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William T. Smith

Timothy Paul Smith

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Living With Wind

Gathering impressions of the newest power technology

William T. Smith and Timothy Paul Smith



BY NOW MOST OF US HAVE HEARD AT LEAST A FEW FACTS ABOUT the economic and ecological effects of wind power, and a few stories of the controversies turbines seem to stir up, starting when they are just ideas. We don't hear much about the aesthetic and social aspects of wind turbines. We wondered what people who live near active wind turbines think of them, and what it's like to be near one when it's running. We wondered if there was a whole other world we weren't hearing about, one in which the people who find turbines ugly and disruptive are balanced out by others who find them beautiful. We wondered if most people even care how they look. So we set out to visit some places where people are living with wind power.

Ray's Market is a general store in the postage-stamp-sized town of Irasburg, Vermont, a few miles east of Lowell and Lowell Mountain, the proposed site of Kingdom Community Wind. The cashier there, when asked how the villagers felt about the wind project, shrugged her shoulders and said, "Yeah, I don't really hear much about it now. I guess people don't really care much either way." To her, the debate over Lowell Mountain was yesterday's news, and it was time to move on. That isn't the way a number of people around wind facilities feel, especially when a proposed site is being debated. It can be a divisive issue that fractures communities. We thought this divide would be between progressive "green advocates" and old-time conservatives, but that isn't what we found.

WE VISITED ANDY AND GERT TETREAULT AT THEIR HOME IN LOWELL. They are retired dairy farmers. Andy still works in the fields during hay seasons when neighboring farmers need an extra hand. They live in a well-kept old farmhouse with a steeply pitched roof on the side of Vermont highway 100. Across the road from their house is a sign that says, "Kingdom Community Wind." A garden grows beside the road, and next to it stands a table with the sign "Gert's Farm Stand." They invited us into the kitchen where we sat at the table and we talked over a cup of tea. Andy is a big, strong man in his 70s, with a tanned and weathered face. He probably normally smiles a lot, but to him wind power is a serious subject. Gert stayed on the edge of the conversation but clearly held the same opinions as her husband.

They told us that the family that owned most of Lowell Mountain had been logging it for a number of generations, but that New England lumbering has fallen upon hard times. They were left with the choice of subdividing

Turbines on Lempster Mountain in southwestern New Hampshire. KEN BERGMAN

the mountaintop and selling the view or trying something radical. So they sought out the local power company and are trying to get a wind farm established here.

This is a story we heard repeatedly across New England. A family who has made a living for generations off of a mountain is now turning to wind harvesting in the same way a previous generation harvested timber from that same ridge.

Wind caught the Tetreaults' attention, and they became local spokespersons for the project. We asked them why they would spend their retirement trying to get a facility built on a neighbor's mountain when they would not profit from it. They said that they wanted to do something good for their grandchildren and the generations beyond. So they hosted house parties where locals could meet power company officials and engineers and ask a hundred questions. They then confessed that they had started as volunteers but that recently the power company had hired them to be its local community liaison.

In spring 2010, they attended a town meeting that included a referendum on the project. The turnout was incredible: Of 532 registered voters, 456 (86 percent) were present. Pam Tetreault, the town treasurer (daughter-in-law of Andy and Gert), said, "Typically we have 90 to 120 people at town meeting," so this issue was taken to heart. It passed 342 to 114; 75 percent of those voting supported the wind project. Andy said that if the referendum had come up a few years earlier, he would have predicted that only 25 percent would have supported it, 25 percent would have voted no, and half of the town would have had no opinion at all. But something had changed their attitudes.

We asked Andy why he thought people fought against it. He said that his neighbors were skeptical of the project because they didn't want outsiders exploiting them. He felt that the attitude that carried the day was that the power should stay local. David Hallquist, the CEO of the Vermont Electric Co-Op, later explained that this meant that when you bought electricity in northern Vermont, the check would first be sent to the Kingdom Community Wind project.

