

# Global governance/politics, climate justice & agrarian/social justice: linkages and challenges

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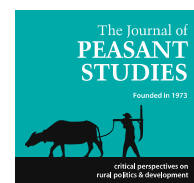
## *Colloquium Paper No. 4*

### ‘The town is surrounded’ : From Climate Concerns to Life under Wind Turbines in La Ventosa, Mexico

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# **‘The town is surrounded!’ From Climate Concerns to Life under Wind Turbines in La Ventosa, Mexico**

*Alexander Dunlap*

‘Not everything that shines is gold’—Etelvina Valdivieso

Sitting on an arid plain with scattered vegetation and rolling hills, La Ventosa, ‘the windy place,’ is located on the Isthmus of Tehuantepec (*Istmo*) region in the southwest corner of Oaxaca state. At the base of the Sierra Atravesada mountain range, and with a population of just over 4,000 people a powerful north wind blows through the La Ventosa and out to sea. This wind stream according to the 2003 USAID report, *Wind Energy Resource Atlas of Oaxaca*, is an ‘excellent wind resource’ and is among ‘the best wind resources on earth’ (Elliott, et al., 2003: iv; IFC, 2014: 1), establishing the Istmo as an indispensable site for wind energy development. La Ventosa was the second town to be saturated with industrial-scale wind turbines (IWTs) after La Venta, a pilot project in 1994 and later the first clean development mechanism (CDM) project, La Venta II, completed in 2007. After the USAID report, wind energy development expanded in the Istmo at an accelerated rate, causing a ‘Wind Rush’ that eventually surrounded La Ventosa with electrical infrastructure and wind turbines enclosing roughly 80-95 per cent of the town.

While the Mexican state has become known for its dirty war style tactics against its own population (HRW, 2009; AI, 2015; Paley, 2014, 2015), ironically, it is also amongst the countries adopting the most comprehensive climate change legislation. In 2007, after the Oaxacan Insurrection President Felipe Calderón adopted the first National Climate Change Strategy, leading to a series of ground breaking laws: The Renewable Energy and Energetic Transition Law (2008), The Special Climate Change Program 2009-2012, and The General Law on Climate Change (2012) that sought to reduce emissions by 30 per cent in 2020 and 50 per cent by 2050 based on year 2000 emission levels. This plan is known as the 10-20-40 vision, summarizing its goals as turning

...this great [climate change] challenge into an opportunity to conserve and sustainably use its natural capital; to take advantage of its vast potential to develop clean energies; to correct inefficiencies in the use of energy; to generate jobs within a green economy; to promote sustainable territorial development; to increase competitiveness, and to improve public health and quality of life (SEMARNAT, 2013: 9).

Turing the problem into the solution, this country wide trajectory was set forth by The General Law of Climate Change (LGCC), which institutionally supports and mandates the expansion of renewable or ‘clean’ energy. According to the LGCC this will be accomplished with ‘an incentive-based system, which promotes and allows for profitable electricity generation through renewable energy such as wind, sun, and small hydro’ that seeks to meet Mexico’s goal to generate 35 per cent of its electricity from clean sources by 2024 (LGCC, 2012: 65; SCCP, 2014). These ambitious climate change laws and targets continue and are embedded in The Special Climate Change Program 2014-2018. No doubt, the Mexican Government is leading an aggressive push to establish a green economy in the face of anthropogenic climate change, but will these measures adequately mitigate the political and economic system driving climate change?

The green economy, according to the Mexican Government, ‘must improve welfare and social equity, and simultaneously reduce significantly the environmental risks and ecological scarcities. In its most basic form, a green economy is a low-carbon emitter and efficiently uses its natural resources’ (SEMARNAT, 2013: 56). This legislation and shift to develop a green economy has already facilitated the construction of 1,608 industrial wind turbines in the foothills of the Istmo coastal region, accounting for 90 per cent of Mexico’s wind energy with more wind parks planned and on their way (Rivas, 2015). Surrounded by these wind turbines is La Ventosa, among other towns, while simultaneously more wind energy projects are spreading to coastal communities who have taken

militant stances against their arrival. The focus here will be the former, life under existing industrial wind turbines (IWTs) in La Ventosa and how people are experiencing the new frontiers of the green economy. Arguing that climate change legislation and the green economy is continuing and advancing the policies of neoliberal privatization, environmental destruction and displacement that have permeated Mexico for the last thirty years.

This paper will examine the experience of La Ventosa with wind projects through the notion of ‘green grabbing’ (Vidal, 2008; Fairhead, et al., 2012). Green grabs are transfers over the control of land and/or natural resource to powerful actors typically originating outside the area in question for ‘green,’ sustainable or renewable energy projects (Holmes, 2014). Notably these land and resource transfers involve collaboration from people at the international, national and local level with these projects utilizing various forms of coercion and/or deception to achieve their desired goals of resource control and concentration (Peluso and Lund, 2011; Borrás et al., 2012). With green grabbing in mind, this paper will begin with some background on La Ventosa, wind turbines and surrounding wind parks. This leads into sections that will discuss the arrival and politics of wind energy projects, the significant changes taking place in the town, which demonstrates the complications of green grabbing and how renewable energy is having a negative impact on La Ventosa. Finding that wind energy projects in Mexico, the backbone of the green economy, are entrenching and empowering existing trends of income-inequality, political corruption as well as social and environmental degradation.



[Insert map, Adapted by Author from University of Texas Libraries]

### Wind Energy Development in La Ventosa: Mining Clean Investments

Wind park planning in La Ventosa began in the late 1980s with its first commercial project completed in 2009. This was the Parques Ecológicos de México (80 Mega Watt (MW) built by the Spanish



companies Iberdrola and Gamesa. This development continued in 2010 with the completion of two wind parks: the Bii Nee Stipa I-III ('El Retiro') (74 MW) by Gamesa and the La Mata and La Ventosa Wind Park (65.7 MW) by the French Électricité de France (EDF). Then three other parks were completed in 2012 called: Fuerza Eólica del Istmo 1a (30 MW), 2a (50 MW) by General Electric Wind and finally the Stipa Naaya (74 MW) park by Gamesa (Mejía, 2014). The latter three projects extend the field of IWTs around La Ventosa to other towns such as La Mata, Espinal and Juchitán. Recently in November 2014, a *consulta* (inquiry) started in Juchitán responding to Mexico's adoption of the United Nations International Labour Organization (ILO) convention 169 in 1990, which requires the Free, Prior and informed consent (FPIC) of indigenous populations that would begin in the next round of wind parks development. Here another wind park by Eólica del Sur was approved on June 30<sup>th</sup>, 2015 on the outskirts of Juchitán—where it would have filled IWTs into two of the last three remaining spaces between Juchitán and La Ventosa. However, shortly afterwards a court injunction (*amparo*) was filed to stop wind development in Juchitán County. This injunction was temporarily endorsed by the Seventh District Court (CencosTV, 2015; Manzo, 2015), becoming indefinite in December 2015 (Sin Embargo, 2015). Serving as an example of the Mexican state's placing 'an occasional brake' on controversial development project to preserve political legitimacy in the area (Borras, et al., 2012: 411; Wolford, et al., 2013). Nevertheless, it must be mentioned this injunction does not protect other Counties with towns in resistance, like San Dionisio del Mar, who have been fighting wind energy projects on the Barra de Santa Teresa since around 2011.

