reviving conflicts related to land, social rights and development. It is possible to argue, in this sense, that communities in the region feel that wind energy projects are alien not only because wherever enterprises try to enter they leave a trace of division, conflict and death while menacing their livelihood strategies (Antonio, personal interview, October 26, 2017), but also because they don't seem to share their idea of the meaning of life. In effect, for one of my informants they would never allow the sitting of a renewable energy project in their territory because they seek to live in harmony with the wind, with the sea and with the community; something called: *Monapakiiy* (Rosa, personal interview, December 12, 2017).

Wind Energy Boom in the Isthmus: Socio-spatial Dispossession

The production, distribution and use of wind energy, in its relationship with land, articulate different accounts of what wind is and how humans by establishing institutions and landscape patterns that modify everyday experiences (Huber, 2015). This can be observed in the Isthmus where, since 2006, 24 wind parks have been installed since 1994 (Juárez-Hernández & León, 2014). Far from bringing development for all; wind energy has brought mechanisms of discourse creation, control and dispossession. These mechanisms articulate forms of access, claim and exclusion to land creating a process of winners and losers through the increase of inequality and the revival of social conflicts (Hall, Hirsch, & Murray, 2011; Peluso & Lund, 2011; Torres Salcido, Torres Contreras, & Jiménez Yáñez, 2016).

To start off, there is a process of statistical picturing where land identified as potentially good for the installation of renewable energies is classified as underutilised (Murray, 2014). Transforming marginal extensions of land into a resource for addressing climatological needs construes land as an apolitical entity overlooking not only social relationships but also livelihood strategies (Rignall, 2015; Yenneti, Day, & Golubchikov, 2016). In the case of Eurus wind park in La Venta even if the polygon chosen by the enterprise was depicted as extremely unproductive by both the Mexican government and Spanish enterprises, it has been reported that farmers were able to produce and process approximately 40,000 tons of sugar cane on a yearly basis (Beas Torres, 2012). A different range of crops could be found in the area such as sorghum, maize and amaranth and even sugarcane. That is to say, rather than being produced in a massive and industrial scale, production was meant for subsistence (Alejandro, personal interview, November 4, 2017).

Secondly, the construction of wind as a resource also implies the creation of land enclosures. As resources are embedded within different commodity chains, their development fosters specific human-environmental relationships with specific socio-material impacts that can be seen in the case of crops (Baka, 2016) or other renewable energy resources (Calvert, 2015). In the town of La Venta, wind infrastructure has progressively engulfed the town since 1994 fostering not only a flux of workers that has certainly changed the life of the town inhabitants but also slowly but surely enhancing a process of rural gentrification (Dunlap, 2016). According to some of my informants, the idea that 'La Venta' is wealthy, because it is surrounded by wind parks, has rocketed up most of the prices, has brought a new influx of workers to the region and has also enhanced more competition amongst those vulnerable populations. When the wind farm construction started people in the town had more jobs and they would sell more food or services. However, when the workers started leaving the town they suddenly found themselves without a job (Carolina, personal interview, February 13, 2018).

Finally, the construction of wind as a resource to be harvested implies the expropriation of land for environmental purposes and a systematic means of shaping environmental governance as a phenomenon deeply embedded in a capitalist rationality. Land appropriation, in this sense, is essential to the process of accumulation and dispossession (Fairhead, Leach, & Scoones, 2012). In the cases of the Yixing Economic Special Zone (Chen, 2012) and the Ourzazate solar plant (Rignall, 2015), for instance, the language of cleanliness masks the way in which renewable energies occupy space and generate village demolition and residents' relocation. When people are dispossessed from their land and livelihood not only transformations to socio-environmental relations, cultural values and the places they live in present new cracks for political and social division. In the case of the Isthmus of Tehuantepec, along the same lines, wind energy development has encouraged patterns of migration. People who managed to find a subsistence strategy from fishing or from agricultural labours are now obliged to seek for transitional livelihoods in other regions because poverty traps are intensified by local conflicts and psychological and physical discomfort associated with wind parks (Dunlap, 2017). Nowadays, those in the region who work in menial aspects related to wind energy can only aspire to work for 2 or 3 months or even for 1 or 3 days before their contract expires. Although they save money for retirement in the national pension scheme, the amount they can invest with a day's work is almost nothing compared to a stable job (Carolina, personal interview, February 13, 2018).

