



# VERMONT COMMUNITY WIND

Clean Power, Made & Used Here **Q&A**

## 1. Does wind power reduce greenhouse gas emissions?

It has been claimed that wind power does nothing to reduce greenhouse gases. Elaborate arguments are offered about “spinning reserve” and other matters relating to the electric grid that are not well understood by most people. VCWF has insisted that this is false, that wind generation added to the electrical grid will reduce greenhouse gas emissions.

Here is what the *Rutland Herald* found in interviews with experts at CVPS and the Vermont Department of Public Service:

“Even the basic question of what the technology can do for the environment seems to get mired in contradictory claims. Can wind power displace fossil fuel consumption, thus reducing the amount of greenhouse gases entering the atmosphere?”

“Of course, that’s the point,” say the developers. “No it can’t, because ...” reply anti-wind activists, before launching into explanations that sound arcane to those unfamiliar with the workings of the power grid. Whom to believe?

The short answer, according to experts who work for neither wind power companies nor anti-wind advocacy groups, is yes — building wind turbines will reduce emissions from fossil fuels.

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“I think you can, pretty straightforward, make a case that for every kilowatt-hour you make with wind, you’re not going to make one with fossil fuel,” said Dave Lamont, director for regional utility planning at the Vermont Department of Public Service.”

- *Rutland Herald*, “Does the wind blow enough?” August 23, 2009.<sup>1</sup>

According to the article, every kilowatt-hour of wind added to the Vermont grid would mean about a pound less carbon dioxide in the atmosphere. VCWF estimates that the production from the wind farm will be about 240,000,000 kilowatt-hours per year. This is the annual equivalent of saving 120,000 tons of carbon dioxide, or *3 million tons* of carbon dioxide over the expected 25-year life of the wind farm.

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<sup>1</sup> Link to *Rutland Herald* article:

<http://www.rutlandherald.com/article/20090823/NEWS03/908239997/1004/NEWS03>



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## 2. Does that fact that the wind does not blow all the time make wind power impractical?

It has been claimed that the intermittent nature of wind energy makes it unreliable, and therefore of little benefit. Some have claimed that wind power will contribute little or nothing and even place the reliability of the electricity grid at-risk.

VCWF has explained that wind power is the fastest growing new generation resource in this country and around the world. If it was of little benefit, why is it so popular?

Here is what the *Rutland Herald* found:

“[Bruce] Bentley [director of integrated planning and regional transmission at Central Vermont Public Service Corp.] said every kilowatt-hour of wind would mean about a pound less carbon dioxide in the atmosphere.

“If we had a lot of wind turbines, which we don’t, they could run and reduce oil and gas consumption,” he said.

Bentley said the region would have a problem if it had a lot of wind generation but no other plants to cycle up and down. The studies he’s seen indicate a region does not have that problem until at least 20 percent of its energy comes from wind.

New England’s load is roughly 27,000 megawatts, [Dave] Lamont [director for regional utility planning at the Vermont Department of Public Service] said, and wind accounts for only a “tiny fraction,” in the neighborhood of 1 percent.”

- *Rutland Herald*, “Does the wind blow enough?” August 23, 2009.<sup>2</sup>

In other words, wind currently contributes about 1 percent, or 270 megawatts to the regional grid. This can be expanded up to about 5,400 megawatts before the intermittent nature of wind might pose a challenge for utilities. VCWF proposes to add 80 megawatts to the grid at peak output. This means an additional 5,050 megawatts of wind can be installed *even after VCWF is on line* without any problems for the grid.

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<sup>2</sup> Link to *Rutland Herald* article:

<http://www.rutlandherald.com/article/20090823/NEWS03/908239997/1004/NEWS03>



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### 3. Are wind farms creating public health crises in Maine and in Europe?

It has been claimed that over 90 percent of people living within some distance (claims vary) of operating wind farms are suffering ill health, including some who have become “deathly ill” as a result of wind turbine noise. The State of Maine has been cited repeatedly as the source of much of the concern in this regard, with the Mars Hill wind farm the source of numerous complaints.

Here is an excerpt from a June, 2009 report from Dora Anne Mills, MD, MPH, director of Maine’s Center for Disease Control and Prevention (CDC) within the Maine Department of Health and Human Services (DHHS):

“In my review I found no evidence in peer-reviewed medical and public health literature of adverse health effects from the kinds of noise and vibrations heard by wind turbines other than occasional reports of annoyances, and these are mitigated or disappear with proper placement of the turbines from nearby residences. Most studies showing some health effects of noise have been done using thresholds of 70 dBA or higher outdoors, much higher than what is seen in wind turbines.

