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Anthropocenic Ecoauthority: The Winds of Oaxaca

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ABSTRACT

This article analyzes the development of wind parks across the Isthmus of Tehuantepec (Oaxaca, Mexico) and, in turn, how a politics of resistance and local perceptions of environmental peril have challenged renewable energy transitions. In the fraught debates surrounding the massive Mareña Renovables wind park, dramatic distinctions have emerged between local perceptions of ecological conditions and forms of environmental knowledge calibrated to global climate remediation. These divergences indicate distinct ways of imagining and articulating “anthropocenic ecoauthority”—a series of experiential, scientific, and managerial truth-claims regarding ecological knowledge and future forecasting in an era of global anthropogenic change. Whether enunciated by resident communities, state officials, corporate representatives, or environmental experts, ecoauthority gains its particular traction by asserting ethical claims on behalf of, and in regards to, the anthropogenically altered future of the biosphere, human and nonhuman. The article concludes with a discussion of how biopolitical and ecoauthoritative positions coincide, suggesting that although the original sites of biopolitical intervention have been population and the human species, the energetic, atmospheric, aquaspheric, and lithospheric shifts that have been dubbed the Anthropocene demand that we account for life in its local dimensions as well as on the scale of the greater planetary bios. [Keywords: Ecoauthority, renewable energy, climate change, ethics, social movements, Mexico]

Lagoons

I would like to be able to say that I have a great recording of the conversation that Jesús and I had out by the lighthouse, at the end of a tiny peninsula that slowly disappeared into water around us. But microphone technology being what it is, and the wind being what it is in the Isthmus of Tehuantepec, there is nothing but a loud a rush of white noise blowing through the digital spaces where our conversation should have been. These are no average winds and their value has been carefully metered, both in terms of their profit making potential and their greater ethical possibilities in the global reduction of greenhouse gases. If you ask anyone in the global wind energy industry, they will likely tell you that the Isthmus of Tehuantepec is one of the best places on the planet to generate renewable electricity. In San Dionisio del Mar, where Jesús was born and raised, the largest single-phase wind park in Latin America has been slated for construction; it is also where Jesús and others have been leading a movement against the park's installation on their collectively held land. One of the reasons that Jesús and other *comuneros*¹ have opposed the Mareña Renovables wind park is that they are convinced that the construction of the park will endanger local fish and shrimp populations. San Dionisians live by the sea in both senses: the town is located on a lagoonal and maritime peninsula, and many residents are dependent upon the surrounding waters for both income and subsistence. San Dionisians and others in the *resistencia* are also wary about renewable energy development in the region because, thus far, it seems to have recapitulated the old habits of capitalism, *caciquismo*,² and corruption. Many Istmeños believe they have been enrolled in programs of renewable energy development without being fully informed or included in the process. Or, to use the language of the *resistencia*, they have been tricked and forced to bear the consequences of climate change mitigation and green capitalist aspirations in ways that are all too familiar.

Events that will determine the future of wind energy in the Isthmus and, in turn, set precedents for renewable energy development in Mexico, have been unfolding on an almost daily basis in the Isthmus: most of them in the form of confrontations, *bloqueos* (blockades), and *barricadas* (barricades) on the ground and in the courts. This article is based on 16 months of collaborative field research³ and hundreds of conversations with Isthmus residents as well as activists, wind industry lobbyists, investment bankers, journalists, and government and industry representatives in Oaxaca

City and Mexico City. For governmental officials and renewable energy company executives, wind power echoes with opportunity in all directions: from local biopolitical development to climatological aspirations to enhance Mexico's laudable international reputation in carbon reduction. For those challenging wind energy development, or actively asserting an "anti-eolic" position, protecting lifeways and ecological spaces is a more fundamental and immediate concern. Following the development of wind parks across the Isthmus, this article analyzes how a politics of resistance and local perceptions of environmental peril have challenged renewable energy transitions. In the debates and stand-offs that have transpired in reaction to the Mareña Renovables project planned in San Dionisio, a tension has emerged between local perceptions of ecological conditions and environmental knowledge that is gauged to global climate remediation. These divergences indicate distinct ways of imagining and articulating what I call "anthropocenic ecoauthority." Anthropocenic ecoauthority is predicated on a series of experiential, scientific, and managerial truth-claims regarding ecological knowledge and future forecasting in an era of global anthropogenic change. Whether enunciated by resident communities, state officials, corporate representatives, or environmental experts, ecoauthority gains its particular traction by asserting ethical claims on behalf of, and in regards to, the anthropogenically altered future of the biosphere, human and nonhuman.

An Ecologics of Transition

The transition to sustainable forms of energy demands attention to multiple scales of engagement: from the places where energy production, distribution, and consumption physically occur to the logics and ethics that guide energy and climate policies. Anna Tsing (2004) has, among others (Comaroff and Comaroff 2003, Marcus 1995), demonstrated how anthropology's expertise is tested by competing scalar engagements, whether these are specifically located within the rubric of "the environment" (Choy 2011), "energy" (Wilhite 2005, Winther 2008), "globalization" (Appadurai 1996), or something else altogether. In order to create what she calls an ethnography of "global connections," Tsing (2004) has been interested in finding the points of contention, as well as cohesion, in multiple registers of discourse and interaction. She calls these nodal encounters "zones of awkward engagement...where words mean something different across

