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# Wind Energy Isn't a Breeze

Farmers near wind turbines face (sometimes literal) headaches.

By LEAH MCBRIDE MENSCHING

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The sun sets behind wind turbines in Fenton, Iowa.

Joe Raedle/Getty Images

Nearly 175 years ago, Lana Wanders' ancestors settled in what would soon become the state of Iowa. The farm served as a stopping point for people heading west who had run out of money. Her forefathers would rent a piece of land to them for up to five years, so they could farm and earn a living to pay for their continued journey. "It was a handshake agreement," she says while we sit on the porch of her classic white farmhouse, tucked just off a sloping gravel road between Pella and New Sharon in the southeastern part of the state.

But the land deals in this area today aren't so straightforward and honest, she says. Wind development company RPM Access is currently constructing one of MidAmerican Energy's newest projects, Prairie Wind Farm, less than two miles east of her home. Residents did not have the opportunity to vote on the project, which was approved by the Mahaska County Board of Supervisors. When residents have no recourse, and no government body to turn to for representation, it's frustrating and even kind of scary. (MidAmerican Energy declined to comment on this story.) "We have nothing to fight with," she says. "We don't know where to go, we don't know what to do. To us it seems like they just kind of slid in the back door and there's just nothing we can do about it."

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According to the American Wind Energy Association, more than 36 percent of Iowa's in-state electricity production comes from wind, one of the fastest-growing energy sources in the country. The state is first in the nation in wind energy as a share of total electricity generated, second in installed wind capacity, and second in the amount of money landowners make in lease payments, at more than \$10 million a year. Iowa's leadership in renewables dates back to 1983, when it became the first state to adopt a renewable portfolio standard. The policy set hard targets for renewable energy in the near- and long-term, and was signed by Republican Gov. Terry Branstad at the beginning of his first term. Branstad, now President Donald Trump's ambassador to China, went on to serve as governor for 22 (nonconsecutive) years. Wind development emerged and then accelerated under the leadership of Branstad as well as Democratic Govs. Tom Vilsack and Chet Culver, who both served in the interval between Branstad's two gubernatorial stretches. In 2001, wind generated about 488,000 megawatt hours of electricity in Iowa; by 2016, that number jumped to roughly 20 million megawatt hours, according to the U.S. Energy Information Administration. It has received wide bipartisan support, championed by progressives as a much-needed development in the renewable energy sector and by conservatives as a boon to big business.

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There's a common theme in feel-good news stories about wind energy: a renewable energy source coming to the rescue of poor rural folk in the form of rent payments and tax revenues. But life on the ground around the 4,000 turbines in Iowa is complicated, and the experiences of the people living near them varies, usually depending on how close to turbines they live and work, the size of the wind farm, and who built it. The rapidly changing pace of technology, a dearth of regulation, and close ties between for-profit energy companies and state and federal governments handing out billions of dollars in production tax credits has created a system in which residents often feel left out of what's happening in—sometimes literally—their own backyards.

From the outside, it looks like turbines are popping up in the middle of nowhere. But for those living in the country, the turbines loom over their properties, replacing their bucolic homes with an industrial energy landscape. And fields are their workplaces. A turbine doesn't affect just the few acres surrounding it: It has an impact on the entire farm it sits on, as well as neighboring farms.

Building and maintaining a turbine requires heavy equipment that damages tiles under fields, which affects drainage in surrounding fields. Drainage problems can hurt crop yields and even stop a farmer from being able to plant in the first place. A turbine also makes it more difficult, or sometimes impossible, for crop dusters to fly over fields around it in order to spray pesticides that protect their crops. Farmers also have concerns about their own safety, and the safety of the people they hire. Reports of turbines catching fire and throwing ice, even blades breaking off, cause farmers to worry. There are also issues of shadow flicker and the noise

turbines can make, which aren't just annoying—they can even make people feel sick. (There isn't yet much research on the potential health effects of living near wind farms, and some suggest “wind turbine syndrome” might be psychogenic—though that wouldn't mean people aren't experiencing real symptoms.)