Before the town meeting, the wind project sponsored a bus trip to Lempster, New Hampshire, so people could see the turbines there. Gert described the trip to me and as she pictured the tall towers in her mind, she said that they were "majestic." She paused and thought about this and then reaffirmed it. "Yes, they are majestic."

TO TRY TO UNDERSTAND HOW PEOPLE VIEW WIND DEVELOPMENT, it helps to go back a few hundred years. From the beginning of European settlement in the Americas, development has radically altered and re-altered the landscape time and again at our convenience. When William James was traveling in the Carolinas in about 1800, he described the farmsteads as “unmitigated squalor.” The forest, with many great trees standing girdled and dead, was an “ulcer” on the landscape. He could not understand why these frontier pioneers had created such ugliness out of the virgin forest, and so asked a local what he saw in the landscape. The local saw “progress”; a cabin would provide safety and shelter for his family and a farm would feed them.

This scene repeated itself tens of thousands of times across the American landscape: A pioneer arrived in the deep woods, the virgin forest, and cleared the land to make a better life. Clearing the land, however, can be brutal. Pioneers would cut the smaller trees and girdle the large ones so that they could plant a crop that same year. The landscape would become practically infernal, covered with stumps and the ash of burning brush piles. And at the end of a long, hard day of toil, what would the pioneers see? They would not see a Garden of Eden, but rather a covenant, a hint of something better. The American landscape has often been seen as a promise of a better future. In the early days of this country, a great number of European visitors bemoaned the landscape, saying it was “untutored,” and needed the guiding hand of “the parson and the squire.” Fifty years later, even the stumps were gone and New England was a lush agrarian landscape.

Since then, one development in particular has drastically altered the shape of the landscape. Sometimes we try to imagine an evening or night in a great city before the electric light. The place would have been lit with thousands of lamps or candles, giving the city a soft glow—and heat and flames and smoke. It is a scene practically unchanged since ancient times. The lighting of Babylon, Alexandria, and Rome was essentially the same as Boswell’s London or Atlanta during the Civil War. Have you ever tried to read by candlelight during a power outage? The novelty soon wears off.

So the speed of electrification should not shock us. You might say civilization was waiting for this. Electric lights were a laboratory toy from about 1810 until about 1880, when Thomas Edison and others were ready to light up the world. In 1879, Edison created the first long-lasting, inexpensive lightbulb. By 1882, he was wiring the region of Manhattan around his Pearl Street Generating Station. This station on the southern tip of Manhattan could power lights only within about a quarter of a mile of the generator

because the transformer hadn't yet been invented. So at first a city would have numerous power generating stations. The streets were filled with electric lines and the power station rumbled and smoked all night, but in people's houses and apartments and businesses, there was light.

Once an efficient transformer was invented, power companies could "step up" the voltage at the power plant, transport it at a high voltage, and then "step-down" the voltage at transformers in neighborhoods near where it would be used. In 1896, the power of Niagara Falls started to light the factories of Buffalo, 22 miles away. The simplest way to move high-voltage power was to string it up high in the air on great pylons, and in a very few years, a grid of high-voltage power transmission lines laced across the countryside in a way no previous development ever had.

Electricity changed the landscape starting about 120 years ago.

Besides transmission lines, electricity changed the landscape through the building of power plants. Before it began to spread, any harnessing of wind or water occurred on a much smaller scale, providing only the force to drive a mill, not to power an entire city. In the twenty years between 1890 and 1910, this began to change. Officials began to plan very large power plants far from the cities they supplied. California began to dam waterways in the mountains to provide hydroelectric power for Los Angeles and San Francisco. Most people welcomed hydro. Newspapers at the time called the mountain cascades "white gold." The power source was sustainable, renewable, and clean. A city without hydro was covered with a layer of ash and coal dust. Until about 1950, hydro's benefits to society were viewed as vastly outweighing the negative impacts of dams and long-distance transmission lines.

