

# 1. Wind

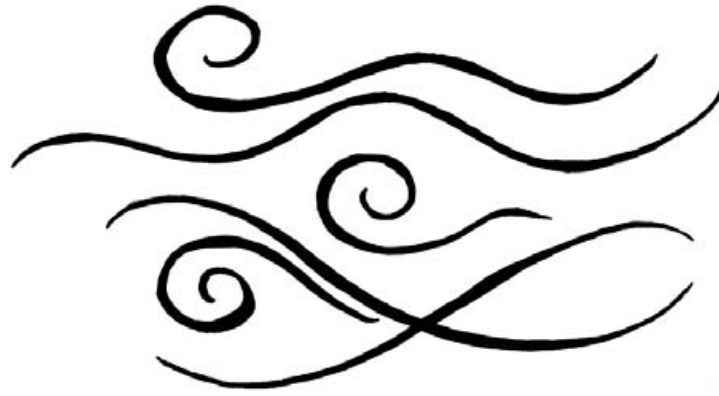
## The Afternoon's Finger

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In some places, the dust never seems to settle. Wind finds its way everywhere in Mexico's Isthmus of Tehuantepec, harassing the blue-black feathers of a wailing grackle, raising small stones from the road, insinuating itself against the blades of turbines to make electricity. Isthmus wind, like wind everywhere, is a negotiation between gases that are compelled across space and time by combinations of heat and cold differentials floating over land and sea, pressured shifts in directionality and potency. This is the physicality of the wind, its material life and its ontological being. Wind becomes contoured by objects in its path—mountains and hills, cliffs and stands of forest, buildings and creatures. It also willfully exercises its force upon these things: carving, cracking, pressuring, and leaving its ventifactual imprints. It draws our attention to points of contact and intraconnective incorporations; it absorbs contexts and conditions, and we often know it best through touching (in) it.<sup>1</sup> Wind may be a relief from the heat, a force to struggle against, or a welcome bluster that blows smoke from our eyes.

The force of the wind has long been domesticated by human actors—through the milling of grain, flying of kites, blowing of ships across the seas. But industrial-scale electricity generation and the sprawl of wind parks are unprecedented, both in the isthmus and in the world. Wind is now being taken differently—not as it has been for millennia, but as a renewable “resource,” or as “clean energy.” As wind is increasingly cast as a valuable commodity,

FIGURE 1.1. An imprint of the wind, ink and paper



and as its powers are rapidly industrialized, so too does it undergo a reformulation of what it is. Newer evaluations and valuations of wind may not entirely eclipse the ways that wind has been known in the past, but there are, nonetheless, undeniable shifts in how wind is seen to work and for whom. “Wind power” is now designated as a force with the potential to redraft the energetic relationship between humanity and the environment; it has been made to assume a responsibility for global climatological care. Thus, while the wind may have always mattered, it has now come to matter in different ways.

For the ancient Greeks, Aeolis was the god of wind; across the isthmus, it is *energía eólica*—wind energy—that has come to occupy lands and sky.<sup>2</sup> By definition, aeolian imprints are those effects of wind upon geological and meteorological phenomena. But the winds that create ventifactual contours also shape people and places. In this chapter, I want to explore this aeolian multiplicity, showing how wind and its powers are formed by land, by desire, by technological management, and finally, by the care wind is afforded by some—indeed many—humans. This is a turbulent space. Wind is changed: from element to condition and from an experience into a resource that generates power and its effects. In the wake of wind, aeolian subjects are formed, and wind itself comes to be produced differently through energy aspirations. Aeolian life gets entangled with cosmologies and subjectivities, but it is equally implicated in ethical questions regarding sustainable development. Such refigurations between material, human, and nonhuman worlds require a crafting of political possibilities that move beyond material determinisms and social structural theories that have underwritten the industrializing logics of the past three centuries. Wind’s very ontology calls for a “deterrestrializing” of thought.<sup>3</sup>

## Pelting

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In the town of La Ventosa, wind is a force that cannot be ignored. It comes in gusts and gales. It blows over eighteen-wheel semitruck trailers, and it causes some varieties of trees to only ever leaf and branch in one direction. It plasters clothing against skin, and it will have you momentarily lose your footing; its occasional calm is usually abbreviated. And it is for this reason, in part, that the town of La Ventosa is now completely surrounded by wind parks, in every direction and at the terminus of every street in this little hamlet.