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Farmers feel outnumbered and outfinanced by powerful energy companies, government officials, and green energy advocates, all of whom they say have incentive to ignore their problems. The key word here is *setbacks*, which is the distance turbines must be kept from occupied buildings, property lines, and roads. Farmers say if they had input on setbacks or could vote on where turbines were built, many of their problems would be minimized or eliminated altogether.

When they try to express concerns, farmers often face an accusation from those living far away: that they are climate change deniers. Terry McGovern, a professor of management at Clarke University in Dubuque and retired U.S. Air Force lieutenant colonel, has grown frustrated by this dynamic. He says that if you ask, “‘Does it work? Is it efficient? Does it make sense? Is it our best option?’ ... you're branded as someone who's anti-environment.” Though he is an independent voter, he says that questioning wind energy means that “people will associate you with

Republicans or with the Trump campaign, anti-environment, [but] nothing could be further from the truth.”

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McGovern lives on an acreage near three turbines and says he was very supportive when he first heard of plans to install wind turbines in the area. McGovern became skeptical, however, after a neighbor came to him with concerns about a wind developer’s proposition. He started researching the industry, and the more he learned, the more concerned he became. He now helps residents organize against wind companies.

More than 97 percent of wind capacity in Iowa comes from large project owners, such as utilities and wind development companies, according to the AWEA. The remaining wind capacity—less than 3 percent—comes from community wind farms, in which a group of landowners get together and put up as many as 10 turbines. Sometimes farms with high energy needs, schools, or businesses will set up one- or two-turbine wind operations, according to Tom Wind, who does pre-engineering and analysis for wind projects and owns Wind Utility Consulting PC, based outside Jefferson, 60 miles northwest of Des Moines.

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For residents, big wind companies often don't feel like neighbors; they seem more like overlords. Wind energy news stories tend to use the word *lease*, but in reality, "They want easement to your whole farm," Randy Roghair says. It is typical for wind developers to lease the land a turbine stands on, as well as have easements that give them additional rights. Easements usually include giving the developer the right to lay cables that connect the turbine to substations and the power grid; the right to use nonleased land in order to access the leased land to build, operate, and maintain the turbine; and the right to prevent landowners from doing anything on their property that may block the wind. That can include planting a tree or building a shed. Easements also give the developer the right to "produce noise, shadow flicker, radio interference, vibrations or other impacts" relating to a turbine's operation, according to Pace Law School.

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Roghair lives on his family farm outside Royal, but he also works additional family land within the Highland Wind farm in northwest Iowa, which is owned by MidAmerican Energy, the largest utility company in the state and a subsidiary of Berkshire Hathaway. His wife's mother and surrounding landowners signed easements years ago. Five turbines now stand near their family's property, while another 75 turbines can be seen in every direction. A power line runs under their field, and an access road also runs across a section of it.

Farmers say although they understand the companies need full access to their investments in order to ensure their projects run smoothly, it gives them too much control over the land and the people who work it. "It's not just an easement for your access road and this little bit here around these wind towers. It's the whole farm they've got easement to," he says. "So now there's a clause in there that says we can't plant a tree, build a building anywhere on that farm they've got easement to, because it might affect the wind."

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He and his wife, Alice, said people approached by wind developers didn't



understand how much power the wind companies would have over the land and the people working it. In many cases, people signed easements years before turbines actually started going up, and technology changed in that time. So the turbines built were much bigger than anyone had ever seen when they signed on the dotted line.

Working with the construction companies and utility company has also proved to be difficult. Roghair says that cranes, semis, and other heavy equipment that are used to build the turbines, install power lines, and service the area have broken underground tiles that are used to drain excess water below ground, compacted soil, and torn up cover crops needed to control erosion and protect the health of the soil.

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The Highland Wind farm has also made farming more complicated and less lucrative for Kelly Ney, who lives outside Primghar. Networks of tiles under fields are extensive, and because drainage doesn't stop at property lines, the health of one farmer's field is linked to his neighbor's. Tiles under a field across from Ney's land were broken due to turbine construction and maintenance, which caused drainage problems in his field. Ney says that despite many phone calls, it took so long for MidAmerican to fix the tiles that he wasn't able to plant crops on 60 acres of his property.