a divide even as people agree to speak” (2004:xi). Following how environmental movements developed in parts of Indonesia, Tsing finds that self-determination and a codification of indigenous ecological knowledge were combined to engender novel forms of ecoconsciousness and political movements in response to extractive practices. In a similar move to delineate how relationships between state agencies and local populations either facilitate or foreclose the growth of particular environmental identities, Arun Agrawal (2005) describes how “nature” is made available for individual, subjective management and identity formation. As in Tsing’s and Agrawal’s case studies, very specific imaginaries of natural environments and their utilitarian, spiritual, and climatological value echo across the Isthmus of Tehuantepec. In the case of forest management in Oaxaca, as Andrew Mathews (2011) has described, specific forms of environmental and scientific knowledge are produced in tandem, between experts and publics. State authority is accomplished and official knowledge co-produced through alliances between the state and powerful local actors, rendering very particular “stable representations” of knowledge, leaving others diminished (Mathews 2008:485). The ways that environmental logics shape social relationships among and between agencies, individuals, and subjective experience provide an important optic for understanding the cultural and political contingencies of energy transitions in Oaxaca. Equally relevant are the ways in which ecological discourses and practices underpin the reciprocal relationships between state authority, knowledge regimes, and shifting perceptions of “the environment.”⁴

Environmental knowledge and renewable energy transitions are evolving in an era that is increasingly being called the Anthropocene—a time of unprecedented human-generated deviations from our geological, climatological, and biological past (Chakrabarty 2009). Our anthropocenic conditions would seem to compel us to speak across very specific registers of local environmental awareness (such as concerns about local ecosystems and aquaspheric and terrestrial damage) and those that are reckoned climatologically and globally (such as worries about greenhouse gas emissions and carbon contamination) (e.g., Crate and Nuttall 2009). As will be clear in what follows, local environmentally informed responses and those that purport to speak on behalf of a global scale are often conflicted, and their sources of knowledge disparate. What will also be readily apparent is that the politics of renewable energy in the Isthmus are steeped in neoliberal development logics, persuading government

agencies and functionaries to align with the profit seeking interests of renewable energy corporations (Gledhill 1995, McDonald 1999, Ochoa 2001, Schwegler 2008). Rather than focusing attention on the political economy of energy transition, however, I want to signal the ways in which energy futures are profoundly shaped by discourses and practices that assert an ecological and environmental authority; these epistemological and ethical exercises suggest a symbiotic awareness, fundamentally founded in moral claims to protect the biosphere, including humans and other biotic life, now and in the future.⁵

Opportunities

It has become a well-known fact that Mexico's national oil company, PEMEX (*Petróleos Mexicanos*), is in crisis. The company's oil production capacity has declined dramatically over the past several years. Given that PEMEX's profits have provided up to 40 percent of the country's federal operating budget, drops in oil production also mean a significant loss of revenue for the state and nation. Mexico has, however, made significant commitments to renewable energy, with the Ministry of Energy aiming to generate 35 percent of electricity from non-carbon sources by the year 2024. Think tanks and environmentalists alike have heralded Mexico's achievements as one of the major success stories for climate change mitigation in recent years. While the Kyoto Protocol did not demand emissions reductions for the country, Felipe Calderón's administration instituted some of the most ambitious and comprehensive climate change legislation⁶ in the world. However, the advent of renewables and carbon reduction policies have also raised questions about how these projects may disenfranchise local populations and limit their autonomy regarding how ecological spaces and environmental resources are to be used and managed (Howe 2011, Lifshitz-Goldberg 2010, Love and Garwood 2011, Krauss 2010, Oceransky 2009, Pasqualetti 2011). The ways in which state functionaries, private corporations, and local residents imagine the fate of the land, and the wind that gusts above it, are often widely divergent. Even as each position resonates with certain ethical truth claims of protection, the ways that ecoauthority is being formulated and asserted illustrates an often incommensurable rift.

The Mexican government has made substantial investments to determine the future of wind development and renewable energy implementation

in Oaxaca. The Mareña Renovables project, for one, articulates well with the ecological and energy development aspirations of the Mexican state. In its National Infrastructure Program, the Mexican Ministry of Energy (SENER, *Secretaría de Energía*) has lauded the growth of renewable energy resources. For SENER, wind energy, specifically, has several vectors of potential, both in terms of local development and national contributions. The Ministry sees the winds of Oaxaca as:

An opportunity to reduce emissions without compromising national economic development; an opportunity to contribute to climate change mitigation; an opportunity to attract investment to Mexico; an opportunity to develop local capabilities; an opportunity for technological development; an opportunity to increase the nation's global competitiveness. (SENER 2007:32-33)

Opportunity is an important trope for the Ministry as it envisions a path ever upward toward growth and development, the presumed zenith of social prosperity. One of the reasons that “opportunity” resounds so easily in state discourses is that the Isthmus of Tehuantepec is one of the best locations for the production of wind power in the world. It is also located in one of the poorest states in the country where economic development is often prioritized in government programs and politicians' ambitions. The former director of Sustainable Energy for the State of Oaxaca explained to us, for example, “if it weren't for the wind, there would be no development [in the Isthmus].” From the vantage of state officials, the authority and right to promote economic development (in this case, renewable energy projects) is, in part, an ethical calling that will, putatively, bring further degrees of prosperity to the region. The future of the Isthmus is, in this way, married with the development plans of private capital in a tidy moral tale that is often described as “win-win.” Opportunity is articulated across all dimensions of social life and social “health”—from national economic metrics, to local capabilities enhancement, to global climate change mitigation. Federal governmental offices, like SENER among others, are able to denote a series of environmental and economic futures as the proper way forward. Each of these claims for ecological, economic, and technological possibilities are also framed as ethical exercises intended to benefit the “greater good,” whether this is scaled to the Mexican nation or on behalf of the planetary bios. Charting development through future economic and

environmental interrelationships is one way in which the state is able to constitute its own ecoauthority.

