

# Wind farm plan raises questions

Energy officials say the proposed facility would have little effect on the area's energy situation.

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Putting 54 wind turbines on Bent and Poor mountains might change the view, and it could well stir environmental resistance. The proposed project would likely have little effect on the economy. Its prospects for bringing job growth, economic stimulation or cheap power to local residents are minimal.

As reported, the early-stage plan for the site envisions 54 turbines, or windmills.

Here's a look at the basics of what this collection of machines would mean:

Q: How much power would 54 turbines create?

A: Enough electricity for about 5,600 people, or roughly 2,300 homes, according to federal energy data.

Q: How did the company that's considering this project hit on building a capacity of exactly 81 megawatts?

A: Wind farm capacity is currently based on using 1.5 megawatt turbines. Invenergy, the company involved here, probably is counting on having eight turbines per mile over a space of nine miles.

Q: Is there a local market for home-blown electricity?

A: Probably not. In reality, Invenergy, the company studying the mountains as a possible location for those turbines, likely wouldn't sell the electricity to a local utility. Although produced locally, the electricity isn't priced more economically to customers in the area. Selling power to distant customers doesn't make it more expensive.

Q: Then would the new Roanoke-area turbines help offset rising local electric prices, such as the 25 percent increase requested last week by Appalachian Power?

A: Not likely. The electricity generated by wind is a mere one-tenth of 1 percent of U.S. production.

Q: Why isn't a local electricity producer a boon to area consumers?

A: Partly because the owner, Invenergy, is based in Chicago. It's putting turbines here in much the same way that a hydroelectric company builds a dam where water flows fastest. Invenergy would be coming to nearby mountains to take advantage of the wind.

Q: So where would the electricity from Bent and Poor mountains go?

A: From the turbines through newly laid cables to a substation owned by Appalachian Power, the main electric utility for this area. From there, the juice is essentially pooled on what's known as a "grid" -- a set of interconnected power lines that supply the entire country. Appalachian's parent company, AEP, based in Columbus, Ohio, is a member of a consortium of utilities called PJM, based in Philadelphia, which manages power distribution among 13 states and the District of Columbia.

Q: How much power from the new turbines would go to Roanoke-area homes?

A: There's no way to be sure, but it might be none.

Q: Is power from wind turbines a bargain, compared with electricity generated in other ways?

A: The price a typical residential customer pays for one kilowatt hour of electricity produced from wind is 1.2 cents, compared with 1.8 cents for the same amount from coal -- the most common fuel source. An average household uses about 1,150 kilowatts per month. But because wind power is intermittent (the turbines don't produce when the blades aren't turning) it must be supplemented with electricity produced by burning natural gas, which costs 5.77 cents per kilowatt hour at retail.

Q: So is wind energy really all that cheap?

A: There can be hidden costs. "Once you start building more [wind plants], I would think you would have to start building natural gas plants," said Rick Webb of the University of Virginia's Department of Environmental Sciences.

Q: What about nuclear power, another high-tech alternative -- how do its costs compare?

A: Power from nukes costs 1.72 cents at retail, but then there's all that environmental baggage.

Q: Are wind turbines cheaper to build than conventional power plants or nukes?

A: Yes, because there's less infrastructure, no transportation costs to bring in fuel and less permitting than nuclear facilities. For example, the Beech Ridge Wind Farm, an Invenergy project in Greenbrier, W.Va., will have 124 turbines producing 186 megawatts of electricity. According to the company, that wind farm, which is more than twice the size of the suggested Roanoke Valley project, will provide that area with 200 temporary construction jobs and 20 permanent jobs.

Q: How minimalist can employment on a wind farm be?

A: According to Webb, the 22-turbine wind farm approved last year for Highland County might only employ a single person to maintain the equipment.