The removal of land through mechanisms of discourse creation, accumulation and dispossession undermines land-based livelihoods and provokes a diversification of forms of employment in non-agricultural sectors that is far from the 'development-for-all' promise sold by enterprises and government. This process generates, at the same time, fractured classes of labour involved in various ways with wind energy development where peasants are obliged to combine farming activities – or not – with waged labour vulnerable to its own forms of oppression interacting class, gender, identity, ethnicity, amongst others (Bernstein, 2016).

Two Decades Under the Windmills: From an Annoyance to a Blessing – for some

In very few parts of the Global South we can find towns where windmills have been harvesting energy for more than 2 decades. Since 1994, wind energy development started in La Venta. Nowadays the town is surrounded by 7 wind parks - managed by the state-owned utility and Acciona (Geocomunes, 2015). This case can provide us with insights on the consequences of long-term wind energy development in the rural setting in the global south. It is possible to argue that wind parks have promoted inequality and have exacerbated social asymmetries in the community through three different mechanisms: unequal payments, externalities associated to wind energy and deepening inequality between those who own land and those who do not.

Wind payments to land-owners promote inequality. The only payment land-owners will receive for sure is the so-called "right of wind" (Arturo, personal interview, November 24, 2017). This means that land-owners receive a fixed quantity on a yearly basis for their piece of land inside the wind energy polygon. This payment varies from project to project ranging from 6 to 9 thousand Mexican pesos. Another set of payments has to do with the exact place in the polygon where companies decide to build infrastructure and decides to install windmills. Payments, in this sense, could be compared to Lego pieces: they start building up of one is lucky or has had access to classified information before the project started (Marcel, personal interview, October 17, 2017). If a landowner with two hectares of land, let us say, has a couple of windmills plus a road for machinery he will receive approximately 15,000 thousand Mexican pesos for each windmill plus approximately 10,000 pesos for the road. That is to say, 52 thousand pesos when considering the right of wind. On the other hand, one land-owner with the same amount of land but without infrastructure nor windmills will earn between 10 to 15 thousand pesos per year (Jorge, personal interview, November 30, 2017). Because wind payments, in this sense, rely upon land structures, they reinforce social inequalities and asymmetries by creating winners and losers.

Furthermore, wind energy expansion also brings new asymmetries that enhance the process of winners and losers inside the community. First of all, assuming that wind energy is environmentally-friendly is a fallacy. As one informant working for an enterprise assured, wind energy presents a strong environmental impact in relation to bird migration and bats populations (Laura, personal interview, Feb 14, 2018). When a bird population starts decreasing all of the sudden because of windmills, environmental balances tend to be disrupted and livelihoods strategies are modified. This imbalance has been observed in the last few years in the town of La Venta with two phenomena. Firstly, before windmills, bats would feed on this worm that is plague called '*pulgón*' threatening sorghum – one of the main crops in town. Nowadays, because bat population has plummeted, this plague runs freely now. The problem is that because of the wind energy payments, those who have more than 20 hectares of land can invest in technology to eradicate this plague. Those who receive, on the other hand, a small quantity of money can barely invest in this kind of technology. In consequence, if hit by this plague, they are most likely to lose the majority of their crops and to face an economic shock (Armando, personal interview, December 8, 2017). Secondly, before windmills farmers would use bird migrations, especially one they refer to as the *aguas*, to identify the ideal moment in the year for crop plantation in the northern part of the town – this bird would fly over La Venta just before the start of the rainy season. Nowadays, according to some of my informants, this bird population does not fly in the same extent as before because of windmills. Therefore, those who rely on more rudimentary agricultural techniques can be affected by this phenomenon not only because this bird barely flies anymore but also because of noise pollution resulting from windmills unlike those who can invest in irrigation systems (Armando, personal interview, December 8, 2017).

Finally, it is important to outline the inequality that wind energy companies have fostered between those who own land and those who do not. Although one of the goals behind the enterprise's corporate social responsibility and also behind wind energy expansion is to seek to ameliorate the quality of life of all the members of the community, according to my informants there have seldom been any benefits for those who do not own land in more than 20 years (Fernanda, personal interview, 20 February 2018). Apart from road-building, the enterprise funded the construction of a communitarian centre whose objective is to impart courses ranging from software to sandal-making lessons (Energía, 2012). The problem is that people do not feel that this space belongs to them and they have barely attended any course. Yet, they carry the burden of wind energy expansion with a general rise in the prices and being obliged to migrate to other parts of the country because there are no jobs available. Unlike land-owners who get to receive a wind rent, this population is extremely vulnerable to new forms of labour exploitation (O'Laughlin, 2016 & Fernanda, personal interview, 20 February 2018).