Like the federal government, the state government of Oaxaca has underscored the value of wind energy for Isthmus communities, state development, and carbon reduction aspirations. The governor is confident of the benefits to be reaped by *energía eólica* (wind energy), at all levels of society. He describes that:

The initiative and confidence that the business sector has placed in our state [Oaxaca] has made it possible, within the first two years of this government, to see a total of 15.852 billion pesos (about \$1.22 billion USD) invested in the wind sector, making our state a leader both nationally and internationally in the production of clean energy, directly combatting the effects of global warming. (“Mareña Renovables” 2012)

The state government is keen to take advantage of the wind’s potential, developing both its economic and ethical possibilities. Ecoauthoritative claims converge here to foretell future prospects for the region while also promising relief from contaminative energy production. In these narratives, both global and local populations are poised to benefit from the dual environmental “goods” of wind power and liberal development policies. However, the production and consumption of renewable energy draws attention to the uneven ways in which the benefits of climate mitigation and renewable energy development are being distributed.

Wind power in the Isthmus, once it is made electric, is largely dedicated to a system called *autoabastecimiento* (industrial self supply). Electricity generated in relatively remote locations in *parques eólicos* (wind parks) is channeled through a series of substations and high tension wires to offset electricity prices and create a portfolio of green energy consumption for the companies who have contracted to purchase this power from the *Comisión Federal de Electricidad* (CFE). The CFE is a parastatal monopoly that manages all electricity distribution in Mexico, controlling the entire grid. Corporate consumption and privately managed electricity generation projects (like wind parks) are channeled through the CFE’s electrical infrastructure. Currently, in the Isthmus of Tehuantepec, 14 parques eólicos are in operation; all of them (except for a CFE pilot park) are operated by transnational renewable energy corporations and multinational consortiums.

Electricity production in the Isthmus has now reached more than one gigawatt, or enough to power close to one million Oaxacan homes. However, the electricity is specifically not going to homes or municipalities in the Isthmus; it goes further afield and is purchased by corporations such as Coca Cola, Heineken, Walmart, and the baked goods manufacturer Bimbo to offset their manufacturing costs and environmental impact. Electricity is being produced, but not for local populations, who complain vociferously that the cost of domestic and commercial electricity is inordinately high. To redouble this extractive ethos, companies have not built factories or industries in the region, nor have wind parks been able to provide more than a handful of permanent jobs for local people. For average Istmeños, the wind industry gives them few perceptible benefits.⁷ Although wind parks are predicted to “guarantee development,” this rings hollow for many people in the region who have seen many a megaproject come and go (Howe, Boyer, and Barrera in press). Nevertheless, the ecoauthoritative discourses surrounding wind parks provide ethical traction to the expectation that they will both remedy the future of the climate and ameliorate regional socioeconomic deficits.

The Land and Sea Beneath the Wind

The Mareña Renovables wind park in San Dionisio was slated to begin construction in early 2012. It has not. The blades, towers, and docking materials are instead moldering in warehouses awaiting an increasingly uncertain future. The 396 megawatt park, if it were to be constructed, would be the largest single-phase wind power installation not only in Mexico, but in all of Latin America. The project is financed by an Australian consortium (the Maquarie Group), Mitsubishi, and the Dutch pension fund PGGM. It has also been funded by loans from several banks including the Inter-American Development Bank that prides itself on its rigorous environmental and human rights standards. The majority of the 132 turbines proposed for the park were to be located on a sliver of sand bar, the Barra of Santa Teresa, which is also very near indigenous peoples' ceremonial sites.⁸ Equally concerning to local populations is that this is an area where many residents earn their livelihood fishing and harvesting shrimp. The communities of Santa Maria del Mar and San Dionisio del Mar, where the development is proposed, each operate under a communal property system in Mexico called *bienes comunales*.⁹ Since the wind park contract

was signed in 2004, many comuneros who initially agreed to the development are now in opposition. Their argument is that the community was inadequately informed about the scale and impact of the park from the outset. For instance, many believed that there would be only 40 turbines, rather than 132. In June of 2012, the validity of the San Dionisio contract was put to a judicial review. While the fate of the contract continues to be the object of legal interpretation, the local *resistencia* has, with pro bono legal assistance, successfully lobbied for an *amparo* (injunction or staying order) on the Mareña project. As of this writing, the park's installation has been halted and its future development appears unlikely.

Although wind park projects have the enthusiastic support of federal and state governments, rental contracts for them were crafted under somewhat suspicious conditions. Following a USAID study that deemed the area rich in wind resources, and an aperture in Mexican law that allowed international investors to develop Mexican energy resources,¹⁰ the Isthmus became a bonanza for wind power. Putting it in more critical terms, as many in the opposition do, it became the site of a *nueva conquista*.¹¹ In the 1990s and early 2000s, several companies, many of them Spanish, working in conjunction with local agents on the ground, acquired contracts and agreements from individuals and communities. Essentially, the Isthmus was divided into corporate districts controlled by investment interests and development companies; this arrangement also prevented landholders from seeking competitive counteroffers on contracts.¹² People in San Dionisio and other communities in the area that would be affected by the Mareña project often speak of a *despojo de nuestra tierra*, being robbed, or stripped, of their land. They are concerned about losing control of the rights to their land; with 20- to 30-year contracts for turbine and road easements, which are renewable up to 60 years, this seems eminently possible.