For Don José, wind power has been a boon. Passing through the carport gate that separates his house from the street, he remarks on the quality of the wind at that moment. Knowing that we are not from the isthmus, he is no doubt certain that windward comments are a good way to begin a conversation. He offers that it is not bad today, just average, as he sets about arranging folding chairs on the concrete slab outside his front windows. Somewhere behind the wall is a young woman, maybe his daughter or daughter-in-law, who is preparing plastic cups full of *atole*, a sugary drink made with corn flour. Don José's home is relatively untroubled by the dust raised by the wind, a dust that saturates seemingly every place in La Ventosa. He lives on a recently paved street. The deed of *pavimentación* was carried out by the local government in collaboration with a wind energy company that has a park just on the border of town.<sup>4</sup>

Don José, a landowner who has leased parcels of his property to the wind power company, appears to be doing quite well. He has a large gate around his two-story home, fresh with paint. He attributes his relative prosperity to his contract with the company and to the monthly income generated from renting the land on which turbines and roads have been placed. Don José epitomizes the developmentalist dreams of wind power in the isthmus; his swelling wealth is imagined to flow in a trickle-down fashion to other, less fortunate residents—shopkeepers, laborers, and others without windy land.<sup>5</sup> Don José openly shares his story, situating it within a longer history of the town where he has always lived.<sup>6</sup> He is notably philosophical and methodical with his words, and his utterances are more ecological than most. After the *atole* has been drunk and we have been through our questions about the rise of renewable energy in La Ventosa, Don José turns us again to the wind. He wants us to know that the wind itself has made him strong. Like everyone in the isthmus, he explains,



FIGURE 1.2. Road, La Ventosa

living with “el norte”—the powerful northern wind that whips across the isthmus from November to February—has an impact upon a person. “El norte picks up rocks, pebbles, and sand, and it hits you in the face. It gets everywhere. And you have to stand up against it and keep working and keep going in spite of it,” he explains. “It makes you tough and unafraid.” Don José is clear about the fact that the turbines on his land and the power of the wind have made him richer. But he also recognizes how the wind has formed him as an aeolian subject, a man who is abraded, contoured, and affectively shaped by wind.<sup>7</sup>

### Air and Breath and Everything Alive

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The north wind whips through,  
in the streets papers and leaves  
are chased with resentment.  
Houses moan,  
dogs curl into balls.

There is something in  
the afternoon's finger,  
a catfish spine,  
a rusty nail.

Someone unthinkingly  
smoked cigarettes in heaven,  
left it overcast, listless.  
Here, at ground level, no one could  
take their shadow for a walk,  
sheltered in their houses, people  
are surprised to discover their misery.

Someone didn't show,  
their host was insulted.  
Today the world  
agreed to open her thighs,  
suddenly the village comprehends  
that it is sometimes necessary to close their doors.

Who can tell me  
why I meditate on this afternoon?  
Why is it birthed in me  
to knife the heart  
of whoever uncovered the mouth  
of the now whipping wind,  
to jam corncobs in the nose  
of the ghost that pants outside?

The trees roar with laughter,  
they split their sides,  
they celebrate  
that you haven't arrived at your appointment.

Now bring me  
the birds  
that you find in the trees,  
so I can tell them  
if the devil's eyelashes are curled.

*Víctor Terán, "The North Wind Whips"*

Víctor Terán is a poet and a teacher.<sup>8</sup> I suspect he would put poet first when describing himself, but he is nevertheless a man who is interested in sharing his words and perspective on the world through both mediums: poetry and pedagogy. Víctor was not someone we heard about through the world of wind parks, but a man whose work had already been familiar to us because of his renown as a literary figure and a proponent of binnizá cultural and linguistic preservation. The place where we are able to meet with Víctor evokes neither of these qualities. Instead it is a bland, somewhat fussy restaurant in Juchitán called the *Café Internacional*. The café, so accurately named, has the somewhat dubious reputation of attracting Spaniards involved in the wind power industry as well as prosperous patrons from around the region. It is almost always a jangle of activity, with soccer games on televisions, wait-staff in prim uniforms, and a security guard patrolling the sidewalk. The *Café Internacional* is also one of the few places in a very hot town that can brag about air conditioning. This seems like an ironically apt climate for our talk with Víctor, which would ultimately speak of air, breath, and everything alive.

“You know, the wind has many meanings,” Víctor begins. In Zapotec the word is *bi*.<sup>9</sup> And *bi* is what signifies the air and the breath. It is the soul of a person. And it animates everything. Linguistically, Víctor explains, the concept of “*bi*” is used to name all living beings. And it is for this reason that nearly all of the binnizá words used to designate an animal or a plant begin with the prefix “*bi-*.”<sup>10</sup> Including *binnizá* (the people) itself. *Bini* represents a seed, its reproductive essence. And so it is possible to say that “*bini*” is the soul or the seed of a person, their inherent substance. *Bi* is an enlivening principle. It names the pig that makes the sound *bibi*, and it designates the worm, the maggot that crawls from dead flesh: *bicuti* is the creature that is both a product of spoiling meat and one that furthers decomposition of the flesh. “In this way,” Víctor explains, “one can see that the Zapotec language is very metaphoric.” But more importantly, he wants to emphasize, the concept of “*bi*” is inseparable from language itself; “*bi*” is etymologically inherent to expression in the same way that it is fundamental to life. “Without air, there is no life, and for this reason we use this prefix, *bi-*, for everything. It is very interesting, and it is very important,” he continues, “because ‘*bi*’ is the soul, the air, the breath, and the wind as well. It is a bundle of meanings.” *Bi* is more than a prefix; it is a repertoire of sensation and being.