Wind turbines consist of 80 meter (262 ft.) tall steel towers with a rotor hub connected to a rectangle box (nacelle) that contains the components (generator, mainframe, brake, gearbox, heat exchanger, Yaw system among others) that converts the motion of the blades into generated electricity. On top of the tower are blades made from aluminium or fibre glass that span 89 meters in diameter. While there are different types of wind turbines operating in the area, notably towers 150 meter (492 ft.) tall north of La Ventosa, the majority of the variations are visibly subtle residing in design and technological innovation. In the Istmo, the wind turbines are typically tri-blade turbines that sit on 80 meter towers rooted in foundation 10-14 meters (32-45 ft.) deep and about 16-21 meters (52-68 ft.) in diameter. These numbers can fluctuate outside these ranges depending on the project site. For example, in La Ventosa, IWT foundations are 11.5 meters deep, while in proposed sites like the Barra de Santa Teresa that consist of sand and vegetation making the foundation depth unknown with people speculating a depth of anywhere from 70 meters to over a kilometer.

Similarly the environmental impact varies on the project location, but there are still environmental damages to be expected. Wind turbines require the clearing of trees and animal habitat. This is done primarily for roads and subterranean power lines, but also to keep trees from interfering with IWT production. The concrete foundations mentioned above impact the water table and drainage, often resulting in extreme flooding and drying that has complicated farming in the area and has led to water wells drying up. Wind turbines also require oil as a lubricant to spin, which has a tendency to leak in both old and new wind parks in the Istmo, one wind park employee in La Ventosa nonchalantly admits: 'Several of the turbines you can see have oil leaks. If you want to go out into the sun you could see several—30 or 40 per cent are leaking oil.' Oil then goes into the ground, water wells and onto grass where humans, but more commonly cows can consume the oil, which resulted in people reporting cow deaths and infertility. Also, as is already well-known, IWTs damage birds and bats populations (Tabassum-Abbasi, et al., 2014; Drewitt and Langston, 2006; Barrios and Rodriguez, 2004). Additionally, accidents were also reported when IWTs are overwhelmed by wind or struck by lightning resulting in fire. Around La Ventosa there were four different cases of wind turbine fires that surfaced in interviews, one of which was close to town and reportedly made some children sick. The environmental impacts of the wind turbines increase when they are located next to water and sea life, which is not the case in La Ventosa.

Similarly, there were extensive complaints and health affectations ranging from general noise annoyance and house vibration to widespread concerns about cancer. Cancer became a reoccurring issue with people in La Ventosa. Notable was an unsettling interview where two police officers stood by an open window during an interview with a doctor who explained 'it is the majority' of the town

who has cancer. No doubt cancer's relationship to wind turbines remains undetermined and only one among many factors in the town, but the quantity of concerns about cancer in interviews in La Ventosa was alarming, requiring further independent investigation. Nonetheless, what is clear and is supported by the majority of the literature on IWT health impacts (Havas and Colling, 2011; Bakker, et al., 2012; Farboud, et al., 2013; Jeffery et al., 2014; Tabassum-Abbasi, et al, 2014; Evans, 2014) is that people living close to wind turbines experience noise, vibration, and psychological distress that is arguably intertwined with a negative psycho-social (or emotional) relationships to the political and economic forces behind wind energy development in the area. This area deserves a brief mention as this is important background information, but is not the focus of this paper.

Another issue is that wind energy projects are not cheap. It is estimated by International Renewable Energy Agency (IRENA) that a 20 MW wind farm costs a total of \$44.7 million (IRENA, 2015: 58). Wind turbines alone for a park this size estimated at \$22.91 million (IRENA, 2015), while others say a single wind turbine can cost 1.3 to \$2.2 million per Mega Watt (MW) (Windustry, 2012). Generally, construction costs are always negotiable and depend on the local political, economic and environmental context. These high costs, mixed with the reliability and profitability of wind energy has created doubts and hesitation for investors. However, these hesitations were mitigated overtime with economic liberalization promoting foreign direct investment (FDI) in Mexico with wind energy investment representing one of the latest frontiers.

