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Harnessing the Wind: Colby alumni bring booming wind-farm industry to Maine and the Northeast

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An aerial photograph of a wind farm situated in a mountainous, forested region. Three large white wind turbines are visible, their blades extending over a dense forest of evergreen and deciduous trees. In the background, rolling hills and mountains are visible under a clear sky. The title 'HARNESSING THE Wind' is overlaid on the image, with 'HARNESSING' and 'THE' in a smaller, bold, sans-serif font, and 'Wind' in a much larger, bold, sans-serif font.

HARNESSING THE Wind

***Colby alumni bring booming wind-farm
industry to Maine and the Northeast***

BY DOUGLAS ROOKS '76

PHOTOS BY HEATHER PERRY '93

In mid-December in freezing rain on 1,085-foot Stetson Mountain, close to the Canadian border in Maine's easternmost Washington County, a construction crew jockeyed a 250-foot rotor assembly atop a 256-foot tower. Hoisted by an enormous crane, the blades were carefully guided into place until, finally, there was an audible, satisfying clunk.

"She's in," said Ron Perry, field safety specialist with the construction company Reed & Reed, watching the operation from the ground.

And Maine moved another windmill closer to its goal of making wind power, a relative newcomer in the New England and the Northeast power mix, a major source of electricity.

Maine will soon have 400 megawatts in wind energy—nearly half the electricity once produced by the now-closed Maine Yankee nuclear plant. A Maine task-force goal of 2,000 megawatts of wind energy by 2015, some from fixed offshore platforms, still looks ambitious, but it's not out of the question. On that same December day, the state announced first-in-the-nation testing of areas designated for offshore wind turbines. Reed & Reed, a Maine-based construction company headed by co-owners Jackson Parker '76 and Tom Reed '87, is a leading player, erecting wind farms across northern Maine and as far south as the Berkshires in Massachusetts.

Wind energy, not so long ago a quixotic curiosity, is transforming into a major contributor to the grid, and Colby alumni are key players. From the 13 Colbians at Reed & Reed to wind farm developer Matt Kearns '93 to national wind energy expert Rob Gramlich '91, Colby graduates have embraced both the environmental and commercial benefits of this fast-growing industry. Said Gramlich '91, senior vice president for public policy at the American Wind Energy Association in Washington, D.C., "In the current economic and political climate, it's one of the few things we have available."

Driven by climate-change and other concerns, the energy-industry transformation is unfolding quickly as wind power is seen as one of the most viable, albeit challenging, energy sources for the Northeast. In Maine, signs that wind power is the future are everywhere. Since the first industrial-scale turbine complex went on line at Mars Hill in Aroostook County in 2006, proposals and permits have



Workers for Reed & Reed maneuver a wind turbine blade into place at Stetson Mountain in Washington County, Maine.

multiplied around the state. In perhaps the most dramatic installation of wind turbines, 22 towers have been erected on Kibby Mountain, a few miles from the Canadian border in northwest Maine. The turbines, built in Denmark, were shipped across the Atlantic on special ships, trucked across Maine (through Waterville), and installed on the mountain by Reed & Reed—a family company also known for bridge building, including the dramatic

Penobscot Narrows Bridge near Bucksport, Maine, completed in 2007.

Without a doubt, the Kibby Mountain installation, owned by TransCanada, is a new and striking human achievement. The 160-foot blades revolve once every four to five seconds, creating mesmerizing shadows and filling the air with a relentless whoosh. Installing them along this rugged, 3,200-foot-high range was an engineering feat requiring moving of thousands of tons of rock for road building and bringing enormous, \$2-million cranes to the tower sites.

Wind farms are a new venture for Reed & Reed but, in an indication of the potential seen in this industry, the Woolwich, Maine-based contractor has already become a major player. So far the company has worked on every industrial-sized wind project in New England, though CEO Parker knows that competition will soon be keen as more construction firms enter the business.

Parker first got the idea that wind energy might be in Reed & Reed's future when, on



Jack Parker '76, left, and Tom Reed '87, owners of Reed & Reed, Inc.

vacation in California, he saw some early turbines in Altamont Pass. Then in 1994 Reed & Reed was picked to build a project in western Maine, but the plan was scuttled by falling energy prices and the developer's bankruptcy.

