

The Truth: Industrial Wind Power is NOT the answer

The following addresses in part many (but not all) of the issues raised by industrial wind turbine projects; the author is solely responsible for its contents. It does not purport to present either a complete or a balanced view of these issues. On the contrary, it is intended as a *wake-up call* to residents of Londonderry and of neighboring towns all of whom will be directly affected by the proposed industrial wind project on Glebe. This paper argues that:

- I. Wind Power is, at best, a symbolic gesture to halting climate change.**
- II. Wind Power is a financial windfall for developers and a rip-off for ordinary citizens.**
- III. Wind Power significantly threatens our area's character and residents' lives.**

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I. Wind Power is, at best, a Symbolic Gesture to Halting Climate Change

Those of you who believe proponents' claims that wind power will meaningfully contribute to fighting global warming are victims of an elaborate misinformation campaign. Wind power is, at best, a symbolic gesture. Wind power has not and will not play a significant role in providing energy for a very simple and indisputable fact—wind is variable and thus unreliable. When there is too little wind, too much wind or simply no wind at all, there is no energy.

The hard truth is that industrialized economies require reliable energy. Because wind is variable, it will not replace existing conventional and reliable sources of energy such as coal, nuclear power and natural gas. And because wind is variable it will not allow us to avoid or delay the building of additional conventional capacity to meet growing energy needs.

None other than James Lovelock, the eminent scientist and co-developer of the Gaia theory that views Earth as a self-regulating super-organism, feels that environmental groups are betraying the planet through their unswerving promotion of wind energy. Interviewed by the *Guardian* (5/22/05), Lovelock believes that nuclear energy offers the only solution to the twin challenges of global warming and providing a reliable energy supply. "To phase out nuclear energy just when we need it most to combat global warming is madness. They (i.e. Greenpeace, Friends of the Earth and the Green Party) are pursuing goals in which neither environmental good sense nor science play a part—a strange way to defend the earth."

Others both here and abroad are beginning to address the fundamental flaws of wind as an energy source.

On May 13th in remarks made while introducing his Environmentally Responsible Wind Power Act of 2005, Sen. Lamar Alexander (R-TN) said, "My studies suggest that at a time when America needs large amounts of low-cost reliable power, wind produces puny amounts of high-cost unreliable power. We need lower prices; wind power raises prices."

In response to a recent report by the German government's energy agency that concluded that wind farms are an expensive and inefficient way of generating sustainable energy, Sterling Burnett (senior fellow with the UK's National Center for Policy Analysis) said:

“There is simply no getting around the intermittency problem of wind power. The wind does not always blow, and its variability cannot be predicted on even a minute-by-minute basis. Even after constructing large wind-turbine complexes, one must have sufficient backup power generated by conventional power plants. This redundancy raises overall electricity prices. Moreover, wind farms harm the environment in their own right. It is not surprising that the German government is finally learning, the hard way, about problems with so-called green power, and is finally beginning to take its blinders off” (*Environment News* 6/1/05).

Reacting to the same study, Carlo Stagnaro (director of Italy's Istituto Bruno Leoni) remarked:

“The German study sheds light on the European illusion that the so-called ‘renewables’ may be a viable alternative to fossil fuels. In fact, the wind lobby has been able so far to push a lot of programs all across the Old Continent, the result: expensive, unreliable energy, a waste of taxpayers’ money and environmental degradation. Those supporting ‘renewables’ as alternatives to conventional power sources should be honest and tell us that what they actually advocate is addressing an uncertain, future threat—global warming—by creating the certain misery of uneconomical power sources that create their own scourge of environmental degradations” (*Environment News* 6/1/05).

Premier Bob Carr of New South Wales, Australia, has said, “you could have a wind farm across all the outback NSW...but it wouldn't provide the base-load power we need” (*Australian Times* 6/3/05).