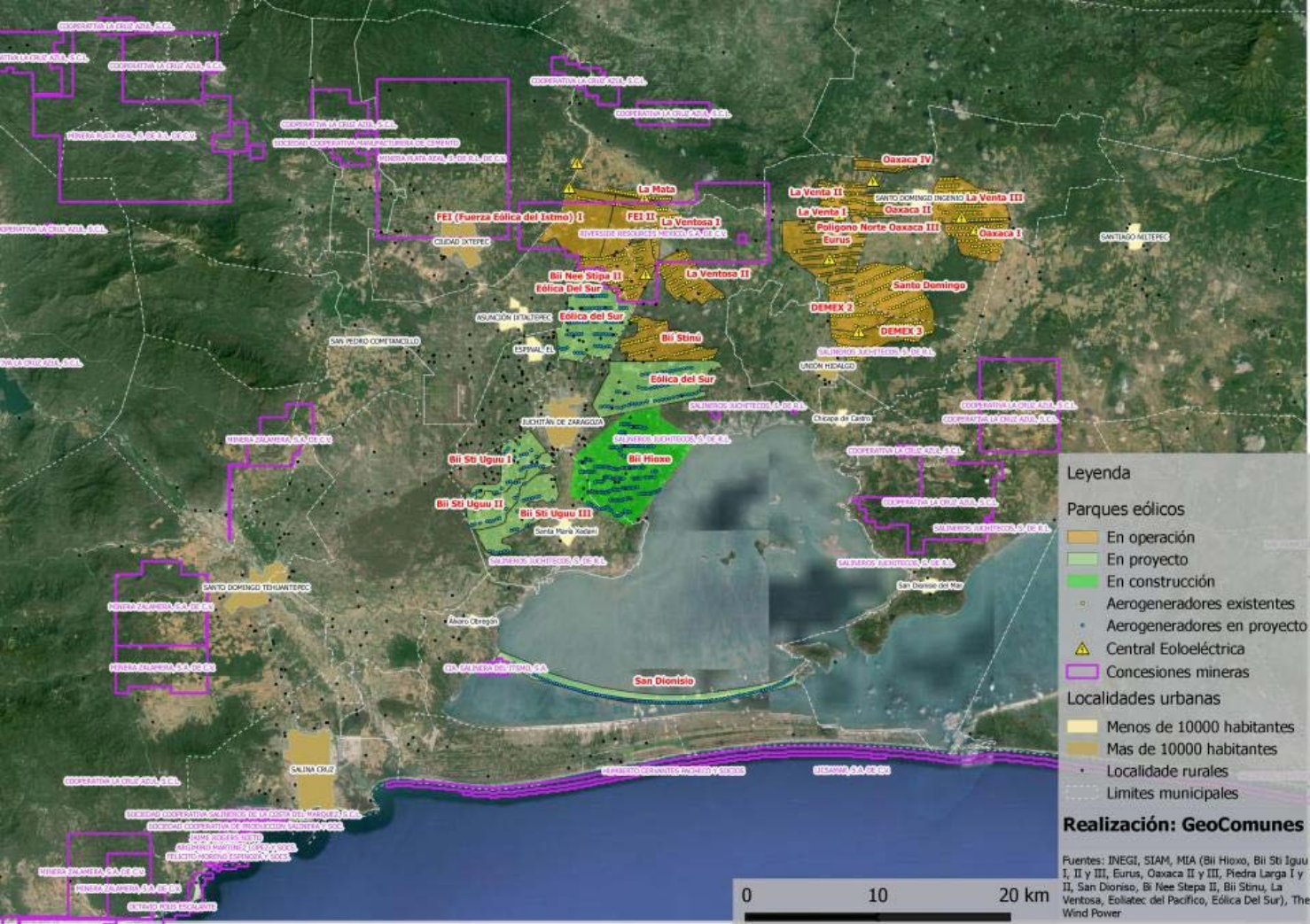
Receiving thirteen structural adjustment loans from the World Bank in 1980-1991 (Paley, 2014; Stephen, 2002), Mexico was met with a barrage of neoliberal programs that continue to this day. Three notable policies laid the foundation for the Oaxacan wind rush. First, was the revision of Article 27 in 1992 that created the possibility of privatizing social property—*ejidos* and communal land<sup>1</sup>. The Second was the 1992 electricity law that contains a notion of 'self-supply' (*autoabastecimiento*), requiring that excess electricity generation to be sold back to the national grid managed by the Comisión Federal de Electricidad (CFE), which has been criticized as a 'loophole' for transnational corporations (WDM, 2011: 8). Third, was the notorious 1994 North American Free Trade Agreement (NAFTA), stating in Section 6 that 'an enterprise may acquire, establish, and/or operate an electrical generating facility in Mexico to meet the enterprise's own supply needs' (USAID, 2009: 2). Now President Peña Nieto has taken this further on December 21, 2013 with the Petroleum and Federal Electric Utility Act, which came after decades of repression against the Mexican Electrical Workers Union (SME) (González, 2014). This legislation privatized the two largest firms in Mexico: PEMEX and the CFE, with Cuauhtémoc Cárdenas declaring that '[n]ever throughout our history as an independent nation, has the country seen such a dismantlement of the protections to our sovereignty and self-determination' (Cypher, 2014: 27).

These actions on part of the Mexican government created openings to establish a profitable renewable energy market, gaining the attention of Danish (Vestas), Spanish (Iberdrola, Gamesa, Marña Revonables/Eólica del Sur) and United States (Clipper) wind companies, which also gave rise to a series of limited liability companies. In the case of La Mata and La Ventosa wind Park, Eléctrica del Valle de México (EVM) owned by EDF Energies Nouvelles—the renewable energy arm of Électricité de France (EDF)—heard Wal-Mart wanted to 'go green,' approaching them and later negotiating a 60 per cent power share of the La Mata and La Ventosa wind park with electricity bought 'at a price that is higher than wholesale, but lower than retail' (WDM, 2011; USAID, 2009: 5). Other investors in the wind parks around La Ventosa are Cemex, Grupo Bimbo—the world's largest cement and food processing corporations—which are also accompanied by some of Latin America's largest mineral

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<sup>1</sup> The *ejido* emerges from Article 27 of the 1917 constitution after the revolution, which provided land for farmers to use, but not to buy and sell—this changed after 1992 alterations to Article 27 and the December 2013 Energy and Utility Act. Land allocation was for residential and agricultural use, governed by local assemblies made up of the recognized community members (generally all men). Article 27 still allowed the Mexican state a right to resource underneath the topsoil and control over the land. *Ejido*'s in the Istmo is different from communal land, which is governed by the community and does not have the same level of state involvement and control.

extraction and processing companies Grupo Mexico and Peñoles (Garcia, 2012). Grupo Mexico has 37 turbines in phases II-III of Bii Nee Stipa wind park, proving ‘once again,’ in their words, their ‘commitment to sustainability and the environment’ (GrupoMexico, 2014: 7; Hristova, 2014). Also demonstrating their ‘commitment to sustainability and environmental stewardship’, Peñoles (2014: 58) has two self-supply wind parks: Fuerza Eólica del Istmo 1a and 2a in La Ventosa, while it also has a gold mine concession of 10,039 hectare with the Canadian River Resources Inc / Arcus Development Group (Chaca, 2015; Biller, 2012; RS, 2008). Initially, Peñoles was a principle sponsor in the recently denied Eólica del Sur wind park (AMDEE, 2012), where now investments have gone north to a 180MW wind park in Coahuila (Peñoles, 2014). These wind parks are not only built on alliances between state, national and large-scale foreign capital (Borras, et al., 2012), but also operate in collaboration with other industries that are justified with an (green) economic logic, which gives rise to ‘offsetting’ (Holmes, 2014; Sullivan, 2009, 2013a, 2014). Now mining companies ‘offset’ their environmentally destructive practices with conservation, forestry and renewable energy projects to create notions of ‘sustainable mining’ and even ‘green uranium’ to prolong and expand environmentally destructive mining processes that defuse and fragment popular opposition to extraction industries (Seagle, 2012; Sullivan, 2013b: 82; Dunlap and Fairhead, 2014). Now wind turbines are renewing environmental destruction associated with extraction and processing industries, propelling industrial growth forward with new possibilities of receiving ‘climate’ and ‘clean’ technology funds and loans.