Parker sees the new generation of wind developers using more advanced technology amid a more favorable alternative-energy climate as a solid opportunity. "We were first in the field and have reaped the benefits," Parker said.

Though the project is not without its critics, including those who lament the erection of windmills in a remote area replete with wildlife and previously unspoiled views, the results on northwestern Maine's Kibby Mountain are

impressive. These are high-tech machines of considerable sophistication. Computerized controls adjust each blade's angle to take best advantage of the wind. And, while the Kibby turbines are usually controlled by onboard computers, they—along with most of the wind turbines Danish wind-power giant Vestas has installed worldwide—are monitored from a Seattle office building by the manufacturer.

While Jack Parker concentrates on finances and project planning, his brother-in-law, partner, and Reed & Reed co-owner, Tom Reed, spends much of his time in the field, which he says suits him. A day in the office is, by definition, a day when he'd rather be somewhere else, he says.

During the summer of 2009, Reed was dividing time between a bridge replacement in Norridgewock and the Kibby Mountain site, among others. He readily acknowledges that there was a steep learning curve involved in putting up towers and turbines in such rugged and remote terrain. Harking back to the company's pioneering Mars Hill project, in northern Maine, he said, "We struggled at first, and when we went to put the first turbine in place, some of us held our breath." But all went well with that first turbine, and now wind power contracts have "changed the face of the company," Abigail Parker '01 said.

Wind power's rise has also drawn wind-power developers' operations to the Northeast, including one headed by Matt Kearns '93. Kearns is vice president of Northeastern business development for First Wind, once a small Massachusetts company that has grown to develop wind farms from Hawaii to Atlantic Canada and that has now taken the lead in wind-power development in New England—including the Stetson Mountain project.

An environmental studies major at Colby, Kearns did a Jan Plan with Maine-based Kleinschmidt Associates engineering. That month led to full-time work and to a career in renewable energy. After five years with a major hydro developer, Kearns decided he wanted to return to New England. The First Wind office in Portland where he now works has nearly as many employees (16) as the entire company did just a few years ago.

WIND POWER GENERATES ELECTRICITY AND OPPOSITION

As towering wind turbines sprout across the landscape, opposition has sprung up as well. Many complaints, especially in early projects built near town and homes, come from abutters and neighbors. Some living close to turbines contend that the noise and vibration is disruptive and causes health problems. The spinning blades are said to be a threat to migrating birds and bats.

In the Berkshires, in western Massachusetts, where Reed & Reed built a 10-turbine wind farm last year, opponents complain that the big machines despoil scenic vistas and the roads that lead to the towers threaten wildlife.

And wherever objections arise, projects may put environmental activists in the position of opposing a source of clean and renewable energy.

"We all care about greenhouse gases, but there are some sites that just aren't going to work," said Sally Stockwell, conservation director for Maine Audubon. "We have to weigh both the ecological and environmental impacts of each project to find a balance."

One of the state's leading environmental groups, Maine Audubon has been critical of wind farms. Audubon contends that some towers would disrupt key wildlife habitat and that the associated roads can cause unacceptable erosion. Such objections caused Maine regulators to reject one proposed project that would have put turbines near Sugarloaf Mountain, in the northwest part of the state.

But opposition isn't always aimed at scuttling projects. Audubon has helped convince developers to redesign wind farms to mitigate the impact on wildlife. TransCanada moved several towers in the first phase of its Kibby Mountain project, for example, because the original sites affected nesting habitat for the endangered Bicknell's thrush.

Stockwell said Audubon does support wind energy in concept, but maintains siting is critical, as is a long-range view. "So far we've seen a lot of applications from developers for individual projects that make sense to them," she said. "We don't see anybody taking a holistic look at where we're headed."

Kearns was eager to return, he says, because he's sure renewable energy needs to be a greater part of the electricity mix in New England. "The opportunities for new hydro generation here are very limited," he said, "but the wind resource is very significant."