Since the 1960s, the infrastructure of modern life has continued to change, but in the last few decades, people have started to challenge changes to their landscapes they don't see as positive. In response, utilities now reuse sites: They will build new power plants on sites of old plants and run new transmission lines along the same corridors the old ones used. Also, utilities are more apt to rent land from a private owner than to request the state to take it by eminent domain.

A good example of this occurred in the 1980s and 1990s, when communications companies laid hundreds of thousands of miles of optical fiber lines. Many people didn't notice these lines, most of which were laid alongside railroad tracks or interstate highways. These transportation corridors were ideally located to connect city centers, and they were simple to use. Usually one cable company per corridor rented the space from a few landowners.

The newest utility that really has changed our landscape is wireless phone service. There are about 200,000 cell towers in the United States, and the number continues to grow at more than 20,000 each year. Some of these are attached to preexisting radio masts, some on tall buildings, but because cell coverage is short ranged, many new towers have been necessary. Ironically, many Americans have pleaded for better coverage while blocking the building of new towers. One of the solutions has been the advent of the hidden tower. Some cell towers look like other things—flagpoles, trees, cacti—or hide in structures such as church steeples. If a steeple is made of wood or fiberglass, it is essentially invisible to the radio waves, so the antenna need not be visible from outside.

This last point is telling: Visibility is an issue. We could ascribe this to the boldness people feel to comment on such changes dating to the 1960s—the upswing in both the resistance to development and the will to challenge authority—but although this makes some sense, it is not the entire story. Another factor in citizens' acceptance or rejection of a new development is the degree to which it will benefit them. The benefit to a settler in the Carolinas of clearing the land by whatever means necessary was obvious: He could farm and build his house and thus survive much more easily than he would have been able in untamed wilderness. The benefit of electrification was obvious: Suddenly people no longer had to depend on flickering and smoking flames for light at night. The benefit of hydropower was obvious: One could power a city without coating it in ash.

Unlike those, more modern utilities bring much less visible benefits. Everyone seems to accept cell service as part of life today, but people still resist the construction of cell towers. Perhaps the benefits of cell service are underappreciated: In early incarnations, at least, cell phones did little more than what land lines did, and that less reliably. It may be this sense that cell towers don't provide an essential service so much as grant some degree of improvement to a preexisting one that makes their benefits seem less dramatic

and thus less worthy of priority. Perhaps this view of historical developments can grant insight into the ways we see wind power.

IT'S THE FIRST DAY OF AUTUMN IN LEMPSTER, A TOWN OF 1,100 PEOPLE in southwestern New Hampshire, near Sunapee. The leaves are just starting to turn. You can clearly see the towers and turbines from downtown Newport, six miles away. As you enter Lempster, there is a sign that proclaims, "First to Produce Clean Green Energy in New Hampshire." This rural settlement, with its old meetinghouse and graveyard at a crossroads, is not a stranger to cutting-edge power. In 1939, the New Hampshire Electric Co-Op started its distribution system here. The rural electric co-ops that were springing up across the country at that time were part of the New Deal, part of the stimulus package of the Great Depression.

Ed Cherian, the project manager for this site, took us on a tour of the wind farm. There are a dozen towers, each with the ability to produce 2 megawatts. There was only a gentle breeze that morning, and Ed estimated that the turbines were running at 30 to 35 percent of their maximum power. We stood under the massive blades and talked. We asked him about the relationship between the wind farm and the town. He told me, "Pride. I think that is how most Lempsters now feel about it. They are proud to be the first in New Hampshire." He was delighted the day he drove into town and saw the sign. He had not expected it.

We asked about the detractors. "There was a warrant article to stop it. There are about 800 [voting] people in Lempster and the vote was about 600 for and 40 against. The opposition was mainly retirees and people with second homes. They saw this as a blight in their slice of paradise."