[Map 2 Wind Parks and Mining Concessions, by Geocomunes, 2014]

The La Mata and La Ventosa wind park became the World Bank's leading Clean Technology Fund (CTF) project in Mexico (WDM, 2011). CTF is the largest of the World Bank's Climate Investment Funds (CIFs), which was designed to support low-carbon technologies and encourage 'clean' investments. While the World Bank has invested in other wind parks, La Venta II (\$12.9 million loan) and III (\$25 million grant), about 30 minutes down the road from La Ventosa. The La Mata and La Ventosa project had loans from the CTF (\$15 million concessional loan), International Finance Corporation (IFC) (\$23.68 million), the Inter-American Development Bank (IDB) (\$21.01 Million), and Export-Import Bank (\$80.667 million) with the project totalling \$151.84 million (WDM, 2011). This wind park was registered with the Clean Development Mechanisms (CDM), which is projected to generate 1,179, 195 certified emissions reduction credits (CERs) over the next seven years and has been 'forward sold' to EDF Trading giving it the possibility to gain over \$40 million from the CDM (CDM, 2006; WDM, 2011: 11). Despite problems with democratic participation and oversight with the CDM (Newell, 2014), it has helped reduced the risk to investors, realizing the profitability of wind energy generation and renewing the operations of transnational corporations. Notably, none of the energy from these parks are providing electricity to the region (Juárez-Hernández and León, 2014; Simon, 2013; SIPAZ, 2013; WDM, 2011). Rumours have spread about towns negotiating free electricity and the The Worker-Peasant-Student Coalition of the Isthmus of Tehuantepec (COCEI) had been fighting for wind turbines to power Juchitán at a free or reduced energy price. Nevertheless, the national and regional economic model already in place is an energy export led-development model with the CFE as early as 2009 signing agreements with Belize, Guatemala and Los Angeles, California (USAID, 2009). Similarly, the Mexican State and private developers have been trying to turn the Istmo into a maquiladora corridor, which was conceived as early as 2001 under Plan Puebla Panama with its vision carried forward in drug war legislation, Mérida initiative (2008), and the Alliance for Prosperity and Peace, which calls for expanding the electricity supply grid in Central America (Paley, 2015).

Economic restructuring and neoliberalism mixed with concerns around climate change has given rise to a renewable energy industry that is projected and internationally committed to growing (IEA, 2014; SCCP, 2014). From a business perspective, transnational corporations have made the best possible use of existing national legislation and international programmes to 'roll out' new laws for businesses to grow, developing renewable energy markets and annual revenues, while simultaneously demonstrating corporate attempts at social responsibility. The green economy can renew not only Wal-Mart's, Peñoles, and Grupo Mexico's image, but also stimulate revenue streams, creating the possibility for continued economic and infrastructural expansion. Nevertheless, from the perspective of socio-environmental harmony and quality of life of people, these projects may just be reinforcing path dependency, expanding industrial consumption, growth, and electricity generation. Forfeiting alternative trajectories, while promoting destructive environmental interventions, spreading high-consumption habits and altering people's lives. The next sections will pear into the relationships and politics behind implementing and operating wind energy parks around La Ventosa.





[Insert photo 1 by author]

### **Wind Turbine Penetration in La Ventosa**

Towards the end of my first day conducting door-to-door interviews, my escort, friend and I dragged ourselves through the San Miguel neighbourhood of La Ventosa. Then before heading back to the centre of town we came across a vacant high-tension wire foundation. While the town had already been engulfed by Industrial wind turbines (IWTs) and electrical infrastructure, I was curious ‘why didn’t they finish the row high-tension wire posts?’ I asked our escort what had happened, he explained that the state without saying a word to anyone in the neighbourhood began building the power lines straight through the neighbourhood along the canal. Soon people began to ask the construction workers, ‘what is that thing? What are you building?’ The contractors told them: ‘We are going to build power lines down here,’ pointing across the neighbourhood. Immediately, the people started arguing, spreading the word and came back to take over the construction equipment and cars belonging to the construction company, forcing them to stop working and eventually to discontinue the project. Remaining was a line of concrete foundations. The people had stopped the project. However, nobody talked to them. The state did not consult them or ask anyone in that neighbourhood, let alone the town. The people learned by asking the workers and through their own will terminated the construction. If people did not ask, they would have never known and would be subjected to another layer of electrical infrastructure standing over them. Nevertheless, after hearing this story and looking around me, standing in a neighbourhood at the centre of a wind energy generation site, it became clear that these high-tension wire foundations were a metaphor for the development in La Ventosa: the people are never fully informed, unless they find out and if need be, stop it themselves, otherwise the projects will proceed with minimal care.



[Insert photo #2 by Author]

The Istmo in general, and La Ventosa in particular are governed by a *casique*—a local political boss. The *casique* retains both local and national client networks of politicians, union leaders, business elite and gunmen, making them central figures to the business and development projects in their area—a type of realpolitik. Their level of control and influence on local politics and business makes them central players in the wind turbine business, bridging the gap between the international and the local. This struggle against regional political bosses is old. The notion of the *casique* received contemporary significance after the Mexican Revolution. In the Istmo the popular *casique* General Heliodoro Charis defend Zapotec culture and fought for ejidos, which changed after his death in 1964, opening a power vacuum (Campbell, et al., 1993; Rubin, 1997; Smith, 2009). In reductionary terms, this struggle for regional power after Charis became a battle between Institutional Revolutionary Party (PRI) and the COCEI. The 1970s-1980s were rife with deadly internal political conflicts over autonomy from Oaxaca and Mexico City, indigenous cultural preservation (mainly Zapotec) and negotiating the arrival of modernization.