Two decades living under the windmills has resulted in a process that has generated winners and losers in two levels: between land-owners and between landowners and those who do not own land. The promise of jobs, new investments and social and economic development that once attracted peoples' sympathy in the first town where windmills were installed in Latin America, has resulted in a process where social asymmetries and poverty traps have been reinforced.

September Earthquakes or How a Devastating Shock Can Foster Wind Energy in the Isthmus along with the Economic Special Zones

This paper has explored the consequences of three different analytical moments in wind energy development in Mexico: the sitting of a project, the boom of wind parks and the long-term effect that wind farms that have been in the region for over two decades. Far from bringing a 'win-win' scenario, wind energy development has changed the rural area of the Isthmus of Tehuantepec by shoring up a process of winners and losers that has exacerbated social asymmetries and has revived social conflicts in relation to social rights, development and land. New dispossessions and exclusions explored in this document arise in this context because the expansion of wind projects has neglected peoples' ideas and viewpoints with regards to wind. At the same time, however, they also provide us with insights on the reasons why organisations and people are opposing wind energy in the Global South. These

processes risk to be exacerbated by the recent earthquakes and the declaration of the Isthmus as a Special Economic Zone.

In September 7th at 11:34 pm an 8.2 magnitude earthquake stroke southern Mexico. In some towns in the Isthmus approximately 80% of the houses collapsed (Secretaría de Desarrollo Agrario, 2017). The earthquakes have modified the scenario behind wind energy development in the region. Wind energy companies have invested a lot in the social context by lending machinery and actively supporting the relief efforts (A. Rodríguez & Matías, 2017). Also, with the next wind farm coming to the region this year in Unión Hidalgo, enterprises have started building up alliances with NGOs and Civil Society in order to fabricate and engineer the social terrain needed for the prior consultation in a context where people are more worried about their houses and future than about wind energy (Manzo, 2018).

The seismic events ought to be analysed in relation to a territorial re-arrangement taking place in the region since the beginning of extractive projects – be it wind energy, dams or mining. In a state like Oaxaca where 76 percent of land is still governed under social schemes, wind energy expansion and the recent declaration of the Isthmus as a Special Economic Zone risk to take advantage of the context in order to continue the re-adjustment towards private property (Bessi & Navarro F., 2017). A transition towards private property would result in an easier negotiation for investors because they would only need to negotiate with one person instead than with a whole assembly. Furthermore, the earthquakes have generated a situation where re-location and displacement in the name of safety seem plausible. In San Mateo, for instance, 7 days after the earthquake the military went to an informant's place and told her that it was no longer safe and that a re-location scheme for the town would be discussed. Likewise, in some of the towns, the morning after the quake, machinery started destroying collapsed houses without proper evaluation or assessment (Rosa, personal interview, December 12, 2017). Taking advantage of the shock and the physical and emotional distress caused by the seismic events provides the wind energy companies with a good opportunity to expand in the future.

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About the Author

Gerardo is a PhD student at the Institute of Development Studies working on the politics of wind energy in the Isthmus of Tehuantepec, Mexico. He is interested in the politics of green transformations and aims to explore land struggles, socio-cultural changes and patterns of resistance and support emerging from wind energy investments in the region. He previously did degrees in Political Science at UNAM - thesis on: "Happiness and Public Policy: The case of Bhutan" - and an MPhil in Development Studies at Oxford -thesis on: "Sumak Kawsay and Buen Vivir in Ecuador: The politics of Well-Being". Gerardo is currently based in Juchitán in order to conduct his data collection stage. He collaborates in the region with the Assembly of Indigenous Peoples of the Isthmus of Tehuantepec for the Defence of the Territory and Yansa Mexico on projects seeking to foster organizational capabilities amongst communities after the earthquakes of 2017.



The Emancipatory Rural Politics Initiative (ERPI) is a new initiative focused on understanding the contemporary moment and building alternatives. New exclusionary politics are generating deepening inequalities, jobless 'growth', climate chaos, and social division. The ERPI is focused on the social and political processes in rural spaces that are generating alternatives to regressive, authoritarian politics. We aim to provoke debate and action among scholars, activists, practitioners and policymakers from across the world that are concerned about the current situation, and hopeful about alternatives.

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