Rental payment structures often depend not only on the quantity of land being occupied by turbines and roads, but according to when and with which company a land owner signed on. Compensation rates and rental agreements in the Isthmus vary widely. However, they are far less than rental payments for similar installations in the US or Europe.¹³ In Unión Hidalgo, a woman with four hectares of land under contract said that she receives only 90 pesos (or less than \$7 USD) per month. She explained that she wants to revisit the contract in order to have it coincide with current rates in the region. But, as she said, the legal counsel

required to do so will be very costly. In addition to landholders, communities surrounding the wind parks may also receive a collective payment—from between 0.97 percent to 1.5 percent of profits from electricity generation—to be put toward social development programs. In the community of Santa Maria del Mar, where Mareña has planned to put 30 of the total 132 turbines, comuneros are said to be receiving 1,000 pesos (or about \$77 USD) a year for their consent to the park's construction, channeled through the local municipal authority. Mareña Renovables is quick to note that it has invested huge sums of money in the region: a payment of 20,500,000 pesos (about \$1.5 million USD) to San Dionisio del Mar for the *Licencia de Construcción*. In addition, the company has agreed to pay a fee of 1,866,623 pesos (over \$140,000 USD) to the community once the project has begun generating electricity. From the perspective of the company, each of these sums can be put toward social works (such as schools, health clinics, and road paving) that will help to develop the community and its infrastructure. For many Istmeños, the promised payments are, as they put it, *una miseria* (a pittance) in comparison to the profits the companies are making. Nonetheless, these sums are purported to be local, biopolitical investments derived from ethically correct resource use and carbon mitigation.

If the Mareña project were to be built in San Dionisio del Mar, it would be the first wind park in Mexico to be built on actively managed bienes comunales lands. Given the collective nature of decision making and the open forum required of voting on *comuna* matters, the park has the potential to be a referendum on community control over renewable energy development, rather than one determined by corporate and state development interests (Cohen 1999). As Mike Hulme (2009) and Hermann Scheer (2004) have argued, renewable energy transitions and climate change mitigation measures have the potential to foster “new political, economic and cultural freedom” (Scheer 2004:67). While a wind park located on communal lands could offer a new model for renewable energy implementation, unfortunately, as of yet, it has not.¹⁴ Instead, corruption, manipulation, and threats of violence have been the operative logic. In January 2011, the resistencia against the Mareña *megaproyecto eólico* (wind megaproject) occupied the municipal palace in San Dionisio del Mar and unseated the municipal president, claiming that he accepted bribes from the company totaling about six million pesos (or about \$460,000 USD). Across the lagoon in Santa Maria del Mar, one resident explained that the people of

Santa Maria have agreed to the park only because “the people in Santa Maria are repressed (*reprimida*) and silenced (*callada*).” Concerns about intimidation, threats, and manipulation by local leaders have led to profound suspicions and antagonisms in the region. Accusations of bribes and purchased consent have been central to nearly every conversation that we have had about wind development in the Isthmus; for many, these are symptoms of “traitorous” behavior.

A fundamental critique of the Mareña project is that the Mexican government has failed to fulfill its responsibility, mandated by national and international law, to create a process that ensures free, prior, and informed consent for indigenous communities regarding projects that will directly affect them. The development desires of the Mexican state, along with those of green capital, each resound with the global chorus for climate change mitigation. But these calls become dubious when they are predicated on an apparent willingness to trample constitutional rights as well as more recent international human rights protocols enshrined in Mexican law. The entire contracting process for wind park development, according to the *resistencia*, was undertaken with a “dynamic of dispossession, abuse, lies, and contempt toward indigenous peoples.” Or, as one organization has described it, the development is a “simulation of legality in order to cover up land grabs and environmental damage” (AMAP 2012:2). The gigantic wind park has been tainted by corruption. At worst, it exists as an infamous account of leaders being massively enriched at the expense of the communities they represent. At best, it is an example of green capitalism’s failure to adequately communicate with and compensate the people who live in the economically marginalized spaces where, invariably, the wind seems to blow the strongest.

Damage

If green developers and state agencies have used ecoauthoritative registers to substantiate the benefits of renewable energy—for the Isthmus region and for the world—the *resistencia* has also taken up an ecoauthoritative voice of its own to argue the reverse. Rather than local economic benefit, they maintain, renewable energy is predicated on local environmental damage that will impact both human and nonhuman inhabitants. The *resistencia* asserts that corporate and state developers have failed to present adequate information about the negative environmental consequences of

wind parks and how they will affect livelihoods in the communities where they are located. They question whether the government is actually invested in local communities' right to determine the fate of their land and other elements of the natural environment, including wind and water. Istmeños' confidence in the apparatus of the state is limited, and they often voice suspicions about the government's ability and willingness to provide credible reports of environmental risks and ecological damage.

