

The New York Times

Archive

NYTimes

Go to a Section

Go

Welcome, [xxxxxxx](#) [Member Center](#)

SEARCH

NYT Since 1981

Search

TimesSelect

NEWS TRACKER

TIMES FILE

Tip for TimesSelect subscribers: Want to easily save this page? Use Times File by simply clicking on the Save Article icon in the Article Tools box below.

NATIONAL DESK

Wind Power Is Becoming a Better Bargain

By **MATTHEW L. WALD** (NYT) 1281 words

Published: February 13, 2005

HOUSE, N.M., Feb. 10 - With every turn of the giant blades of the 136 windmills here on the edge of a mesa, the stiff desert breeze is replacing expensive natural gas or other fuel that would have been burned in a power plant somewhere else.

Wind energy makes up a small fraction of electric generation in this country, but the rising price of natural gas has made wind look like a bargain; in some cases, it is cheaper to build a wind turbine and let existing natural gas generators stand idle. Giant, modern wind farms like the New Mexico Wind Energy Center here may become more common if prices continue to rise.

The center, 150 miles east of Albuquerque, opened in the summer of 2003 and is one of the largest in the country. The power is bought by the state's largest utility, Public Service of New Mexico, and provides about 4 percent of that company's electricity over the course of a year. In March, when demand is low and winds are usually strong, the project generates 10 percent of the electricity the company supplies. The state has established a goal of using 10 percent renewable energy by 2011. The governor, Bill Richardson, a former secretary of energy, has said that New Mexico could become "the Saudi Arabia of renewables."

Across the country, the increase in gas prices has made a fundamental difference in the purchasing decisions of utility companies, said Michael A. O'Sullivan, senior vice president of FPL Energy, which owns and operates the New Mexico center.

"Gas prices helped get -- pardon the pun -- the wind at our backs," he said in a telephone interview from the company headquarters in Juno Beach, Fla. At \$6 per million B.T.U.'s, the standard unit in which gas prices are quoted, the fuel needed to produce a kilowatt-hour costs more than 5 cents at an inefficient gas plant, and more than 4 cents at the most efficient plants.

Last fall, Congress restored the Production Tax Credit, worth 1.8 cents per kilowatt-hour after taxes, for wind energy projects completed by the end of 2005. Counting that credit, Mr. O'Sullivan said, his company sells wind energy for 3 to 5 cents a kilowatt-hour.

The tax credit and steeper natural gas prices are driving the increased interest in wind energy. But there are problems, even supporters say.

"One of the things the wind folks do not talk about is when the wind blows," said George E. Kehler, manager of alternative and renewable energy at Dow Chemical.

West Texas, for example, is notoriously windy, but mostly at night and in the winter, when the electric market

is glutted with cheap power from coal and nuclear plants. Peak electric load, and peak use of gas in electricity generators, occurs in summer, during the day.

One solution, Mr. Kehler said, may be to put windmills on the Texas coast, which may not be quite as windy, but where the windiest periods happen during daylight hours.

Dow is a strong supporter of wind-generated energy as one strategy to drive down the price of natural gas, which the company uses as a fuel and as an ingredient for chemical manufacturing.

Another problem, if wind energy becomes more popular, is output reliability. The New Mexico Wind Energy Center output of up to 206 megawatts is 8 percent of what all the company's generators would produce if they were all running at full capacity.

"That is enormous," said Don Brown, a spokesman for Public Service, who said it was a record among American utilities.

But most of the year the wind is not blowing nearly hard enough to make 206 megawatts. Mr. Brown said his company was not certain how much more heavily it could depend on wind energy without the threat of blackouts.

The variability was obvious here on Thursday morning, with wind that looked to be suitable for kite flying, but which the center's employees said was weak. A control room display showed the wind blowing at 5.5 meters a second (about 12 miles an hour) and the "swooshing" from the 110-foot-long blades was slow, turning at about 16 revolutions a minute instead of the optimum 20. The plant was producing only about 25 megawatts, or one-eighth of its capacity.

Because windiness is hard to predict, the electricity made here is worth less. In the complicated world of electricity pricing, power is valued two ways. The familiar one is as energy, meaning the work that the electric current can do. The second is as capacity, the amount that can be called upon as needed. Wind power is generally sold only as energy because most wind plants produce only 30 to 40 percent as much energy in a year as they would if they ran at full tilt, every hour of the year, a measure called "capacity factor." Unlike coal or nuclear plants, which achieve capacity factors of 90 percent or more, the wind operator cannot decide when the windmill will run.

If Public Service of New Mexico were to decide it needed, say, another 200 megawatts of power in coming years, it could not be assured it could meet demand by building 200 megawatts of wind machines.

Steven L. Clemmer, the research director at the Clean Energy Program of the Union of Concerned Scientists, said that for wind the rule of thumb is to multiply the maximum capacity of the wind machine by the capacity factor, so 200 megawatts of wind is worth only 60 to 80 megawatts of capacity. And while a gas plant can collect money from customers both for the kilowatt-hours it generates and for the reliable capacity it has standing by, wind farms like this one can collect only for the energy they make.

But with natural gas prices about three times the level of a few years ago, utilities are reluctant to build more gas plants. The immediate alternative may be coal, but its costs are becoming hard to predict because over the decades that a plant built now would be expected to run, regulations on the pollutants that cause smog and acid rain are likely to change, and regulation of carbon dioxide, a gas that is said to cause global climate change, also seems likely. So there is new debate about how to value wind, which has no fuel cost and no pollution emissions.

Two new theories are coming to the fore. One, expounded in January by researchers at the Lawrence Berkeley National Laboratory in California, is that if enough plants that run on renewable energy are built, the demand for natural gas will drop so much that the price will fall. That would seem to justify federal policies subsidizing

wind, because broad sections of the economy would benefit, although developers of wind plants would suffer.

Another idea is to spread wind plants geographically, so that if wind is low in one area, it may still be sufficient in another. Better data collection may also allow better forecasts.

A third is to install natural gas generators at the site of wind plants, to serve as backup, or to pair wind plants with old, inefficient natural gas plants elsewhere that might otherwise be retired.

Photos: Brent Mitchell, left, is a technician at the New Mexico Wind Energy Center, right, in House, N.M. The center is one of the largest in the country. (Photographs by Rick Scibelli Jr. for The New York Times)

[Copyright 2006 The New York Times Company](#) | [Privacy Policy](#) | [Home](#) | [Search](#) | [Corrections](#) | [Help](#) | [Back to Top](#)

..