Víctor depicts it plainly. “Without the air, we would not exist. Without the wind, we would not exist.” The first animates, and the second is animated.



Cosmologically, there is a trinity of winds among binnizá people: two from the north and the other from the south. The first, *Biyooxho'*, the old north wind, *el viento viejo*, should not be mistaken for a feeble wind. It is, in fact, the opposite: the wind that made the world through its astounding force, its primal intensity. *Biyooxho'* is the northern wind with an ancient genealogy. At the beginning of time, Víctor explains, *Biyooxho'* “pushed the world into existence.” A less storied wind, but one that all istmeños know equally well is *Biguiaa*: the northern wind that is quotidian and less dramatic but still insistent when it blows. And finally, there is the southern wind, *Binisá*, the wind of the sea and the water, a revitalizing and gentle wind that soothes the heat of the day. It gathers across the Laguna del Mar Muerto, just on the edge of the Gulf of Tehuantepec. Bi, air/life/breath/wind, is here married to *nisá* (the breeze) and in this union becomes moist. *Binisá* is often described as a feminine wind, a more tender sensation. Each of the northerly winds is inversely described as *masculino*. The gusting northern wind, *Biyooxho'*, is also at times called “the devil’s wind.” Its heat and intensity make it seem as though it has come straight from Lucifer’s lips. The winds of the isthmus accrue many powers of becoming and enacting, and it is wind and air that link body and cosmos, humans and deities.<sup>11</sup> “It is true,” Víctor concludes, nodding, “there are many kinds of wind.”

Wind is captured in a conversation and in cosmologies about how the wind makes people and what people make of the wind. Partly an oscillation of gases and partly an insistent reciprocal exchange between air and beings, the wind’s relationality is essential. This kind of relationality, Karen Barad reminds us, produces entities as phenomena.<sup>12</sup> It is in these inseparabilities and intra-acting agencies that things and forces are configured as subjects or objects or *relata*. It is the wind’s relationality that performs the work of creating aeolian subjects, who live in, from, and through the wind in its various formations and effects.<sup>13</sup> With attention to the ways that humans and our coinhabitants are drawn into wind and given life through its quieted form—air—we can pose the question, as Luce Irigaray has, as to whether “we can live anywhere else but in air?”<sup>14</sup> Like the air out of which it is made, wind thrives on interplay and incorporation, into and against, bodies. Captured by the meters of energy production but still residing in the domains of myth, legend, and experience, wind is wound into aeolian matters and their subjectivities.

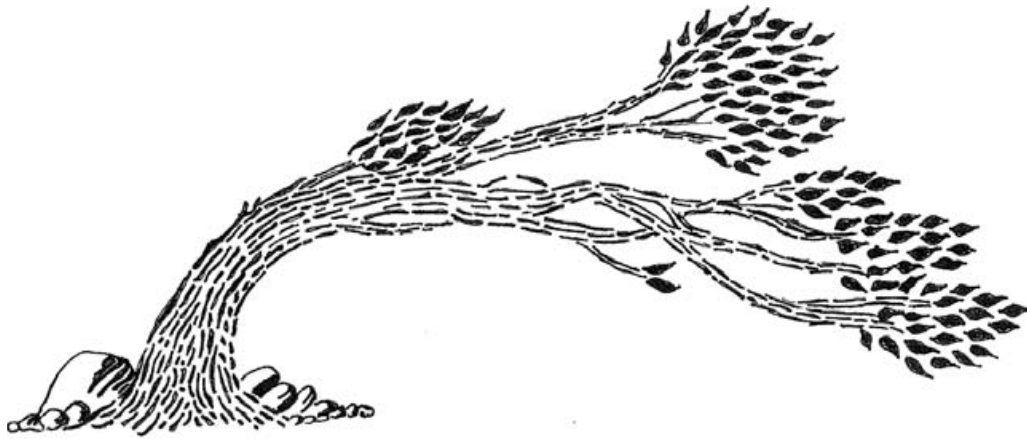


FIGURE 1.3. Tree and wind interacting, ink and paper

### Industrial Densities

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Whereas Víctor described the wind in terms of its sensations and its animating significance, the technical capture of wind has far more cartographic and quantitative explanations. In the early nineteenth century, a team of surveyors in the isthmus found “an almost incessant wind [that] either blew down or inclined obliquely the landmarks.” It was a wind that caused their instruments to “oscillate violently” and disturbed their observations. And with this wind came a certain haunting. With the exception of a few moments before the rising of the sun and a few after its setting, the surveyors’ chronicle continued, “a dense flickering vapour hid from view the objects which served as guides, whilst the refractions, especially the lateral ones, produced the most strange illusions.”<sup>15</sup>