The heart of the resistance—as Antonio L., one of the key spokespersons, explained—is made up of people who “live by the sea” and live “*por la pesca*” (by fishing). Three communities situated on the lagoon and ocean front have been at the forefront of the anti-Mareña battle, believing that their livelihoods and the environmental future of the region will be endangered by the park. Fishermen from Juchitán de Zaragoza, the municipal capital and epicenter of the southern Isthmus, have joined forces with the opposition because they too are worried about *la pesca*. They are concerned about the effects that the construction phase may have upon marine and lagoonal life and they are troubled about the more ambiguous and uncharted effects of the turbines when they are in operation. Vibration, noise, and light, as every fisherman with whom we have spoken has emphasized, will scare away their catch and, thus, their ability to survive. Both *ikojts* and *binnizá* fishermen¹⁵ believe that the noise generated by 132 turbines will likely affect the fish population, driving them to migrate to other areas. Lights atop the towers are a source of concern, brightening the waters in ways that, again, may make fish depart. Fishermen also described that the turbines will create vibrations that will rattle the sandbar and emanate across the bottom of the ocean and lagoon. Their worries center on the potential environmental damage that might occur if the project is brought to fruition. But their environmental concerns are also directly related to their livelihoods and their ability—and that of future generations—to work with, in, and around the waters surrounding their communities. State and corporate promises of social development and infrastructural improvements to these communities seem, to those in the resistance, both improbable and malformed. In Álvaro Obregón, the hamlet that is the gateway to the Mareña construction site, one fisherman put it this way:

Maybe this company or the government will come in here and pave these roads. Though I doubt it; we've been waiting 30 years and

they never have. Look around you, it is dirt and dust everywhere. But even if they do pave these roads it won't matter. If I can't fish I can't live and if the people of Álvaro Obregón can't fish, they can't live and so we will have to leave here anyway. There will be no one left to enjoy those paved streets.

The boons of development, even if they are made real, appear to be an illogical remedy if environmental harm will spell the end of an important form of human subsistence. As they critique the ancillary effects of noise, light, and vibration, Isthmus fishermen exercise their own ecoauthority to challenge whether wind parks, humans, and non-human species can cohabitate in the maritime spaces of the Isthmus.

Descriptions of environmental damage, such as toxic oil seeping from turbine mechanisms, circulate freely in the Isthmus; however, there are significant differences in opinion as to how much harm, permanent or temporary, has occurred with the rise of the wind parks. The unique geographic conditions of the Mareña park make its environmental impacts difficult to fully estimate. It is, apparently, the only wind park in the world slated to occupy a sandbar. The Inter-American Development Bank's (IDB) Environmental and Social Management Report acknowledged the possibility of short term "economic displacement" from the disruption of fishing during the construction phase of the park. It also detailed the environmental consequences the park was likely to have on marine turtles, jackrabbits, and bats. However, the report did not analyze the long-term impacts of the park's presence on local fish populations. The IDB's assessment notes that the proposed Mareña sites "have been exposed to intense human activities in the past decades which have led to a deterioration of the 'natural' character of the area" (IDB 2011:10). And that "both sites [of the proposed project] have been severely affected by anthropogenic activity" (2011:6). Local fishermen, for their part, also confide that the local fish stock has been on the decline, in part due to pollution and in part due to over-fishing. Placing massive turbines atop the narrow sand bar of Santa Teresa, fishermen believe, will worsen these conditions and hinder their ability to fish for both subsistence and a modest income.

Fishermen's concerns and the ecoauthoritative statements generated by the *resistencia* are not without their ecological and environmental "impact." Their worries about the region's ecological viability are derived from an awareness of aquaspheric limits; or put another way, they are

environmental assessments about how much an anthropogenically injured lagoon and sea can be expected to yield. These concerns are ecologically oriented and they have local traction. As reasoned evaluations made by those who live by and from the sea—as well as for others in the region who find truth in these concerns—these are credible doubts about the potential environmental changes that will follow the park’s installation. In a context of somewhat sketchy scientific reporting, the environmental assertions of fishermen and others may garner more credibility than they otherwise might. Wind industry professionals, bankers, and state officials in Oaxaca City and Mexico City are, probably unsurprisingly, quick to scoff at fishermen’s claims. While the question of whether noise, vibration, and light will result in the deleterious outcomes that fishermen predict is unknown, it does uncover an important contingency. It indexes the difficulty of producing credible ecological knowledge when state and corporate interests appear to be compromised by financial incentives rather than attentive to environmental protection.

The Treasure of the Isthmus

The Mareña Renovables website is a deep digital pool filled with ecologically authoritative proclamations, reports, and results.¹⁶ It has lofty aspirations for the wind of the Isthmus, claiming that “the wind is the treasure of the Isthmus that will bring Mexico into the future of sustainable electric energy generation.” With an uncanny doubling, the website material manages to focus simultaneously on the narrow strip of the Barra de Santa Teresa and its surrounding waters as well as on the greater planetary biosphere, captured under the rubric of climate change mitigation. Echoing neoliberal development impulses as well as biopolitical growth, the wind park is, first and foremost, described as “a comprehensive project investing in renewable energy that promotes economic growth for the state and enhances the well-being of the communities in the Isthmus of Tehuantepec.” “Compared with power generation using fossil fuels,” the website rightly maintains, “wind energy generates minimal impact on the environment, making the construction of wind parks a great option to ensure the future of electricity using sustainable means.” Guarantees of local development coupled with greenhouse gas reductions are laudable to be sure and the company seems keenly aware of the value of this anthropocenic moral authority. Indeed, the very origins of the

Mareña consortium itself, its genesis, are framed in terms of climatological goodwill:

The [Mareña] consortium was formed in order to construct a wind park that would generate clean energy and mitigate climate change and it has worked very conscientiously to ensure that the park that will be built on the Barra de Santa Teresa respects both the natural and cultural heritage of the region and to preserve the fishing activities of the lagoon. This is a world class project that will...generate the equivalent of electricity consumption for half a million homes. Additionally it will avert 879,000 tons of greenhouse gas emissions each year. The park will give the state of Oaxaca the opportunity to be an example of sustainable development, promoting clean energy projects that will, at the same time, promote the economic growth of communities. The project follows the highest environmental standards and has obtained local and federal construction permits.