Kearns, working for First Wind, oversaw development of the Stetson Mountain project, with Reed & Reed as the building contractor. The first phase came on line in January 2009, and the second, including the tower described above, is expected to start producing power in mid 2010. Stetson's combined capacity is 82 megawatts and, along with the operating Mars Hill site and projects in the permitting stages for Rollins Mountain in Penobscot County and Oakfield in Aroostook County, First Wind expects to have 236 megawatts on line within two years. The Kibby Mountain complex, owned by the Canadian energy giant TransCanada, uses larger turbines and will produce 112 megawatts, enough electricity to power about 112,000 homes.

In the shift away from fossil fuels, nuclear power has acquired new advocates, but any new plants are a decade away, with similar timelines for deep offshore wind platforms. In the meantime, land-based wind farms are creating energy—and jobs. "You can't discount the effect on jobs in manufacturing and construction," Gramlich said. "This is one of the few new opportunities we have to get people back to work."

Most of the \$50 million First Wind spent on the first stage at Stetson went directly to Maine companies, not just for environmental and engineering studies, but for less obvious purchases—from thousands of bales of hay grown by Maine farmers to large numbers of hemlock ties to move big machinery. "There's been a lot of discussion of the costs of wind power, but there are a lot of benefits, too," he said.

With private capital scarce, wind projects are lining up for federal support. The second stage at Stetson is being financed with federal stimulus money. Critics point to major federal tax breaks as subsidizing wind power develop-

REED & REED: ROOTS ON THE HILL

Jack Parker '76, the husband of Susan Reed Parker '76, came into Reed & Reed in 1981 after a relatively brief stay in Chicago. A decade later Tom Reed '87, Susan's brother, joined the firm, and the two men are now partners and owners—the fourth generation in the 80-year-old company. Tom and Susan Reed are the children of Carlton "Bud" Reed '53, who built up the company through the 1950s and '60s and was fervent in his enthusiasm for Colby. Since he graduated, each branch of the family has sent some or all of its members to Mayflower Hill.

Tom Reed, married to Kathleen Pinard Reed '86, said his company is a tight-knit organization that generally promotes from within. His experience with the family firm, which now employs 250 people and has \$100 million in revenue, reminds him of the bonding he experienced as a Colby student. "We don't talk about relationships in a business that much, but they're all-important," he said.

That bond to the family firm extends to the fifth generation as well. Abigail Parker '01, Jack and Susan's daughter, served her own apprenticeship—a Jan Plan project to write a family history that, five years later, was published privately as a book, *Reed & Reed: Building on a Legacy*. Spending many summer mornings with her grandfather, Bud Reed, provided Abigail with valuable insights into how things work, she said.

ment, but proponents say that's typical of all major energy sectors. Indeed, petroleum and gas drilling is still favored by numerous tax breaks. "This is a capital-intensive business that requires lots of investment up front," Gramlich said. "But there's a major long-term payback since [with wind energy] there are absolutely no fuel costs."

New England does provide a challenging


lenging, market for developers. "Siting is a lot more complicated," he said, "but it can be done."

Getting electricity to market is also more complex when it's from remote sources like wind farms. Mountainous locations require miles of transmission lines, and the current capacity of the grid is a bottleneck. Kearns said that First Wind had to build its own 20-mile transmission link to hook into the

New England grid from Stetson Mountain. Both Central Maine Power and Bangor Hydro have proposed major new transmission lines, but construction is years away. In the meantime, Kearns said, developers will have to use ingenuity to get their power to market.

Despite the challenges, Kearns often sounds like a man on a mission. "The reason I came back to New England is because I'm convinced that wind power has a big role here," he said. He sees wind power as a great export opportunity for Maine and a way to expand the state's

economy. "There's a lot more to do here, and we hope to be a part of it."

Meanwhile, on Stetson Mountain in December, Reed & Reed was poised to erect its 100th wind turbine. Auspiciously, the landmark was delayed as crews waited for high winds, blowing out of the northwest across the wooded ridge, to ease. 



Wind turbines at the Kibby Mountain wind farm in northwest Maine.

arena for wind-power permitting, Kearns and Gramlich agree. "In Texas, landowners can't get enough of it, and they compete to host new projects," Gramlich said. "In North Dakota the wind blows strong and steady twenty-four hours a day." But neither is as near the major population centers of the East Coast as Maine is, making Maine such an attractive, albeit chal-