Leaving the wind facility, we stopped by the side of the road to photograph the turbines. A couple who introduced themselves as Tom and Debra stopped to talk. They said they didn't like wind power and worried the turbines detracted from the landscape. However, the longer we stood there the more they agreed that they really were not very loud. Debra even went so far as to say that they were "graceful."

A FEW DAYS LATER, WE MET KEVIN AND DEBBIE ONNELA IN LEMPSTER. The Onnelas run a logging and lumber business. They also own the land on which part of the wind farm is located. The day was thick with rain and the clouds were low so that we could see only two of the towers on the ridge. The leaves, beeches, and maples, were coming down with the rain. We passed

the equipment shed, a yard stacked with hundreds of logs, and eventually found the office. When we walked in, Debbie was working on the computer with the phone tucked on her shoulder. The office was wood paneled. Fish swam in a tank, and the words “Onnela Lumber” were visible painted on the blade of an old two-man saw mounted on the wall. Kevin joined us a few minutes later.

He is a big man, and when he shook hands, it was obvious that his were working hands, big and beefy and even larger than those of Andy Tetreault, the farmer in Lowell. Kevin’s thick, white-blond mustache dripped around his mouth. Debbie is petite in contrast and let Kevin do most of the talking, although later she showed a number of photographs of turbine construction and of their grandchildren.

Kevin told us a similar story to the one in Lowell. His logging business had fallen on hard times with global competition, and his mill had gone from eight employees to only the Onnelas and their son-in-law. They needed to earn a living off their land and had a choice of subdividing the land and selling it, or doing something else. Meanwhile, Bean Mountain had caught the attention of Community Energy Inc. as a windy place.

We asked about the town’s reactions. He said that most of the town was proud of the towers and had endorsed them at town meeting. However, he thought that there were going to be some problems in the near future. Presently more than a quarter of the town’s taxes are based on the wind facility but that may fall to as little as 10 percent in the post-construction, operational era. The Onnelas’ home is on Bean Mountain, among the windmills, which they said they can hear outside. But when it is a windy day, they said there are too many other noises on the ridge for the turbines to be noticeable.

OUR LAST STOP WAS AT THE NEW HAMPSHIRE PUBLIC SERVICE Commission’s Site Evaluation Committee’s hearing on a new proposed facility. This would be located in the town of Groton, just west of Plymouth. Here we met with Lawrence and Sarah Mazur, who are working very hard to block this new project.

The hearing was in one of the state office buildings in Concord. In these cases, the applicants present evidence that they have completed required site studies. This is the final step for getting state approval. Witnesses and experts for and against are brought in, almost like a court hearing. They make statements, explain their reports, and are examined and cross-examined.

They are questioned by the applicant, the “counsel for the public,” and the “intervenor.” The applicant is defending the project, the public counsel will push the applicant to make sure that all requirements really are being met. The intervenors are citizens who may be affected. They are usually neighbors who want to make their concerns clear to the committee.

Over the lunch break, we asked the Mazurs what their worries were. They said that those opposed to the project have a whole list of complaints that include aesthetics and property values, but that their main concern was “wind turbine syndrome.” *Wind turbine syndrome* is a term created by Dr. Nina Pierpont, author of a book by that name. Some people attribute sleeplessness and stress to being exposed to the sound of turbines. Several studies pinpoint noise as bothering people, but wind turbine noise is not unique among noises. In the medical and psychological fields, this is not a clinical term. Most people who study this have concluded that the background noises usually exceed the turbine sounds. But to the Mazurs, this is still a major cause for concern.

The hearing went on for a week. At the conclusion, the committee members felt that most issues had been adequately addressed. But they requested some more information, especially related to the rerouting of the transmission lines that connect these turbines to the grid.

How do neighbors feel about wind? If you go through the docket of letters filed with the SEC, it is mixed. Many letters said, “Yes, we want this project for our community,” and many also said, “No, we don’t.” But it is hard to tell from these what the general population thinks. Those letters reflect the opinions of those motivated to write.