Adherence to state regulations and observance of “the highest environmental standards” are key elements of the company’s ecological self-portrait. These distinctions are also a means to leverage ecoauthority and bolster the company’s credibility and correctness. Very similar claims were made during a press conference held in Juchitán in December 2012. In the presentation, the social communication team hired by Mareña Renovables detailed the environmental conservation practices the company had begun or would be undertaking. These included waste management, bird monitoring, mangrove protection, reforestation and transplantation, marine turtle preservation, animal rescue, and safeguarding the endangered Tehuantepec jackrabbit (Chaca 2012). In addition, as one of Mareña’s social development team members explained in our interview, there are projects to enhance human “capacity” in the region. Human development and skill enhancement, such as artisanal workshops where participants learn to weave plant fibers, are counted among the ways that the company is seeking to ensure human well-being and regional development.

The company’s plans to promote human social development and protect various forms of life, from mangroves to jackrabbits, offer a comprehensive set of ecological and social remedies. Indeed, balancing local concerns of damage against the global gains of climatological cleansing has been a critical element in positioning the wind park and the company

itself as environmentally upstanding. In an effort to assuage local concerns about fish and shrimp stock, Mareña Renovables developed an interior webpage on its site specifically dedicated to fishing cooperatives. “The conclusion [of] studies and international experience” it states “is that there are no effects on fishing caused by the operation of a wind park.” While it goes on to note that the construction phase will entail a great deal of movement and added turbulence (and turbidity) in the water, the company has sought to make the construction process as rapid as possible, to avoid any unnecessary disruptions. The sentence centered at the foot of the page, in bold, conveys the central message behind these locally focused environmental statements: “The wind park project respects the culture of fisherman.” The information presented is calibrated to diminish the worries of fishermen and others in the area, using globally circulated discourses of environmental protection and scientific authority regarding natural processes. From waste management to the grander claims of “environmental benefit,” the corporation is invested in establishing its ecologically ethical credentials (Jamieson 2011).¹⁷ Positioning itself as an entity that can, and will, foment these sorts of cures, the company marshals a powerful ecoauthoritative voice and position. However, it is also a position that presumes that local communities have faith in the process of permits, impact reports, and the unqualified good of “international experience.” Given the history of the Isthmus and the suspicions that surround the interventions of both the state and transnational capital, ecoauthoritative assertions such as these have not appealed to local communities in the ways that the company has hoped for (Campbell et al. 1993).

The Mareña consortium has carefully employed its ecological authority as it has attempted to maintain equilibrium across different scales of environmental and human health. In one dimension, the park is said to have a “minimal (negative) impact on the environment.” At the same time, a series of biopolitically productive metaphors claim that a “magnificent opportunity to guarantee sustainability” is likewise possible. The company’s portrayal of the wind park emphasizes its positive impact upon ecological and economic conditions both local and global; this claim is possible only through establishing an ecoauthoritative register of environmental impact reports, “international experience,” and greater ethical claims to protect the global biosphere. The question, however, is not so much as whether the many environmental impact reports that were required to license the wind park are correct or not, nor is it a matter of

challenging the veracity of wind power's positive contribution to climatological equilibrium. The Mareña project may in fact portend an empirical good especially over and against the use of fossil fuels. However, it is also important to draw attention to the ways in which anthropogenic eco-authority is being used to ensure the park's development and, in turn, to limit local decision making about the environment's status, potential, and future. While local ecological interpretations and those of corporate and state functionaries often appear to be counternarratives, I would argue that both positions' concerns about fish and culture, as well as translocal worries regarding climatological corruption, are mutually codependent. They each emerge from similar ethical uncertainties and moral possibilities regarding the ecological shape of the future.

The competing scales of ecological remedy appear incommensurate because each of them sound out a different audience and each of them focus on slowing different sorts of environmental distress and harm. Local ecointerpretations are often reduced to naïve estimations, limited by a lack of education or at best predicated on "indigenous knowledge." Even if local ecoauthoritative perspectives and concerns are not entirely disregarded by state agencies or company representatives, local experiential claims are nonetheless limited in their scope and impact. They can only ever speak for the future of generations in the Isthmus and the continuation of fishing and shrimping as a mode of life. The grander claims of the company and the state calibrate their environmental remediation to a global good, not "merely" a regional concern, and thus can leverage somewhat greater ecological moral authority.