Far less enchanted than the nineteenth-century depictions, the 2003 report crafted by the US Department of Energy’s National Renewable Energy Laboratory (NREL) sought to graph the quantitative details of how wind pushes its way through the isthmus. Barometric pressure differentials between the Gulf of Mexico and the Pacific Ocean are the essential source of wind in the isthmus. South of the Chivela Pass, passing through a fissure in the Sierra Madre, air from the Bay of Campeche flows from the north to the Gulf of Tehuantepec in the south. This is where wind blows its fiercest. Winter winds regularly acquire speeds up to fifty-five miles per hour, sometimes reaching tropical storm or hurricane force. Whereas Víctor associated the powerful northern wind with the origins of the world, the NREL report diagnoses this northerly flow in terms of pressure gradients. The Interamerican Development Bank (IDB), whose loans have been instrumental to the



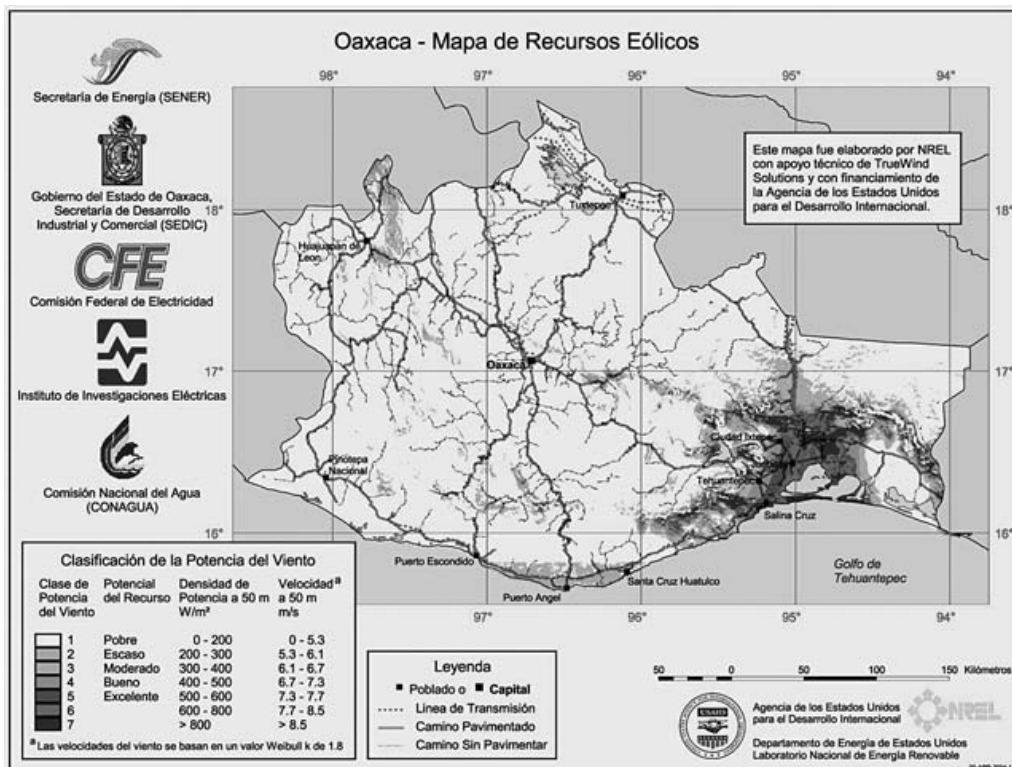


FIGURE 1.4. Wind resource map of the Isthmus of Tehuantepec

construction of many wind parks across the isthmus, finds the richness of isthmus wind using more terrestrial aesthetics, noting that the region is “a natural tunnel” for wind. Because of this, the bank can boast that the isthmus is “one of the best wind resources in the world,” clearly “an ideal place for wind energy projects on a grand scale.”