“Sleep disturbance is another commonly raised concern, and the WHO guidelines for community noise recommend that nighttime outdoor noise levels in residential areas not exceed 45 dBA, which is consistent with Maine law.”<sup>3</sup>

A Dutch-Swedish study conducted by Frits van den Berg, et.al, titled, *Visual and acoustic impact of wind turbine farms on residents*, was released in June, 2008. This study collected detailed responses from 725 Dutch residents living in proximity to wind farms and concluded:

“There is no indication that the sound from wind turbines had an effect on respondents’ health, except for the interruption of sleep. At high levels of wind turbine sound (more than 45 dBA) interruption of sleep was more likely than at low levels. Higher levels of background sound from road traffic also increased the odds for interrupted sleep.”<sup>4</sup>

Maine’s Mars Hill wind farm was permitted by a variance to reach up to 50 dB, to allow turbines to be located as close as 1200 feet (less than ¼ mile) from residences. Several other US wind farms have been permitted noise levels up to 55 dB, allowing turbines to be located even closer to residences. All existing

<sup>3</sup> Link to complete report by Dr. Mills: <http://www.maine.gov/dhhs/boh/wind-turbines-neuro-acoustical.shtml>

<sup>4</sup> Link to complete report by Dr. van den Berg: <http://www.windaction.org/?module=uploads&func=download&fileId=1615>



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residences in Clarendon, Ira, Poultney and West Rutland are a minimum of one-half mile from the nearest potential VCWF turbine location.

The Vermont Public Service Board (PSB) has limited noise levels at residences to 45 dB outside and 30 dB in sleeping quarters, which is substantially more protective than the Maine standard and matches the WHO recommendation.

VCWF must demonstrate that noise levels at residences will not exceed the PSB limits before a Certificate of Public Good is issued by the Public Service Board.



## 4. Do wind farms harm property values?

It has been claimed that VCWF will dramatically harm local property values, up to a 30 percent reduction. Only a few reports have investigated the degree to which views of and proximity to wind facilities affect surrounding property values, however, only one (from the United Kingdom) has been published in a peer-reviewed journal, and only two relied on field visits to potentially affected homes.

The most extensive and recent study was conducted by Ben Hoen and Ryan Wiser of Lawrence Berkley National Laboratory. The study analyzed 7,293 home sales transactions in 10 different states and 14 counties. Each of 10 study areas had at least 350 home sales transactions within 10 miles of the nearest wind turbine, spanning the period from before facility announcement to well after construction. Study areas were selected to capture a broad array of online dates, turbine sizes, topographies, house values, socioeconomic characteristics, and locations where wind energy development activity is significant. Based upon preliminary results the study found,

“•**Area Stigma:** We find no statistical evidence that homes near wind facilities are stigmatized by those facilities as compared to other homes in the region.

•**Scenic Vista Stigma:** We find no statistical evidence that homes with a view of wind turbines have different values than homes without such views.

•**Nuisance:** We find no statistical evidence that homes within ¼, ½ and 1 mile of turbines sell for different values than those further away.

**Bottom line:** Though one cannot rule out isolated cases where property values are negatively impacted, any such impacts within our sample are not widespread nor statistically identifiable.”

The study has been peer-reviewed and is scheduled for publication later this year.

VCWF will conduct an economic impact study for the Certificate of Public Good process, including expected impacts on local property values.



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## 5. Will the wind farm affect a community's status under the Vermont education funding system, i.e., will it make my community a 'gold town'?

Some folks fear that the state of Vermont will assess the value of the wind turbines in their town, and as a result treat the community as a "gold town" under Vermont's education finance system, in effect, wiping out all or most of the tax benefits VCWF would offer the taxpayers.