The oldest operating commercial wind facility in New England is in Searsburg, Vermont. Recently, Deerfield Wind has proposed extending the size and number of windmills to an adjacent ridge in Searsburg, and along the same ridge south into the town of Readsboro. These are towns that have lived within sight of windmills since 1997 and so voted with experience. Early proposals were rejected by the town, but in the end, both Searsburg and Readsboro have overwhelmingly approved resolutions supporting the Deerfield facility. Residents of those towns wanted a fair contract with the wind facility, but also know they can live with turbines on their ridgeline.

The problem with wind power seems to be that its benefits, though important, are not obvious and immediate in the way that many other developments have been, so support for wind projects sometimes flags. It does not change the end product for most people—the television runs just

as well on coal as it does on wind; the lights shine just as brightly; the toaster is just as broken—so people don't see the difference in their everyday lives. Furthermore, there isn't any real, tangible benefit to hosting a wind facility. Even people who believe strongly in green energy might just as well choose to have the wind facility powering their home be on someone else's mountain; the facilities don't really create jobs or change the price of the energy for the locals in any observable way. And because the benefits of wind power are not obvious, because it is hard to see the amount that the globe isn't warming because of a local wind facility, because of this the argument of aesthetics comes into the debate. It is only, as far as we have seen, the people who are opposed to wind power who seem to make any argument of aesthetics. This makes sense. One would not argue that wind facilities should be built because they are beautiful—that would be a lot of time and capital to expend on a matter of personal taste—but one might argue that they shouldn't be built because they are not. That said, Debra, whose concerns were primarily aesthetic, did admit that the turbines were, in their way, graceful. Personally, we tend to think that wind turbines may yet become as invisible as radio masts and utility poles, and while we are still looking at them, they strike us as beautiful.

We visited the wind facility in Searsburg, Vermont, in January 2010. It was snowing when we arrived, and though the air at ground level was clear, the mountain was hidden. We stood near the base station, looking around for windmills, until the site manager arrived with his dog. He showed us where to look, and as we stared, the snow parted some, and we could see a little way up the ridge. Then through the opaque, the first tower emerged white against the white sky. As we watched, the snow parted even further, and we could pick out four or five more in a line behind it. Now and again, one of them would turn its head to better face the wind, like a cow turning toward a fresher patch of grass to graze on. When we came closer, we could hear them lowing.

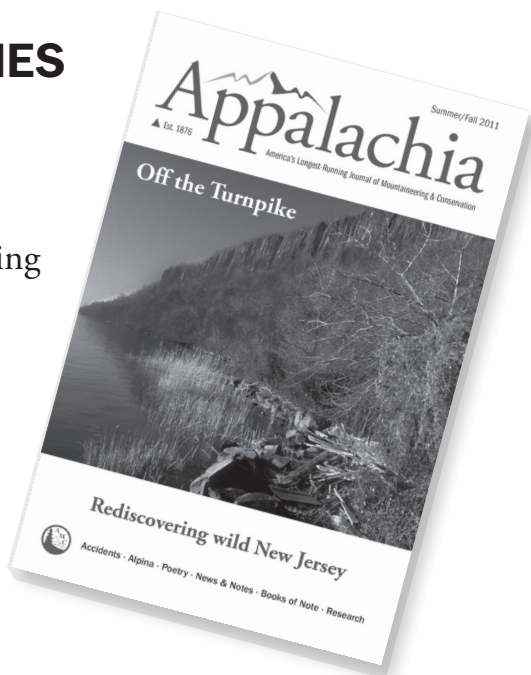
WILLIAM T. SMITH is a student at Bard College, studying creative writing. He enjoys exploring, climbing mountains, and watching clouds. TIMOTHY PAUL SMITH is a research professor at Dartmouth College, teaching in the Physics and Environmental Studies Department. He can often be found hiking and snowshoeing across the mountains of New Hampshire with his sons.

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