The North American company TrueWind Solutions and NREL utilized a computerized mapping system and GIS (Geographic Information Systems) software to track the wind of the isthmus. In conjunction with other entities—such as USAID (the United States Agency for International Development), the Mexican Secretary of Energy (SENER), the Federal Electricity Commission (CFE), and the Oaxacan State Government Secretary of Industrial and Commercial Development (SEDIC) among others—a vibrantly colored map showing the wind resources of the isthmus was brought to life.<sup>16</sup> Meteorological stations that tested wind quality were located on the Pacific Coast (in the port city of Salina Cruz) and inland (at Ixtepec). Station data was then assessed by wind power developers—such as the Spanish company Gamesa and the US-based wind energy company Clipper. The Federal Electricity Commission also weighed in on the information. With all expertise summarized, the report explicitly notes the proprietary nature of the data

it exhibits. “Due to confidentiality agreements,” it states, “we are not able to show the actual wind resource at the sites or provide the exact locations of the sites.”<sup>17</sup> The derivation of the data and the precise qualities of wind in a given place and time have become questions of property, both present and future. Wind is re-formed—through numerical exposition and proprietary knowledge; it has become a commodity.

Seven wind power classifications color the wind maps of Oaxaca. Each of these categories is enunciated according to its “utility-scale application,” ranging from “poor” to “excellent.” Locations with an annual average wind resource greater than four hundred watts per square meter, or approximately seven meters per second—at an altitude of fifty meters above ground—are considered best for utility-scale uses. The measurement’s height is important for the accurate accounting of wind speed, as are the effects of entities that might block, hinder, or tamper with its flow, such as trees, buildings, or towers. There are many material considerations, but NREL charts an optimistic cartography of the isthmus. Wind resource maps and other details contained in the NREL report allow companies and officials to identify prospective areas for wind-powered electricity to be generated. But assessments of the wind are also, inherently, a calculation about the land beneath it.

A little more than 7 percent of Oaxaca’s total land area (91,500 square kilometers) is considered to be good, “windy land.” The best wind resource areas are said to be concentrated in the southern reaches of the isthmus. High-quality winds for electricity generation bank from the southern coast, spanning sixty kilometers to the north and then another sixty to eighty kilometers from east to west: a cube of rich air. Surveyors have assessed that 6,600 square kilometers of Oaxacan land has “good” or “excellent” wind passing over it, with approximately two-thirds of that deemed to have “excellent” wind. According to some estimations, Oaxaca’s windy land could support up to 33,000 megawatts of installed electrical capacity.

Knowing this about the isthmus wind, it is not surprising that Thomas Mueller, a German executive at a wind power company that has parks across the isthmus, was explicit in his response when we asked why companies such as Mueller’s would stake so many billions of pesos on capturing the isthmus wind given the area’s ever-fraught politics and the well-circulated narrative that the region is “ungovernable.”<sup>18</sup> Given the territory’s reputation for insurrections at every scale, from political upheavals to roadblocks, infrastructural investments such as those laid down by Mueller’s company



FIGURE 1.5. Turbines and high-tension wires, La Ventosa

seemed, at best, a risky proposition. Although our question to him had to do with political conditions rather than ventifactual reasoning, his answer mapped immediately back to aeolian coordinates. “We are in the isthmus,” he said plainly, “because it is the best resource in the country.”

Reiterating what we had heard from other energy officials in the Mexican government, he explained, “Mexico has no subsidies for developing renewables in comparison to the US and Europe. So the development only becomes attractive when there is a *factor de plantas altas* [higher production quotient]. European levels of wind wouldn’t be sufficient here.” A report generated by Santander, the international investment bank with more financing in the isthmus than any other, also notes an important quality of the isthmus wind: its daytime quality. As opposed to northeastern sites in Mexico, where wind favors the night, the isthmus wind is diurnal. Therefore, the bank’s accounting surmises, the available profit from electricity generation is higher in the isthmus than in the northeast because daytime usage rates are higher due to demand.<sup>19</sup> The attraction of the isthmus and the conditions that make its terrain and skylines sites of dense capital investment are due to the high production possibilities of its wind, in terms of both when and how much it blows.

In this estimation, the wind is a calculus, a quantifiable resource of a particular kind, that is harnessed for capital accumulation, growth, and profit. Wind can be prospected, and prospectuses can be made on and about it.

## Caring for Wind

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The qualities that have made the isthmus wind attractive for investors and developers of renewable energy have also made that wind an entity that demands protection, that demands defense, and that demands to be loved. The Assembly of Indigenous Peoples of the Isthmus in Defense of the Land and the Territory has protested vociferously against wind parks in the isthmus. These battles have been fiercely fought in both local actions and translocal responses.<sup>20</sup> How the assembly understands the wind and how they believe it has been appropriated are put simply and repeatedly in their statements and manifestos.

*¡La tierra, el mar, el viento, no se venden se aman y se defienden!* (The land, the sea, the wind, [they] are not for sale, [they are to be] loved and defended!).

On another flyer, on another day, amid months of protest:

*¡Mareña Renovables, entiende nuestro viento no se vende!!!* (Mareña Renovables, understand that our wind is not for sale!!!)