Agrarian politics and development has always been a struggle in La Ventosa (Binford, 1985; Campbell, et al., 1993; Rubin, 1997). In interviews it was explained that back in the 1970s the current *casique* in La Ventosa used state forces to evict the COCEI activists protesting the privatization of communal land by squatting on it, which is now the land where Don Porfirio Montero Fuentes lives, a local Christian leader and card carrying PRI member<sup>2</sup>. I was told, the *casique* was involved in regional development projects throughout the years and was responsible with other PRI politicians to have ‘destroyed the sugar cane refinery’ and ‘finished off the sugar cane business in Juchitan.’ Continuing to say that ‘[t]he *casique* has always had a lot of power, he had the PRI government with him and it is still like that [today].’ Another land owner described how ‘the politicians from here and all over the place got rid of sugar cane refineries and sugar cane was the best crop for La Ventosa ‘because it was

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<sup>2</sup> This event was recounted both in Rubin, 1997 and Howe and Boyer, 2015.

resilient against the wind.’ Sugar cane would later be replaced with cattle rearing in 1988-1991. These agrarian changes come on the back of falling oil prices and economic crash (1982), opening Mexico to structural adjustment programs. Meanwhile, the COCEI won elections in Juchitán in 1981, were later they would be ousted in 1983 with a military occupation, with COCEI activities violently suppressed. This led to cooperation with the PRI in regional elections in 1986 as well as with Salinas de Gortari controversial visit to the Istmo in 1989 with the COCEI signing the Pacto de Concertación Social (Rubin, 1997; Altamirano-Jiménez, 2014), signalling their institutional turn.

These macroeconomic, agrarian and political changes in La Ventosa set the stage for wind energy development. Neoliberalism spread as the COCEI cooperated after the pact, taking an ambiguous position towards Plan Puebla Panama and embracing corporate chains in Juchitán such as Bodega Aurrera (Wal-Mart), while embracing the idea of wind energy development enthusiastically (Altamirano-Jiménez, 2014).

The local casique led the way for this change. ‘He takes control over everything, he takes advantage of the situation before it is put into place,’ explains a landowner who continues by recounted the arrival of the wind turbines:

He made an announcement at the beginning: “anyone who wants to sign a contract for a wind project,” and he did not let them read the contract. About three hundred people came and signed, he said, ‘Bring all of your paper work on your land,’ but there were people there who broke-up that meeting, but he is the casique who is always stealing from this town.

The role and collaboration of the casique is fundamental to receive and facilitate the local politics of land control and leasing. Borrás et al., (2012: 411) writes: ‘The key here is that capital is interested in taking hold of land resources in order to change the meaning and purpose of land use, and there is a wide range of possible mechanism to do this.’ This mechanism in La Ventosa are long-term land leases for 30 years, which have three automatic renewals for 20-30 years. With the cacique’s permission, these land deals were managed by another actor—the Coyote. One testimony, which became a reoccurring description, stated:

They did not start with a forum. First some people called Coyotes were brought in, they started talking to some people and reserving the land [for wind companies]. They convinced the *comisariado*, they gave him money and then they began to say: “They are going to grow air, because here you cannot grow anything. So you will be harvesting and you will have money.” So they had isolated meetings called by the casique or the *comisariado* and the authority never called a meeting [to consult the people]. It was isolated. It was done house by house as fast as they could. They signed contracts that they themselves [the companies] drew up. That is how it went.

The Coyote is a middle man from within or outside the Istmo who works to reserve/secure land for the wind companies. It is their job to acquire land at the best possible price, which is incentivized. Another land owner, seeking more contracts with wind company to build on his land, described the situation with the Coyote as ‘whomever is well prepared will get a good price, but if you are a dumb ass, no. He has to negotiate. That is how he gets his share.’ The way Coyotes reserved land, complicated further the politics of green grabbing, creating new grey areas in land deals, a kind of ‘don’t ask, don’t tell’ in the way land is acquired. This officially provided the companies a politics of plausible deniability and room to put pressure on those who are hesitant to lease their ejido and private land. While land was already concentrated into about thirty per cent of the population with roughly 260 land owners, selling land had social consequences. Not only because it was all people had, but also the century long struggle to get the land, which some interpreted as risking generational betrayal to parents and grandparents. While Coyotes were able to acquire land by any means necessary with various deceptions: false/exaggerated promises, using illiteracy, indigenous language barriers, and ignorance to their advantage as well as intimidation (WDM, 2011; Simon, 2013; SIPAZ, 2013; Juárez-Hernández and León, 2014), they created other complications for both people and wind companies. Describing the Coyotes as ‘very subtle,’ a friend continued to explain what happened to their cousin:

[who] was told that she was going to get 20,000 pesos [1,188 USD] to attend some talks and sign a piece of paper and she said, “20,000 pesos, why are they going to give me that?” They were subtle, they went house by house, and they always worked individually — never collectively. They tried to take advantage the best they could. In fact it was commented in town that people were signing the agreements without the beneficiaries being listed there. So, the owner would sign a contract for 30 years without the beneficiary being specified in the contract or an inheritor in case the owner died. ... For example ... this politician crosses the highway with a piece of paper in his hand and says to her [cousin]: “sign here, if you want to get 5,000 pesos from Iberdrola because she had a contract.” And she said, “Yeah that is fine.” She signed and the guy said, “I will be back in an hour to give you money.” The guy that took the paper to her is a lawyer and her cousin; she said it was the tenth of May. When she told me this, it was not a year later, the 8<sup>th</sup> of May and she had not received a peso.... so we went to see Juan Carrasco, representative of the wind company—the boss. Then we told the guy what had happened and he said, “No, it was not 5,000—it was 18,000 [pesos].” She said, “But I have not received a single peso.” He said, “Well, here is your signature.” And her signature was just three letters and the kid had falsified her signature. So that was theft. That day, a guy was there...the guy with Iberdrola currently. When Carrasco came in we told him, we are going to send papers to UCIZONI [a resistance group], we threatened him with UCIZONI—we are going to talk to Jason Stakes. ...we forced him to pay her, “we are not going to leave until you pay her,” and he did not have all that money, he needed 7,000 more and he sent a kid to his house for the rest. So yes, there were dirty dealings that other workers were making.

The wind companies deny working with Coyotes, they call them ‘political representatives,’ but the people know them as Coyotes. While this account likely has other versions, it demonstrates the added complications of local collaborators. If you were not a land owner, politician or political representative (Coyote) then you were not informed and had little or no idea about the construction of the IWTs. Wind energy development created a situation where individual choice could have far reaching collective consequences on everyone in the town.

Another technique of acquiring land was marrying into families. I heard of this from a friend in from Juchitán when I first arrived in Oaxaca City, which also surfaced in La Ventosa as an increase in ‘fatherless children.’ As it was explained, lots of foreigners migrate to La Ventosa because of the proposed work on wind energy parks, then local ‘girls’ fall in love, ‘are seduced’ or have motives of their own for entering into these relationships. This resulted in women marrying people associated with the wind energy companies and in La Ventosa, among other towns in the Istmo, these marriages have implications, providing access to land reserved only for people within the community. Discussing this point, a woman explained:

Yeah, in general we know it is an economic situation and the companies pay a lot of money, no? So if some foreigner is able to marry and become a part of some family, he has a communal right and they would pass on to become land owners. Yeah, we have a case like that, we have a case of someone who is not from here and they married a young lady and they have a residence, they bought a lot of land and he is an owner now—he already has the rights.