The reference by Premier Carr to “all the outback” raises one of the most significant environmental costs associated with industrial wind turbines that should be noted here—wind requires more space per unit of capacity than any other power source. For example, in a normal *grid* setting that requires spacing on all four sides to avoid the disruptive effects of turbulence, the DOE estimates the average turbine (e.g. 1.5MW) requires 40 acres; the AWEA estimates 75 acres for the newer larger designs (e.g. => 2.3MW). Physicist Howard Hayden, professor emeritus of the University of Connecticut, is quoted in *Environmental News* (6/1/05), “Imagine a one-mile swath of wind turbines extending from San Francisco to Los Angeles. That land area would be required to produce as much power around the clock as one large coal, natural gas, or nuclear power station that normally occupies about one square kilometer.” Along ridgelines where side-to-side spacing is required, the normal placement of the 1.5MW turbine is approximately 8 per mile. Assuming the use of 1.5MW turbines operating at 27% of capacity (the avg. capacity factor from 137 U.S. facilities reporting to the EIA in 2003 was 26.9%), to produce (but importantly not replace!) the energy generated by Vermont Yankee would require 1,450 1.5MW turbines spanning 188 miles of ridgeline.

The bottom-line is we have to make do with the conventional and reliable energy sources we currently have and need for the foreseeable future. There is simply no silver bullet for halting climate change. Our efforts and financial resources must focus on reducing the emissions of the two principal sources of greenhouse gases, i.e. coal for electricity and oil/gas for transportation, as well as on making emissions free nuclear power safer. In particular, the *benefits* in reduced emissions of clean coal are enormous (e.g. the 1600 MW Mt. Storm plant in West Virginia, once one of the nation's dirtiest, has virtually eliminated SOX, NOX and mercury emissions). Clean coal, nuclear power and clean oil/gas will make a difference; wind power will not. Or in Lovelock's words, "I wouldn't be against them (i.e. wind turbines) if they actually worked" *Guardian* (5/22/05).

II. Wind Power is a Financial Windfall for Developers and a Rip-off for Ordinary Citizens

Common sense dictates that we should not subsidize an energy source that because of its variability is unreliable and offers little, if any, capacity value as a substitute for conventional, reliable energy sources. And yet, this is exactly what federal and state governments are doing. Moreover, the evidence strongly suggests that so-called *wind farms* are being built in the US primarily for tax avoidance purposes.

FPL Group, parent of FPL Energy, which with 45% market share is the largest owner of *wind farms* in the U.S., is the poster child of these tax subsidies. During 2002 and 2003 FPL Group paid NO federal income tax on reported profits exceeding \$2.0 billion due in large part to *wind farm* related tax benefits (e.g. the 5 year double declining balance accelerated depreciation and the Production Tax Credit). Accelerated depreciation allows wind developers to shelter income by writing-off equipment costs over only five-to-six years vs. the more normal 20 year period. The Production Tax Credit (which for 2005 is \$19 per MWh) allows developers a direct credit against tax liabilities over a ten-year period for every MWh of energy produced.

Federal tax subsidies to wind developers mean higher taxes to ordinary citizens and the amount is large. According to Sen. Alexander, the US Treasury Department estimates that should the Production Tax Credit alone be renewed each year for the next five years it would reimburse wind developers for 25% of their costs and cost taxpayers \$3.7 billion.

Many states are just as guilty as the federal government in subsidizing this fundamentally flawed energy source and the resultant rip-off of ordinary citizens. State incentives range from reduced state income tax (due to accelerated depreciation) and the elimination of property taxes on wind energy equipment to Renewable Portfolio Standards (RPS). RPS increase consumers' electric bills by providing an artificial and guaranteed market for high priced electricity produced from renewable energy facilities (including *wind mills*) assuring these facilities that they will not have to compete on price with energy available from conventional sources (e.g. coal, nuclear power, natural gas, hydropower, etc). In essence, RPS means that consumers are paying for both reliable energy, which is there when they need it, and renewable energy, which would otherwise be uncompetitive and uneconomic.

For obvious reasons, developers would prefer to talk about wind power's purported *green* benefits than their financial windfall. Interestingly, perhaps the best insight into what's really going on is provided by Exxon, which has decided not to invest in wind power because it depends on tax incentives. According to Scott Naumann, manager of Exxon's energy supply and forecasting division, when you strip out the handouts, investing in wind and solar energy would be nonstarters—"It's an uneconomic niche and our business is not built around the expectation of a bunch of subsidies to make a profit. We want a business that is robust on its own merits" (*Reuters, It's the Economics-Stupid 5/30/05*).