Echoing the calls of environmental protection that are familiar in the global North and elsewhere, the assembly has vowed to safeguard the wind, to affectively embrace its vulnerability as well as its powers. As Maria Puig de la Bellacasa reminds us, caring is an ethically and politically charged practice; it calls upon an affective state and a mode of engagement that comes to form an ethico-political obligation.<sup>21</sup> Here, the wind of the isthmus is a frail object that requires human care and attention, protection and love.

Inasmuch as care becomes a form of practice to enable a relationship with the wind, in equal measure the assembly indicates their commitment to de-commodify the wind and the land beneath it. For the assembly, wind is not a resource that can be sold, and they have explicitly disavowed the notion that wind can be captured under the regime of private property. Against the prevailing neoliberal philosophy that underwrites much of Mexico's development apparatus, including wind power, the assembly refuses a monetization of the wind. In so doing, they likewise refuse to take the wind as a transactional resource. Yet in caring for "our" wind, there is also the sense that it is an entity that can be secured. Despite its resistance to enclosure, wind is here held and claimed, as "ours."<sup>22</sup> Wind, then, may repudiate captivity in capital terms, but it does not eschew human stewardship. Wind may not be a commodity or even a resource, but it is nonetheless discursively animated in the

domain of human interests. For the impassioned critics of the wind parks, the isthmus wind fully belongs to an “us.” It is “ours.”

### Aeolian Possessions

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Facing an audience of several hundred seated in the collective meeting hall in Ixtepec, Sergio appears primed to give his report.<sup>23</sup> Having left his native Spain, Sergio has been advocating for years that the *comunidad agraria* in Ixtepec be allowed to build a community-owned wind park.<sup>24</sup> Already several hours into the meeting on a Sunday morning, it is Sergio’s task to rouse sentiments, and ultimately action, despite the swelter of the day and the room’s overcrowded and poorly ventilated interior. The aging comuneros—communal landholders of approximately 114 square miles of Ixtepecan property—have gathered for another round of debates about the wind: how to create a community wind park on comuna lands. Sergio’s invective hurtles over a sea of cowboy hats that are being used as fans for weathered and perspiring faces. The electricity commission, CFE, Sergio announces, continues to block the farmers’ plans to construct a community-owned wind park on their collectively managed land. Worse still, the comuneros’ most recent attempt to break down the bureaucratic barriers that prevented them from building their wind park had not worked. But the fight is still worth waging. “The issue,” Sergio shouts, “is that the rights that are being violated here are the rights that are being violated in communities across Mexico. It is not only in Ixtepec; it is in all these communities. Because CFE, basically, what they are saying is, ‘You don’t have a place here, even though it is your land, even though it is your wind, and even though it is your (electric) substation . . .’” Taking a breath, he continues, “You don’t have a place. All of this is for the multinational companies.”<sup>25</sup> Shifting in their seats, the comuneros appear taken with Sergio’s words. They too know that their wind needs to be defended against foreign capital brought by the *gachupines* (Spanish) and gringo (North American) interlopers. “Our wind” was shaping into something that could be stolen because it was becoming something that could be possessed.

To whom, or to what, does the wind belong? For the governor of the state of Oaxaca, the wind, or more accurately, *el aire*, was “public property”—a resource to be distributed across Oaxaca’s citizenry through the mechanisms of development, job creation, and electricity. For many of the residents of La Ventosa, wind was held with more uncertainty. When we polled the



inhabitants of this little town, many of them expressed their belief that the wind appeared to belong to the wind power companies, at least more so than to local residents. It was an energy supply that was being extracted. It was not a public good but a privatized one. Wind had exceeded the grasp of the people, its material figure instead claimed by the rotors of company turbines. But wind among La Ventosans was also never fully tamed. For most of them, wind belonged to God. Or to no one.<sup>26</sup>

### Vitalities

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The blades of a turbine both capture and displace wind, seizing its kinetic energy while also shifting its direction in centrifugal patterns back toward the sky or the earth. As the turbines lumber through their patterned acrobatics, there is a sonic dimension to the interplay between the wind and blades. A massive respiration and then stilled quiet. Picking our way through the brush and weedy patches between the turbine towers on a January day, we finally come upon what our host wanted us to see. Fernando Mimiaga Sosa is, at the time of our meeting, the director of sustainable development for the state of Oaxaca, and he, perhaps more than anyone else, has influenced the trajectory of wind park development in the isthmus. He is quite well versed, very well connected, and definitely a character. Fernando is someone with whom we will have many conversations.<sup>27</sup> But for now, during our first full day together, Fernando has asked his driver to pull over at one of the wind parks outside the town of La Venta. He called ahead to one of his friends to be sure that the security guard would allow his little Toyota sedan through. We are up close to the turbines now. They are immense and imposing and impressive, and they have a warning sign on them: DANGER.