**AD:** Is this common? Is there more than one case?

Yes, there are several cases.

**AD:** Could you give me a rough estimation of how many cases there are?

We can say 5 or 8 eight per cent.

**AD:** Of people in the wind company or people in the town?

From the companies.

This I am told has left broken homes and created an abundance of single mothers in La Ventosa after wind company employees return to their families back in Spain or travel to their next construction



project. This type of in-and-out migration created by wind energy mega projects had deeply personal and social consequences in La Ventosa.

Repeatedly people would remind me that the *casique* is the one responsible for the arrival of the wind companies and their subsequent discontent. In interviews the *casique* is repeatedly presented as the puppet master behind the curtains. For example the lead doctor in La Ventosa, Dr. Manuel Rios, is who all the doctors in town have to report is the nephew of Don Porfirio Montero Fuentes. The political arrangement in La Ventosa managed by the *casique* is widely understood as corrupt. Someone explained:

By now people have become aware that all these politicians just want to get into power. The companies are paying money to the town hall for projects in the community, but many times the mayors will sometimes say, ‘we do not get anything from the companies,’ but the reality is they are pocketing it all for themselves.

This perspective is taken further when talking about political parties in general. When asking a different land owner, ‘Do you think the *casique* is making more money here than the COCEI?’ They replied: ‘It’s the same, they negotiate the same. They seem to be fighting, but no. They work together under the table. COCEI, the PRI, they are all together.’ This jaded perspective was repeated innumerable times in interviews. Nonetheless, while it was noted that the COCEI sold out, they appear to be fighting for more social benefits and unpaid taxes from the wind companies (Manzo, 2015 Jan.)

In the last couple years, resistance in La Ventosa has reignited with a counter-town hall to resist the power of the *casique*. This counter-political faction was able to prove with photos, video and recipes that the *casique* and his people were engaged in voting fraud. This distribution of funds for voting credits, it was explained, was made possible by the money distributed to the town by the wind companies. They took this to the courts in Oaxaca and Xalapa with little results. Nevertheless, they persisted with blockading the highway, occupying city hall and protesting until Saúl Vicente, the Mayor of Juchitán, was recounted saying: ‘You can continue going to war or I can offer you this tie so there can be peace,’ offering to split political control of the town into two factions—the *casique* and counter-*casique*. This political technique of ‘parallel offices’ has a history of resolving conflict in Mexico (Rubin, 1997: 52; Smith, 2009)

On my first visit to La Ventosa, a local political candidate showing me the distance of IWTs from houses explained that the *casique* ‘is the one who rules the wind energy project and the people who raise their voices are intimidated by him, but we are not intimidated because we have courage to denounce it.’ This faction is largely concerned with the failure of social development and benefit sharing in the town and while many in the town criticize the counter-faction for going after the wind company money allotted to the town hall—a common practice of politicians—they still provided an important opening for this research. Said simply, there was another gang in town. While I believe there was a fair amount of self-censorship in a number of interviews and encounters as ‘people are afraid to talk about the wind turbines because of the *casique*,’ there was a space—an opening with (relative) protection so I could conduct census style interviews with people in and around both factions. This would allow me to learn about the failure of social benefits in La Ventosa.

### **Land Change: Inequality, Rural Gentrification and Modernizing Poverty**

When I asked people: ‘What do you think about wind energy projects in the Istmo?’ The response of the majority of the people can be summarized: ‘There are no real benefits’ for the town, only the land owner’s benefit from the wind projects. Out of sixty-three people interviewed forty-seven said there were no social benefits, while thirty-six said only the land owners benefited. The ‘social benefits’ refers to collective benefit achieved for the people as a whole—a community. It was not only the land owners who benefited, but also political authorities such as the *casique* and his network of associates. There were at least twelve people who felt they were not affected by the industrial wind turbines (IWTs), viewing these projects as generally beneficial to the town even if these benefits were admittedly limited. Likewise, there were at least three land owners who felt grateful, while simultaneously at moments angered by wind company negotiation practices and their lack of

information about IWT impacts. They felt the wind companies provided new opportunities for the town, themselves and their families, allowing them to send their kids to university. Walking around the town, you can see from people's houses and their cars—Jeep or other American brands—who works with the wind companies. The same narrative is articulated in Howe and Boyer's (2015: 35-6) 'Don Julio,' but these findings of appreciation were immersed with discontent and at times helplessness—'they [the wind turbines] are already here, what are we going to do?' The benefits from wind energy projects included: (temporary) work, (some) paved streets, a market centre, the house of culture, painting the schools and a soccer field. A mother told me that the wind companies helped low-income children with painting lessons, Zapotec language classes, and this year with summer school. Not to forget classes about wind energy in primary schools as well as technical courses at the University of the Istmo to train people in electrical engineering. However, many of these civil projects I was told, by the counter-*casique* faction, were achieved with struggle and protest.

Discontent with the wind energy projects seemed overwhelming. For example, regarding improvements to the schools it was explained:

...when Iberdrola was about to enter a few years ago they said there would be social benefits. This is what the companies said, they were socially responsible, and it was even their slogan. So the first thing they said was that they were going to improve the school because the school is 40 years old and it expired 15 years ago and until now there is no progress. The only thing they did was brought two paint cans to the school and took a picture and they said, "We are supporting education." They bring two footballs; take another picture and say, "We are supporting sports." So there is no benefit for this town—there is none.

Accounts like these were common. While some appreciated the 4-12 blocks of paved roads in the town, other felt this was an utter joke. 'So the streets were paved, but the only people who benefited are those with land.' Considering the scale of the project, the money involved and people's quality of life, they felt it was a change for the worst: '*We are still poor and now we are surrounded by wind turbines.*'

Work provide by wind companies was met with similar attitude. The work was temporary, anywhere from three months to a year and a half. This work also depended on people's relationship with the *casique* and corresponding unions. I was repeatedly told that jobs became a way of buying votes and silencing people. Likewise the idea that '[i]f you want to keep your job, you have to do everything the company says,' created another problem. In the context of the *consulta*, beginning in November 2014, 'workers are obligated to be there by union leaders' because 'they are being paid to do that.' Work relations were tied to supporting the wind companies, which even extended to paying to intimidate and repress people against the wind projects in town and at the *consulta* were they would get paid around 150-500 pesos to attend. A person explains, getting mildly frustrated with my questioning: 'Look. I am more than anyone else would be in agreement [with the wind companies] if it benefitted the people who need the work, but unfortunately it only benefits people who have the power.' The same person stressing their dissatisfaction with the benefits to the town said that they 'would put up with any noise' for the development of the town—more roads, new schools, health clinic, sewers and so on. Work was usually restricted to civil works and pouring foundations for the IWTs. Wind park jobs were in competition with migrant labourers and other specialists who came from overseas to work on the wind projects. Work was limited in duration, quantity and went to foreigners because of their technical expertise with IWT construction (Simon, 2013). Time and again, people stressed: 'They promised work, but nothing—it is worse than before'.

