

Catching the Wind

By Tim Woodward | 09/03/06

Towering turbines on rural ridgelines could signal the future of energy in Idaho

Forty-three wind turbines, each as tall as a 20-story building, rise from the rolling hills around Bone and stretch for nearly six miles. Lending an unexpected, European look to this rural corner of southeast Idaho, they evoke Danish landscapes or postcards from Holland.

Steve Rhodes, whose family has ranched and farmed for four generations on nearby Crippled Couple Ranch, admits that the windmills "took some getting used to."

"They changed the landscape. But now I think they're kinda pretty. This is something I've dreamed about all my life. The wind blows most of the time out here. I've always thought somebody ought to do something about it."

Somebody is. Compared with the mass of a hydroelectric dam or the stacks of a coal-fired plant, the Wolverine Creek Wind Farm looks benign, almost low-tech. Few would guess that the pale gray turbine blades spinning almost silently in the green hills around Bone provide enough electricity to power 12,000 homes.

Idaho's largest wind farm could be a harbinger of the state's energy future. A smaller commercial wind farm, Fossil Gulch, is operating near Hagerman, and a project three times the size of Wolverine Creek is projected to be operating near Albion in 2008. Its turbines would dot ridgelines for 18 miles and provide enough power for 40,000 homes. More than 40 other projects large and small are in various stages of planning.

Modern technology has brought wind power from the realm of weird science to mainstream development. Wind power doesn't pollute, it contributes jobs and tax dollars to rural economies and, unlike coal or natural gas, it has no fuel costs. Demand among

prospective developers is great enough that wind turbines are back-ordered two years. Wind farms along the Snake River Plain could soon be as common as potato fields.

Not everyone likes wind power. Albion residents have signed a petition opposing the Cotterel project, which they say would dominate the landscape. Albion's Jim Wahlgren, chairman of a committee opposed to Cotterel, adds that wind farms are less effective than other methods of energy production because the wind isn't always blowing.

"A geothermal plant being built in Cassia County will produce half as much power as Cotterel on only eight acres," he said.

At the Idaho Division of Energy office in Boise, however, principal energy specialist Gerry Galinato says wind is the renewable energy source with the proven technology most likely to affect Idaho's energy picture in the near future. He ranks geothermal and biomass (converting biological material such as wood waste into energy) second and third.

'GREEN' TECHNOLOGY

"Wind is the renewable technology of today," said State Sen. Curt McKenzie, a Nampa Republican and co-chairman of a committee working to revise Idaho's energy plan. "And it's only going to be a more reliable source as we learn how to capture the energy and release it better. Of all the renewable energies, wind is where our largest supply will come from."

Wind and other renewable sources meet what appears to be a growing desire among Idahoans for green energy. A public outcry over emissions was a factor in the defeat of Sempra Corp.'s proposed coal-fired plant in the Magic Valley this spring, and wind was the energy source of choice in a 2005 Boise State University study of energy policy issues.

Of 534 adults BSU surveyed statewide, 59 percent chose wind as the most desirable source of power. It was the most popular choice, followed by solar and hydro. Natural gas, coal and oil were rated the least desirable.

Idaho's wind power potential is significant. A Northwest Sustainable Energy for Economic Development study estimates it at 18,000 megawatts of power. The state ranks 13th among states in potential wind power, according to the American Wind Energy

Association. Its ranking would be higher if not for an abundance of sites aesthetically off limits -- no one wants wind turbines dotting the White Clouds, Sawtooths, Craters of the Moon or other iconic vistas.

Two wind-energy companies consider Idaho's resources promising enough to have moved their headquarters here from other states. One is the Exergy Development Group, which has offices in California and Montana but now operates mainly out of Boise.

"Southern Idaho is one big wind machine," Exergy President James Carkulis said. "It starts in the west and slides up the western slopes to the northeast with few geographical factors to impede it."

Exergy has utility contracts for 10 wind farms in Idaho with a total of 138 megawatts of power output. They would nearly triple the 75.4 megawatts now produced in the state, almost all of it at Wolverine Creek and Fossil Gulch.

HELPING RURAL IDAHO

Wind farms are built primarily in rural areas, bringing jobs and tax revenues with them. Windland Inc., which moved its headquarters to Boise in 1993, recently completed a four-year federal approval process for its planned 200-megawatt Cotterel Mountain Wind Farm at Albion. Cotterel would provide significant employment during its construction, according to company spokesman Mike Heckler, and up to 15 permanent maintenance and operations jobs paying \$30,000 to \$60,000 a year.

"Cotterel will increase tax value in Cassia County by 25 percent and require very little in the way of services," he said. "We won't need things like another school or another sheriff's deputy."

Wolverine Creek, which straddles two counties, went on line late last year and will pay an estimated \$719,700 this year to Bonneville County taxing districts. Bingham County will receive roughly a third as much. Wolverine manager Manny Morrell oversaw up to 200 people during construction.