Fernando, however, wants to show us another kind of danger, and that is the impact of wind upon crops, corn in particular. After some glancing around, he finds the sort of specimen he is looking for, a tiny exemplar of a corn plant, with the characteristic leaves, but maybe half the size it ought to be. The stalk itself is what he is particularly eager to demonstrate. Bending down, he shows us with a flattened hand how stunted the stalk is, short and ungrown. A failed plant. “This is what the wind does,” he assures us. “It won’t allow these plants to grow to their full height, to mature. It blows them over. And corn is supposed to be tall,” he adds, gesturing upward. “And this one, you see, is *chiquito, muy muy chiquito* [small, very, very small].” It is true. While corn production has decreased in importance for isthmus agriculture,





FIGURE 1.6. Turbine tower with DANGER sign

that fact is, at least for what Fernando intends to communicate, beside the point. For him, it is the wind that has diminished the corn plant, its force and velocity have hindered its growth.

And there is something special about corn. It is emblematic of the Mexican national imaginary, from precolonial times to the present. Corn is present, ingested, and (literally) incorporated into the national body everywhere in Mexico essentially every day. So when Fernando shows us the pathetic state of corn here in La Venta, he is assuredly gesturing to something else: a deprivation and a lack of economic growth in the region that ought to be remedied. And this, we will see, is part of his mission in the industry of wind-generated electricity. The wind, which has stunted the corn, can now be redeemed; it can be made to grow the economic potential of the isthmus in the form of wind parks. Later, back in the Toyota, Fernando concedes that wind development projects in the isthmus “began without adequate legislation and without the grid and necessary networks in place.” “But,” he emphasizes, “the most *hermoso* [finest/loveliest] thing is the wind itself.” He

explains, “The wind in the region continues to go on. Excellent. If we compared this wind to a gem, we would have to call the wind here a ‘diamond.’ It is the wind that is guaranteeing development; if it weren’t for the wind, there would be no development.”

The wind, for Fernando and certainly others, contains the riches necessary to transform the isthmus from a place of limited economic horizons to a place of developmental triumph. He recognizes that boons like these, like wind power, must be managed in order to sow the collective good. But for many others in the isthmus, apprehensions surround the turbines that have come to populate their lands and territories. And while corn may be the metaphor and the material entity that Fernando is using to make his case for the benefits brought by wind parks, another comestible concern is beginning to emerge in the shadow of the turbines.

In January 2014, *Las Noticias*, a major daily newspaper in Oaxaca, featured a story about “machines that eat the air.” The journalist interviewed two brothers, Emilio and Juan, who counseled the reporter on several changes that they believed had been caused by the wind parks. “Before,” Emilio described, “the nortes [northern winds] of the Dead Sea zone were tremendous.” He went on,

I don’t know, maybe they were 150 kilometers per hour or so, knocking down trees and houses. . . . But now that they have installed the wind parks in Salina Cruz they are much less. And the shrimp and fish catch has been reduced. They say that now there is much more sorghum, corn, and watermelon because the wind no longer whips the plants, but the fishing has gone down; its production has reduced for the same reason, because there is no wind.

Emilio elaborated this condition further.

When the norte is here, it jostles the seawater [making it turbid] so that the shrimp, fish, and crabs don’t know whether it is day or night, and so they spend the whole day floating [near the surface]. Then we can go out during the day and we catch them, and we go out at night and we catch them. But now, now that the water is clear, they don’t come out. And before, the norte would last a month, and now it is only a few days and it is gone. So we believe that what we had before here with the wind, now it is being absorbed by the turbines.

When the norte is at full force, the water itself is changed. And for fishermen such as Juan and Emilio, the helpful powers of the wind have been

altered and diminished by the turbines. Has the norte been absorbed into the blades of the *aerogeneradores*? In a metaphoric sense, it has; the powers of the norte have been diverted. Where it used to serve fisherfolk's wants and needs, the wind now gives itself elsewhere, to the industrial production of electricity for corporate consumption. Where the wind once allowed these fishermen to contravene the usual state of creatural awareness and thus easily pluck shrimp, fish, and crab from the sea, now that has become less fruitful. Another excavation has been put in its place: reordering the wind to serve electrical desires rather than the watery wishes of isthmus fishermen.

Whether or not the turbines in fact "eat the air" is one question, but the fact that they are believed to is indicative of other questions and concerns. Turbines occupy a semiotic field, and their towers function as a location for anxieties and apprehensions. Emilio and Juan might have claimed a different origin for the changes they observed in the water's color and clarity. They might have just as easily pointed to climate change writ large: how it is altering weather patterns, including the direction and duration of the wind. But they do not. And it is not likely for lack of knowledge about the fact of a changing climate, for this is a fairly common discourse in the isthmus. The reality of *el calentamiento climático* (climate warming) and stories of how *el clima ha cambiado* (the weather/climate has changed) are the subject of conversations among those who work the land and sea in the isthmus.<sup>28</sup> Instead of man-made climatological warming, the changes in the wind seem to be even more directly produced by humans: by machines, which are powered by capital, that appear to eat the air. Unlike the abstractions of climate science and rising seas, the blades of wind turbines make present certain kinds of materiality. They are there for all to behold and to serve as a reservoir of climatological, maritime, and biotic unease. The "white giants," as they are often called, form an apparatus that establishes this climactic reality in ways that the rather ineffable designations of "climate change" or "global warming" cannot.