This dissatisfaction was multiplied with rising electricity prices. Thirty-seven of sixty-three people mentioned or were completely outraged by rising electricity bills. 'I feel that we should not have to pay an electricity bills in this town because we are surrounded by these wind turbines.' Another person explains the situation:

*Every two months the electric bill goes up higher. So when the bill comes in at 800 or 1,000 pesos the farmer does not have enough to pay for that bill. So then the CFE*

*comes and cuts off your power because you have not paid. Poor people. If it was generating electricity our families should be doing well, we should be able to enjoy that, but rather there is no benefit.*

A small sandwich shop owner said they pay 3,000 pesos every two months, which are big jumps in electricity bills that risks putting them out of business. Another person contends they are paying 1,000 to 1,200 pesos every two months for electricity in their home, a pressure that is justified in the change of use in soil for wind turbine construction in the town. With the construction of the IWTs, La Ventosa is considered an industrial town, which means they lose state subsidies and pay industrial prices for electricity regardless of living within the power plant itself. 'How we are supposed to be an industrial town if we do not have the comforts and services of an industrial town?' Explained an outraged resident, who continued by talking about the running water and how 'it is not drinkable and they put some pavement on the streets, but they did not take care of the sewers and the water, they just did things to make the town look pretty. At a certain point this hurts us.' Another person said it similarly, 'How is it possible that they consider us an industrial zone because our region is producing energy they are taking to other countries?' While conducting an interview at a house 300 meters from an IWT a CFE truck pulls up behind us at the neighbour's house. The CFE employee goes and knocks on the door, afterwards they walk around the property and fiddle with things, which I would assume is them shutting off the electricity. Then during another interview thirty-five minutes later down the street, the CFE are still driving around going house-to-house and a woman yells: 'We want light! We want light!' The situation appears disheartening. People have been enclosed by wind turbines, while electricity prices are sky rocketing with about ninety-six per cent of the jobs made available from the wind companies have left the town. However, this is just one change in La Ventosa after the arrival of IWTs, which is undergoing a type of rural gentrification driven by wind energy development.



**[Photo # 3 by Author]**

Over two decades ago, Martin Philips (1993: 138) argued that ‘rural studies would appear to lag behind urban studies in recognizing the diversity of ways one can interpret and understand gentrification.’ Almost twenty years later, Darren Smith (2011: 599) asserts that ‘this statement has considerable and arguably increasing, resonance to the current context’ of rural gentrification. Arising from public regulation and private investment, Gentrification is a dynamic economic process of urban revaluation that creates price hikes on space, and by extension property in target areas (Lees et al., 2008). Smith (2002: 390) makes a call to ‘widen the spatial lens’ of gentrification studies, while Davidson and Lees (2005:1170) define four foundational characteristics of gentrification: (1) reinvestment of capital, (2) social upgrading with in-migration of high-income groups, (3) landscape changes and (4) direct or indirect displacements. While characteristics of rural gentrification have already been demonstrated with large-scale capital investment, exclusionary land leasing practices, in-migration of high-income groups (employees)<sup>3</sup> and rises in electricity prices, wind turbine development has given rise to another geography of rural gentrification.

IWTs have driven up land and rent prices. A community worker explained the situation this way:

When the companies first came they arranged a rental contract and they came to look at the lands and they put in a clause that when the owners were ready to sell, they would have to sell to the companies. Then all of the prices went up more than 200%, the price of land then was 4,000, 5000 pesos. Now it costs more than 50,000, 60,000 pesos.

Talking about the change in rent, an *ejidatario* explains, ‘[i]f the rent before was 300 pesos, it is now 3,000 or 4,000 pesos—that is too much.’ This influx of people coming to plan and execute these wind projects, which was significant for the size of La Ventosa, had varying effects. The arrival of more people and money triggered a moto-taxi rush, with around 200 people buying moto-taxis, which now sit in people’s houses after IWT work ended. While moto-taxi’s increased, so did the price of gasoline as well as the price and quality of food. ‘The companies use to pay more than what the people are used to here, but it had consequences, because once the wind energy companies left, everyone wanted to charge the same amount [of money] to everyone,’ explained a moto-taxi driver. This trend subtly influenced restaurants to accommodate foreigners and to take advantage of the new money in town. Discussing the ‘sickness’ among people in the town one woman explains:

We think it is something coming from the food. Actually before we did not eat this kind of chicken, we ate chickens that were raised. The pigs are the ones now that just eat [industrial] feed and before that was not the case. Before we just ate animals that were roaming around, eating whatever they could find, like corn. Now they are just eating purely feed made of chemicals and now people are getting sick—a lot.

The land change to ‘wind harvesting’ has had significant ripples, leading people to import food, which raised prices. Another person complained, ‘every day the price of meat gets higher,’ telling me that it is over 140 pesos a kilo. ‘[S]ince the arrival’ of wind energy projects a woman explained that ‘the problems that were already here started to grow with increases in drugs, in rent and food [prices].’

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<sup>3</sup> Most people migrating from Northern or Developed countries with wind companies jobs will resemble a high-income group.





[Photo 5 by Author Mural in Juchitán: ‘Autonomy and freedom of expression—My totopo will not have genetic modifications—Casiques oppress you—Political parties divide you—Enterprises invade us.’]

This raises other issues surrounding wind energy development: crime and drugs. Explaining the rise in crime in this town, people continually blamed it on ‘outsiders’ or ‘foreigners’ who think La Ventosa is rich because of the IWTs. ‘Because there are a lot people who have wind turbines on their land and they have higher earnings, so there have been more robberies, assaults and people have broken into houses,’ explains a women. ‘So there are a lot of people coming from the outside, so since this town is so small we all knew each other, but not anymore.’ While twenty-two of sixty-three people felt a rise in crime, thirty felt there was a rise in drugs. A civil servant explains how this became a serious issue for the town:

It was about three years ago, when the high-school, the teachers, the workers and the staff of about 30 workers and three-hundred students demonstrated and went on strike and closed down the road. Because of the lack of security our population was living in, because of the consumption of drugs. Young people from outside the community, but the region, were coming and selling drugs, selling coke [cocaine]. So we demonstrated before the government and the government authorities so that for our town they would give us more security. And that these young people that would come and distribute drugs would retire and go away because they were practically poisoning our students. They are adolescents from 12 to 15 years old (1.24).