"We used local companies for timber, excavating, trucking, concrete, electrical and engineering," Morrell said. "The work fueled business at hotels, restaurants, stores -- you

name it."

While providing relatively few maintenance and operations jobs -- four at Wolverine Creek -- wind can be a source of income for local ranchers and farmers on whose land wind turbines are erected. Depending on the amount of power produced, they typically receive a percentage of profits ranging from \$4,000 to \$7,000 per year per turbine. The turbines' effect on crops and livestock is minimal.

"I don't have any on my land," said Rhodes, whose farm lies a breath of wind away from Wolverine Creek. "But I wish I did."

INTEGRATING WIND

Idaho Power has contracted to include some 300 megawatts of wind power in its system. Senior Vice President James Miller says that's "about 10 percent of our load, which is more than just about any utility in the country."

The company's new resource plan, completed in late August, envisions an additional 250 megawatts of wind over the next 20 years. Some think the company could be doing more.

"That's pretty puny," Idaho Energy Division engineer Gerald Fleischman said. "Over 20 years, that's not nearly enough. If they get all the wind they're talking about, it would be one of the biggest percentages of any utility in the U.S. But what that really says is that they all should be doing more."

From a utility company's point of view, wind's biggest drawback is variability: The wind isn't always blowing. Utilities need stable power they can dispatch immediately to handle peak loads and emergencies.

"If we plan on a certain amount of wind and don't get it, hydro has to fill the gap," Miller said.

As more wind farms come on line over a greater geographical area, variability lessens.

Wind is "a wave that goes across the state," said Brian Jackson, a partner in the small

Lewandowski wind farm between Boise and Mountain Home. "If Fossil Gulch is tapering off, wind farms at American Falls might be producing."

Dozens of projects are contemplated throughout the southern Idaho wind corridor. The degree of interest from potential developers was so unexpected that Idaho Power asked the Idaho Public Utilities Commission for a break to allow the company to study the effects of integrating wind power into its system.

The PUC responded last summer with a moratorium on applications for small wind farms. Commissioners will decide whether to lift the moratorium after analyzing Idaho Power's wind integration study, which is expected late this month.

The PUC's decision is likely to be seen as a gauge of Idaho's openness to utilizing wind. Some wind farm developers say Idaho has a less-than-welcoming environment, with the moratorium and a policy -- unique in the United States -- to penalize wind farms if the power they provide to utilities is less than 90 percent or more than 110 percent of what they contract to supply.

The commission's intention, spokesman Gene Fadness said, is to protect rate-payers when wind output is less than projected and Idaho Power has to buy more expensive power. But Jackson said the state is "sending a very clear signal that's onerous to financing wind projects."

Despite having more wind, Idaho lags far behind Washington and Oregon in developing it. Demand for the power is substantial, however, whether it goes to Idaho consumers or not. (Wolverine Creek's power is sold to Portland-based PacifiCorp.)

"If we had the transmission lines, California wouldn't hesitate to buy all our wind power," Fleischman said. "If Idaho Power doesn't want what's right here in our backyard, fine. Sell it to California."

Exergy's Carkulis believes the climate for developing Idaho's wind resources is "warming up. Wind has become mainstream. It has a pedigree. ... The dialogue should be whether we invest inside or outside the state."

Jackson adds that wind promises the region the same opportunity hydro once did.

"It's not a solution, but it's a stabilizing force in the overall energy picture," he said."

WORRIES ABOUT WIND

Not even its most avid proponents say wind energy is perfect. Getting power from wind farms to utility grids in most cases poses a formidable economic challenge. Developers are responsible for building transmission lines, a costly procedure in a business with relatively low profit margins and high risk factors.

Early wind farms in California were bird Cuisinarts, their small, rapidly turning blades killing thousands of birds. Albion residents have expressed concern over the Cotterel project's potential impact on raptors and endangered sage grouse. In response, Heckler said, Windland spent more than three years tracking the birds with radio monitors and paying people to observe sage grouse and raptor movements.

"The bottom line is that we sited the turbines around the bird-use areas."

Turbines have changed over time to lessen threats to birds. Latticed towers that birds use for nesting are giving way to tubular pillars. Rotors are larger and spin more slowly, making them easier for birds to see and avoid.

Some people, like Wahlgren in Albion, object to wind turbines on aesthetic grounds. He contends that they'd dominate the local landscape.

"They should be in isolated areas, not near any town," Wahlgren said.

Others, like the farmer who lives in their shadow at Bone, think of them as pretty or even majestic.

"Wind is clean energy, and that's something we all want," Rhodes said. "I live by a wind farm, and I think they're a good thing. If I had a choice of things to leave my kids and grandkids, it would be the turbines. The income would help them stay on the farm. I'd a whole lot rather have that than what's out at the INL. To me, it's a no-brainer."

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