Passing through the central square of Ixtepec one afternoon, a billowing children's bouncy castle on our left, a girly-magazine stand on our right, our friend Raul Mena wondered aloud. Had the winds in the isthmus changed? He was concerned, he said, about how the turbines and the rapidly reproducing tracts of parks might alter the ways in which pollination would take place. For those plant species that required seed dispersal and pollination on the back of the wind, how would they survive or how might they perish? And, of course, there was the question of birds, which were also responsible for



FIGURE 1.7. Sorghum seeds

spreading seeds in numerous directions and flows. How might their routes change, or how might they be harmed over time and irreparably?<sup>29</sup>

Luis Zárate is a man who has become quite famous for his art. He builds his aesthetic works from the environment he inhabits, depicting in organic forms the intermarriage of water, soil, and biota. He, like Raul, was concerned about the wind parks in Oaxaca. He understood well their purpose as climatological remedy, but he was uneasy about them. Disputes about land and money he understood as a given. But what was more mysterious and poignantly troubling for him was how plant species' reproductivity would be transformed. Seeds carried through waves of wind—"anemochory," the most basic form of seed dispersal—might cease to be, he worried aloud.

How wind is changed by turbines and how wind has determined the fate of plants, animals, and humans across the isthmus, in the form of stunted corn or lost fish, reveal elements of the wind's powers. These are concerns about the wind, in and of itself, but are nevertheless linked to human and other-than-human intrarelations. Wind is an entity that does something for humans—allowing for a generous catch. It serves nonhuman species as well, propagating plants and allowing for their flourishing or not.<sup>30</sup> And in this

sense, the wind signals a coeval resonance among humans and their others, an elemental medium of relationship.

### Ending (in) the Wind

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Air in motion may be barely felt, or it may overturn and mangle homes, bodies, and machines. From some cosmopolitical viewpoints, wind is life and spirit. Víctor Terán knows *bi* (air/breath/wind) as life force, feeling, respiration, which is fundamental to all life, animal, human, and otherwise. Experiencing the wind as a comingling with *bi* holds a sublime appeal: it makes wind/air/life whole, integrative, and mutually evolved. But in the isthmus, wind is also often known as a force unto itself. It is the *animatum* in the case of *bi*, or it lashes rocks against skin and hardy spirits. It forms aeolian subjects, enriching them or training them to endure future pains. It is routed through lives. For agents of government and industry technicians, wind is a quantification: a commodity and a metric achieved through the grand schemata of science and its calibrated gauges. Wind can be divided and distributed in more or less equitable ways. For some people, wind can belong to the companies; it can be owned. And for others, it belongs to God or to no one. It is patrimony; it is to be protected, given rights, cared for. It has volition, a material conative will: the ability to change people's fate, fetter the growth of plants, or conversely, have them flourish.

A kinetic commons such as wind is motile and dynamic, unsettling and unsettled. But wind is also that which touches us. Wind exists as a relationship among humans who negotiate value, access, and outcome. Perhaps more importantly, wind creates a relational domain between living and non-living beings, and it embodies a refusal of separation.<sup>31</sup> Wind is kinesis and air as interactive forces—between heat and pressure, to be sure, but also in relation to the world (or worlds) it touches. It is known through its contact and its fleeting connection. These kinds of relationalities, which produce a deeper sense of inseparability, may allow for a different way of knowing material life. Wind is this kind of matter. Through the blades of turbines or felt across the skin of those who inhabit the places where it blows, wind has a place. Potentially a very significant place in redrafting the possibilities of ecohuman futures in the Anthropocene.

In this chapter I have drawn out the ways that wind is multiple. In the coming chapters that multiplicity will be elaborated through the ways in which wind power, as an energetic force, becomes a nexus around which

land and livelihoods, politics and patrimony, are gathered. Turning our attention to the huge wind park proposed by Mareña Renovables, we are also turned toward how the multiplicity of wind becomes directed, routed, and channeled for particular purposes with certain environmental and economic outcomes. As wind becomes captured in the apparatus of renewable energy, it likewise becomes swept up in grander environmental discourses as well as local struggles for recognition. And as wind becomes domesticated in the revolutions of turbine blades and is moved and shaped by human intervention, so too does it push and transform the very places and people with which it comes into contact.