Setbacks determine how much noise from the turbines is audible to those

nearby, and whether they get shadow flicker, which is a pulsing light effect caused by shadows from the blades of a turbine rotating in front of the sun. In Iowa, like most states, setbacks are decided at the county level. Some counties are implementing best practices in setbacks, which commonly state that turbines should be set back 110 percent of the total height from the property line or road, says John Boorman, vice president of the Iowa Wind Energy Association. It's different in Europe, where—according to Andrew Canning, press and communications manager for Wind Europe—setbacks are usually decided at the national level. Those living near turbines in Iowa say statewide or national setback regulations like those in Europe would provide oversight to help protect them from powerful energy companies using a lack of regulation to their advantage and would also give them a better chance at recourse if wind companies turned out to not be such good neighbors after all.

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There are 12 wind turbines within a mile of Corey Gillespie's home outside Primghar in northwest Iowa, and if conditions are right, he can hear noise coming from up to six of them at once. The noise is most bothersome at night, when the blades are turned to a different pitch to be more efficient with less wind. Despite having relatively new windows, he can even hear the noise inside—which oftentimes keeps him up at night. Energy company workers and others who don't live nearby "don't believe us when

we tell them about the noise they make,” he says. Workers came and looked at a turbine once, and didn’t hear anything at that time, and just wrote the problem off. Without further recourse, his only options are to put up with it or move.

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Gillespie says he gets shadow flicker at his house for about a month in the winter when the sun is low, but there is more of it out in the field, where it’s more distracting as he works—something that Roghair says happens to him, his son, and his brother, too. It can even make Roghair feel seasick at times.

More than 40 percent more wind power projects nationwide are currently under construction or being developed than at this time last year, second quarter results show, according to the AWEA. By 2020, the U.S. wind market is expected to exceed 10 gigawatts in installed capacity, and wind employment is expected to reach 248,000 jobs nationwide, according to Navigant Consulting. In Iowa, 58 megawatts of wind capacity are currently under construction, and the number of wind-related jobs in the state is expected to hit 17,300 in 2020. The statistics paint a picture of progress and a straightforward path to a future of more renewable energy. But the numbers leave out what residents have on the line, and what they stand to lose, as the industry moves into their communities.

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Janna Swanson has gotten used to being called a climate change denier. She lives outside Ayrshire in northwest Iowa and is a board member in the Coalition for Rural Property Rights, a group that advocates for landowners' rights against wind companies. "We're not being heard. Urban people, I'm sure, are so nice and kind and think [the wind industry] is good," she says. But "they just don't know how much it's hurting rural areas."

***Update, Sept. 5, 2017:*** Mike Speerschneider, senior director for permitting policy and environmental affairs at the American Wind Energy Association, responds to the piece:

The vast majority of Iowans support wind power and want it to continue increasing, including 90 percent of those polled in Iowa's Third Congressional District. We've heard from rural communities across the U.S. and find similar high levels of support. Wind energy developers engage with communities and are sensitive to concerns during the often long and complicated process of developing a wind farm. Communities are the lifeblood of our industry and it is important that projects are developed in a way that is compatible with the local areas.

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Wind pays back to communities in myriad ways from buying students laptop computers to financing new equipment for local emergency services. School superintendents and county commissioners view wind farms as an economic development opportunity second-to-none. Farmers and ranchers receive steady income from wind projects that helps them ride through down times in agriculture markets. These projects can even help keep farms in the family for another generation.

Wind farms are creating opportunity and change for the better in rural America, but it's understandable that some individuals may have a negative reaction when a wind farm becomes their neighbor. There is no silver bullet to power our society, and every form of energy has impacts of one kind or another—yet wind is among the safest and least disruptive ways to make electricity, including in the communities we work with.

*This article is part of Future Tense, a collaboration among Arizona State University, New America, and **Slate**. Future Tense explores the ways emerging technologies affect society, policy, and culture. To read more, follow us on Twitter and sign up for our weekly newsletter.*



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