Biopolitics in the Anthropocene

The politics of energy transition and climate change mitigation, as they become articulated in their local and global dimensions, are, to put it euphemistically, a challenge. They have often proven resistant to the mechanisms of global governance and protocols, resulting in failed agreements and missed targets. The Isthmus of Tehuantepec is a case that illustrates several tensions that condition energy transitions, from sovereignty claims to dreams of sustainability. It raises critical questions about the future of renewability. For example, will energy transition be determined by the pipeline politics and grid formations of our carbon past or not (Coronil 1997; Mitchell 2009, 2011; Sawyer 2004)? And how

does a particular collective will or voice—either those of local communities or those of state institutions and private companies who purport to speak for national interests and global benefits—come to take precedence? Oaxaca is one of the poorest and least energy intensive states in the country of Mexico, a country which itself has not produced carbon contamination on the scale of the Global North. Yet, both government functionaries and renewable energy companies are fully committed to making the region a sustainable energy powerhouse. There is no inherent incommensurability between renewable energy implementation and economic and social equity. However, as we see in the Oaxacan case, these processes are profoundly shaped by the ways in which ecoauthoritative positions are generated, legitimated, and implemented or, alternately, refused and diminished.

Among residents of the Isthmus, there is remarkably little talk of climate change remediation or a commitment to providing the means for clean electricity generation. Instead, people voice concerns about land, fish, work, and culture. The Mexican state and transnational renewable energy corporations investing in Oaxaca are, conversely, speaking the language of climate change and greenhouse gas reduction. An anthropogenically-altered world would seem to be a condition that demands new mobilizations of biopower.¹⁸ Instead, however, the politics of climate change and the related process of renewable energy transition appear to depend on familiar biopolitical frameworks: improving schools and clinics, providing jobs and roads, and managing populations in the service of development, investment, and growth. These are biopolitical concessions spoken in the idiom of energopolitical shifts,¹⁹ suggesting that indigenous peasants are state subjects whose precarity can be solved through publicly funded material improvements. Those in opposition to the way that renewable energy projects are being implemented in the Isthmus rely on these same biopolitical frameworks. The *resistencia* too calls for the protection of livelihoods to ensure that poor and marginalized populations are not dispossessed of the few resources they have been granted: land and access to ocean and lagoonal fishing. These sorts of biopolitically motivated solutions parallel the logics that have driven development policies for decades. They also reiterate many of the climate change discourses and policies of the last several years, or what Anthony Giddens (2009:8) has called the “convergence” of political and economic stimuli to facilitate the use and distribution of sustainable energy.

Central to the process and politics of transition, as I have argued here, are narratives, policies, and actions that utilize ecoauthoritative claims on behalf of a larger, if not always well-defined, “environment.” For local protestors, their ecological objects are fish, shrimp, and lagoonal spaces. For global investors and state bureaucrats, the greater global climate is positioned as the ultimate ecological objective. Though the targets of ecological harm reduction and environmental remediation are distinct, the ecoauthoritative registers used to advocate for them ring surprisingly similar in their future orientation. As Mike Hulme (2013) has argued in the case of climate modeling science, these discourses become, effectively, a particular way of “anticipating the future” and they “become a prosthetic-to-human moral and ethical deliberation about long-term decision-making” (Hulme 2013:50; see also Edwards 2010, Hastrup and Skrydstrup 2013). As a series of knowledge claims, anthropocenic eco-authority animates policies and protests; these are couched in ethical terms as works and deeds intended to benefit either a planetary bios or the interests of the region’s human population. These are questions, ultimately, of how life will be managed, or not, in a new energetic era.

The biopolitical and energopolitical strategies being deployed in Mexico are confounding, in part because they cannot seem to simultaneously address the management of life at the local level (in this case, the people and environmental “resources” of the Isthmus of Tehuantepec) and life at the planetary level (which requires decreased emissions and transitions to renewable energy). Familiar forms of biopower, as we have understood them—from their colonial manifestations, to those based in Keynesian welfare models, to post-industrial neoliberal constellations—appear inadequately equipped to address the biotic demands of the Anthropocene. The remediations available seem to only reiterate well-worn models of endless growth and biopolitical liberalism. If Foucault (2009) originally formulated biopower as a way to enact and exercise power over and through the basic biology of the human species, the anthropocenic era demands that we ask how biopower, as an analytic, can make the leap to a much greater dimension of engagement. The original sites of biopolitical intervention have been population and the human species, but the energetic, atmospheric, aquaspheric, and lithospheric changes that have been dubbed the Anthropocene demand that our focus extend to life beyond the human.²⁰ Shifts in the planetary climate call for a new ecologies of the present and the future. ■

Endnotes:

¹Joint holders/managers of collective lands.

²System of dominance by local political authorities often associated with nepotism, corruption, and petty tyranny.

³Field research was conducted in collaboration with Dominic Boyer and was funded by a grant from the National Science Foundation, Cultural Anthropology Program (NSF 1127246). Initial research in 2009 and 2011 was followed by extended fieldwork from May 2012 to August 2013.

⁴In a similar way, the congruences between human subjectivity and agentive nonhuman objectivity (e.g., Bennett 2010, Latour 2004, McKibben 2006) have shown how technicians of governance encounter and evoke nature in their expert management of larger biotic bodies or “ecosystems” (e.g., Darier 1999, Luke 1999, Malette 2009).

⁵By “symbiotic awareness,” I refer to the increased recognition that human practices (such as fossil fuel consumption) are having climatological effects that impact the entire biosphere. Whether there is a growing human consciousness of our mutuality and interdependent relationships with other biotic life or abiotic materials is an open question, but “mutualisms” (Gilbert, Sapp, and Tauber 2012) in biology, “ecological thought” (Morton 2012), and object oriented ontology (Harmon 2011) in the humanities suggest new imaginaries of the human condition that question the boundaries of biological or species-specific individuality.