I followed up by asking if this rise in drug had ‘some relationship with the wind companies?’ The teacher replied: ‘Probably, yes. Because before there was delinquency, yes, but not so much like when the foreigners arrived.’ Stories kept emerging about young people intermingle with wind company workers, who provided them a gateway into drug use and dealing. A friend summed up the problem this way: ‘The Jobs leave, but the drugs stay.’ The FDI and wind energy development created not only

a direct rise in housing, electricity and food, but also an indirect rise in crime and drugs intensified modernized forms of poverty (Illich, 1978). Narcotic trafficker related violence had increased while living in the Istmo, arousing curiosity to Dawn Paley's (2014) *Drug War Capitalism* theory and how it might apply in the Istmo.

The wind energy development has triggered a duel process of revitalization for some and ghettoization for the majority, which have intensified pre-existing negative relationships and patterns within the town, which has contributed to an increase in out migration. This restructuring of the town around wind parks, the dramatic rise in prices as well as the psychological and physical discomfort from living surrounded by wind parks has intensified a poverty trap, resulting in indirect displacement. This is related to land change. Summarizing the situation a pastor explains:

People complain because they cannot work the land like they use to, even though they were given money for the renting of the space, but they cannot work in agriculture. There is no more corn, beans, or watermelon. The ranchers are trying to make the best out of the little bit of grazing land that they have, but there is no more production in agriculture.

This recent step to move from agriculture, livestock to wind energy appears to be slowly establishing dependency on the importation of food from industrial sources. This corresponds to the larger macro-economic trends in Mexico and insecurities associated with dissolving small-holder agriculture (Bello, 2009; Schutter, 2011; White et al., 2012), which in La Ventosa has widened the income-inequality gap, allowing a type of rural gentrification to flourish and resulting in out-migration for work. A man explains:

Yeah, much less work—less work. That is when people will start to migrate as far as the United States where people normally migrate to or maybe to other states or simply they will stay with the possibility of living day by day. For this reason it hurt their children in the educational field, they will not be able to continue their study because of the lack of resources.

**AD:** Do you see this starting happen now?

Yes. Yes, I have a lot of friends who do not study anymore because their parents have ended up without work and they have migrated to other states and started working and plumbing in bathrooms and as low-paid workers in tourist zones where there is a little more work.

While these trends of land change, rural gentrification and out-migration is already taking place, it is thought by many to get worse in the near future. It may be too early a phase to call it rural gentrification, possibly, missing the chance of revitalization with more IWTs, resulting only in a process of wind turbine driven accumulation by dispossession. Nevertheless, this goes on while some people profit from IWTs on their land, while more face town-wide price hikes and wind turbine enclosure. Wind energy development results in a series of dependences, notably on the construction of more wind energy projects for the landless workers (Borras, et al., 2012), pinning them against their neighbours and the coastal communities that survive from farming, fishing and selective engagements with the (tourist) economy. An enormous environmental intervention, wind energy projects have far reaching social and environmental impacts draped in public relations, market opportunities and the hope that friendlier ways of industrial development will not result in continued ecological catastrophe. This hope appears unfounded.

## **Conclusion: Greening Inequality**

The green economy is continuing what is becoming increasingly difficult and politically problematic for the economy to continue alone. That is to expand the state organizational structures, grow the national and transnational economies that require the continued consumption of human and natural resources for industrial expansion. Industrial development has led to anthropogenic climate change and ecological crisis, while the green economy is a series of actions to strengthen the resolve of this industrial trajectory. Extending these state and economic systems using crises, which not only

reinvigorating land conflicts using climate change mitigation interventions (Dalby, 2013, 2014), but also further cementing this trajectory of social and environmental degradation (Dunlap and Fairhead, 2014). Wind energy becomes a step forward in privatizing and commodifying the wind, while still in a (relatively) early phase in its trajectory as a ‘clean’ technology the example of La Ventosa serves to demonstrate the reality and divisions surrounding wind energy development. Large quantities of turbines are exporting electricity to other countries, while simultaneously propelling industrial mining, production and consumption to ensure annual growth imperatives of corporations. Wind energy development serves as an economic stimulus in rural economies, but results in processes akin to rural gentrification that concentrates power, intensifies poverty and social immiseration, while spreading industrial waste with electrical infrastructure, roads, and concrete in the name of mitigating climate change.

The example of La Ventosa shows the complications associated with green grabbing that resonate with Borras, et al. (2012) and Holmes (2014) who expands the definition of land/green grabbing and how these types of land acquisitions can happen through complicated and often sublet procedures, which are strategic in the way they approach people to broker and consolidate land. The strength of these projects and source of complications with green grabbing is the hope these projects generate. ‘Infrastructures’ Harvey and Knox (2012: 534) write, ‘can dazzle with the possibilities they hold—glitter of progress, the lure of profit, the promise of circulation, movement and a better life.’ These hopes for a better, as well as more ecologically sound life in the case of wind turbines, captivates the imaginations and desires of people, but the green economy and its assemblages entrenches industrial progress, while reflecting an advance in political control.

In the same way autocratic regimes becomes difficult to maintain and politically unfeasible overtime, on the other hand, democratic regimes cultivate a participatory culture, which enables self-identification and belief into the governing system. Yet autocratic and democratic regimes engage in the same endeavours of industrialization, population control and political conquest. Democracy mobilizes a productive power for people to self-internalize political processes and actions, strengthening the existence of a system that organizes and manages human and natural resources for political and economic growth. In terms of economic modes of governance, you see a similar shift or more accurately a diversification of the economy, with the articulation of the green economy. It mobilizes a positive desire of populations to extend an energetic and economic regime, especially in the face of anthropogenic climate change. The green economy and by extension climate change legislation aids the merging and intensification of infrastructural systems into the lives of people—merging further industry and environment, akin to a new macro experiment in ergonomics. As the fruits of modernity bloom, the mechanical flowers propel further the proliferation of industrialization, ghettoization and selective prosperity, suppressing alternatives and rebellious people, while the processes and people most responsible for anthropogenic climate change emerge unscathed and continue as they always have.





[Photo 5, by Author]

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## **About the Author(s)**

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