Under Vermont law (32 V.S.A. §5401(10)(j)), "Buildings and fixtures of wind-powered electric generating facilities" are exempt from the definition of "nonresidential property." This means the value of these wind-powered generating facilities do not appear on the town's Education Grand List, and have no affect on the town's state education funding or tax status. In short, the presence of buildings and fixtures of wind-powered electric generating facilities will have no impact residential or nonresidential school tax rates in the town<sup>5</sup>. VCWF estimates total Vermont education fund payments will be approximately \$720,000 per year. The statute reads as follows:

### ***Wind-Powered Electric Generating Facilities Taxation for Education Purposes***

#### **32 V.S.A. § 5401(10)**

*"Nonresidential property" means all property except:*

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*(J) Buildings and fixtures of wind-powered electric generating facilities taxed under section 5402c of this title.*

#### **§ 5402c. Wind-powered electric generating facilities tax**

*(a) A facility certified by the commissioner of public service as a facility which produces electrical energy for resale, generated solely from wind power, which has an installed capacity of at least five megawatts, which was placed in service after January 1, 2007, and which holds a valid certificate of public good issued under 30 V.S.A. § 248, shall be assessed an alternative education property tax on its buildings and fixtures used directly and exclusively in the generation of electrical energy from wind power.*

*(b) The tax shall be imposed at a rate per kWh of electrical energy produced by the certified facility, as determined by the public service department for the six months ending April 30 and the six months ending October 31 each year. The rate of the tax shall be \$0.003.*

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*(e) Unless buildings and fixtures are taxed under this section, they shall remain subject to taxation under section 5402 of this title. Buildings and fixtures subject to the education property tax under this section shall not be taken into account in determining the common level of appraisal for the municipality. (Added 2007, No. 92 (Adj. Sess.), § 25.)*

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<sup>5</sup> Source: Vermont Division of Property Valuation and Review.



## 6. Will the Vermont Community Wind Farm turbines in my town reduce property taxes?

Some have argued that town revenues touted by the developers will not materialize, and that if they are tied to power output they are totally at-risk if the wind does not blow or if mechanical or other problems limit electricity sales.

Since wind farms are exempt from the Education Grand List by state law, all property tax or other payments to the town are based on the Municipal Grand List, municipal tax rate and municipal (non-school) budget. VCWF is offering each host community a “host community payment” matching the best terms negotiated by any Vermont community with a wind farm that has received a Certificate of Public Good from the Public Service Board. This is currently the Deerfield project proposed for Searsburg<sup>6</sup> and Readsboro<sup>7</sup>. The agreements with these two communities call for:

1. Payment of property taxes using the standard ‘income method’ for commercial property;
2. Payment of an annual ‘supplemental payment,’ effectively guaranteeing at least \$11,000 per installed megawatt in total town tax and ‘supplemental’ revenue.

This is how it works. If the regular municipal property taxes would generate more revenue than \$11,000 per installed megawatt, then the town will receive the municipal property taxes. If the regular municipal property taxes generate less revenue than \$11,000 per year per megawatt then the town would receive the \$11,000 for each megawatt installed.

‘Installed megawatt’ is not related to electricity sales, and therefore not dependent upon the wind or operating condition of the equipment. It is tied to the manufacturer’s specification on the equipment, and does not change as long as the turbine is installed in the town.

What does this mean in terms of actual dollars to the town? This will vary depending upon the number of turbines installed and the size (megawatts) of the turbines in each town, neither of which are decided at this time. To get an idea, the following table shows ranges within which the final project design is likely to fit:

<b>TOWN</b>	<b>No. of Turbines (range)</b>	<b>Size of Turbines (range - MW)</b>	<b>Minimum Municipal Revenues</b>
Clarendon	0 - 4	1.5MW - 2.5MW	\$0 - \$110,000
Ira	15 - 30	1.5MW - 2.5MW	\$247,500 - \$825,000
Poultney	9 - 12	1.5MW - 2.5MW	\$148,500 - \$330,000
West Rutland <sup>8</sup>	2 - 3	1.5MW - 2.5MW	\$33,000 - \$82,500

How these new yearly revenues translate into lower town tax rates depends upon the Municipal Grand List and municipal budget in any year; however in Ira, even the lowest payment more than covers the entire current municipal tax budget, yielding a 2009 municipal tax rate of \$0.

<sup>6</sup> Full Searsburg Agreement: <http://www.state.vt.us/psb/orders/2009/files/7250attachmentc.pdf>

<sup>7</sup> Full Readsboro agreement: <http://www.state.vt.us/psb/orders/2009/files/7250attachmentb.pdf>

<sup>8</sup> West Rutland will receive additional revenues as a leaseholder and host of the substation.