⁶In May 2007, President Felipe Calderón announced the National Climate Change Strategy, instituting climate change mitigation as a central part of national development policy. The Renewable Energy and Energetic Transition law was passed in 2008 requiring that 35 percent of electricity come from non-fossil fuels by 2024, 40 percent by 2030, and 50 percent by 2050. In June 2009, the federal government formally committed to a detailed long-term plan for emission reductions, *Programa Especial para Cambio Climático*, that monitors improvements and establishes reduction guidelines, sector by sector. Wind power accounts for the majority of Mexico’s clean development mechanisms (almost 2,300 kilotons of CO₂ reduction, compared to 900 kilotons through methane recovery). In 2012, before leaving office, Calderón signed the General Climate Change Law that proposed to formalize targets in previous legislation, inaugurate the National Institute of Ecology and Climate Change, and coordinate federal offices to develop holistic mitigation and accommodation planning.

⁷In the community of La Ventosa, a small number of local residents work at the neighboring wind parks as managers, engineers, and technicians. However, most direct employment thus far in the region has been in the form of temporary jobs during the construction phase and benefits for a few property owners and restaurateurs who cater to the handful of Europeans employed by the wind parks.

⁸The small island of Tileme, for example, is considered a sacred site by many ikojts people.

⁹*Ejido* (cooperative land tenure) and *bienes comunales* land tenure models are a legacy of the Mexican Revolution that confer management decisions among members who collectively decide the fate of their land (see McDonald 1999, Nugent and Alonso 1994, Castellanos 2010).

¹⁰NAFTA, the Agrarian Law Reform, and PROCEDE—coupled with the 1992 Electric Energy Public Service Law—allowed local landholders to more easily sell and contract their land to private interests and gave private sector companies the ability to participate in electric power generation.

¹¹The sentiment that wind parks may be signs of a *nueva conquista* is related to the fact that the majority of transnational companies involved are Spanish. Likewise, there is a long history of megaprojects and infrastructural works that have often been associated with colonial or extractive motives, including (long-standing) plans for a trans-isthmus canal, railroads, highways, logging, and hydroelectric dam projects (Barabas and Bartolomé 1973).

¹²In November 2004, Grupo Preneal obtained the usufruct rights to 1,643 hectares (approximately 16.5 million meters squared) of *bienes comunales* land. However, *comuneros* aver that they were misinformed about the project and that signatures were obtained through obfuscation and manipulation. Further, they argue that the constitutional provision afforded to indigenous communities—demanding consultation and prior consent be provided—was not adequately met.

¹³In the US, concession agreements signed between 2005 and 2008 document lease rates from \$3,000 to over \$8,000 per year per turbine across several different US states.

¹⁴There is a proposal afoot to establish a community wind park outside the city of Ixtepec that would offer much higher returns to *comuneros* and fund community development projects. The community owned

wind park has been stalled due to restrictions put in place by the Federal Electricity Commission (see Boyer this issue).

¹⁵Ikojts (or Huave) and binnizá (Zapotec) indigenous populations have inhabited the area for many centuries.

¹⁶One particularly odd fact presented is that cats are responsible for more bird deaths in the Isthmus than are wind turbines. However, this calculation does not account for the effect of an additional 132 turbines, if and when they are made operational. One also has to wonder exactly how this calculation was made; or how does one count the number of killer cats (or birds eaten) in Juchitán?

The website was originally accessible at <http://marena-renovables.com.mx/> but has been deactivated, likely sometime in December 2013.

¹⁷While the website speaks to local concerns, its content is apparently gauged to a global audience. No fishermen we encountered had ever actually seen the Mareña website.

¹⁸The task of Michel Foucault's biopower is the care of all aspects of human life including religion, morals, health, infrastructure, safety, arts, trade, industry, poverty, and so on (see Foucault 2000).

¹⁹Energopolitics refer to the ways in which energetic forces and fuels shape and compel political power in particular directions. For further discussion related to "energopower," see the Introduction to this special collection (Boyer this issue) as well as Barry and Born (2013) on social and material interrelationships, Mitchell (2009, 2011) on the ways in which hydrocarbons have shaped contemporary forms of governance and power, and Ferry and Limbert (2008) on the transformation of energetic materials into national resource making projects.

²⁰Or, as Dipesh Chakrabarty has described it, climate change "requires us to bring together intellectual formations that are somewhat in tension with each other: the planetary and the global; deep and recorded histories; species thinking and critiques of capital" (2009:213).

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Foreign Language Translations:

Anthropocenic Ecoauthority: The Winds of Oaxaca

[**Keywords:** Ecoauthority, renewable energy, climate change, social movements, Mexico]

Ecoautoridad Antropocénica: Los Vientos de Oaxaca

[**palabras claves:** ecoautoridad, energía renovable, cambio climático, movimientos sociales, México]

Eco-autoridade Antropocénica: Os Ventos de Oaxaca

[Palavras-chave: Eco-autoridade, energias renováveis, alterações climáticas, movimentos sociais, México]

人类纪的生态主权：瓦哈卡的风

关键词：生态主权，再生能源，气候变化，社会运动，墨西哥

Антропоцентрический эоавторитетность: Ветры Оахаки (Оахаса)

[Ключевые слова: эоавторитетность, возобновляемые источники энергии, изменения климата, социальные движения, Мексика]

سلطة البيئة الأنثروبوسينية: رياح أوكساكا

كلمات البحث: سلطة البيئة، الطاقة المتجددة، التغيير المناخي، الحركات الإجتماعية، المكسيك