The bottom-line is the *n* in *green* replaced with a *d* becomes *greed* and characterizes wind power development; ordinary taxpayers and utility customers are footing a bill that amounts to hundreds of millions of dollars annually for an energy source that is about as effective in fighting climate change as a garden hose would be in dousing a 10,000 acre forest fire!

III. Wind Power Significantly Threatens our Area's Character and Residents' Lives

The proposed project consists of 27, 330'-388' tall, strobe lighted turbines along 3.5 miles of Glebe's ridgeline. To Londonderry and area residents the project would be the dominant physical feature of our environment; it will be a *presence*, an integral part of our daily lives. It is indisputable that the project will alter Londonderry's character and change residents' lives—the only issue is how.

Visual and Noise Impact

While some regard wind turbines as soaring symbols of our fight to halt climate change and aesthetically pleasing, the evidence (in the absence of any authoritative surveys) suggests many (and most likely a majority) regard wind turbines as a visual blight.

Shown three pairs of photographs by Beacon Hill Institute of the proposed Cape Cod project (130 turbines each 426' tall arrayed over a 24 square mile area located five miles off the coast and clearly visible from six towns), 70% of the 501 homeowners surveyed and 61.7% of the 497 tourists surveyed felt the project would worsen the view either "slightly" or "a lot." The percentage of homeowners in the "a lot" category (37.7%) was approximately double the corresponding % of tourists (18.7%).

Returning once again to the remarks made recently by Sen. Lamar Alexander (R-TN):

"The idea of windmills conjures up pleasant images-of Holland and tulips, of rural America with windmill blades slowly turning, pumping water at the farm well. But the windmills we are talking about today are not your grandmother's windmills. Each one is typically 100 yards tall, two stories taller than the Statue of Liberty, taller than a football field is long. These windmills are wider than a 747 jumbo jet. Their rotor blades turn at 100 miles per hour. These towers and their flashing red lights can be seen from more than 25 miles away."

Author's note: the rotor blade of the 1.5MW GE turbine at 20 rpm is 180 mph at blade tip.

In a 5/16/05 article entitled *Waymart Facility Troubles Residents*, Tom Venesky, staff writer for *The Citizens Voice*, describes the Waymart Wind Farm (43, 320' tall turbines atop Moosic Mountain in Pennsylvania's western Wayne County) as "Surreal...like something from a Road Warrior movie." This article contained the following comments of local residents:

Donald Goetz said, "It's not beautiful or complementary. From a distance it looks like hell. It's not an asset to the community. This is like a six-mile long fence."

Rose Marie Derk, who lives a mile from the turbines, said the noise and aesthetic impact have been significant. She said the turbines sound like a large industrial fan and the disturbance is more noticeable at night when there is no traffic. "When you go to bed and your windows are open, you're hit with this buzz and roar. People thought they'd get their electric bill reduced, but ours went up and we're getting nothing. I can't understand what anybody thought they'd get out of this. This company (i.e. FPL) came in, destroyed the top of the mountain and left us with it." She said a group of residents tried to warn the community about the negative aspects of the project—ranging from noise to aesthetics, but the damage has already been done.

[It is interesting to note that in a companion article by Venesky published the same day and entitled Wind Farms Remain Pricy Propositions, Mary Wells, community outreach manager for the Waymart project developer FPL Energy is noted as saying—the facility (i.e. Waymart) has a narrow profit margin. That's why federal tax credits are crucial toward making a new wind facility profitable. "We're a nation that has a huge demand for electricity and its increasing...FPL Energy believes there's room to make electricity that doesn't pollute. We (presumably parent company FPL Group) own coal, nuclear and gas power plants, but our (FPL Energy) focus is on wind. We believe in it, and we (presumably FPL Group) also know that shutting down coal and nuclear plants is unrealistic." Author's note- Wind power itself accounts for 24% of FPL Energy's business with the balance provided by natural gas (57%), nuclear (9%), oil (6%), hydro (3%) and other (1%).]

Local Economy:

It is no secret that the economies of Londonderry and the other towns that would be directly affected by the project are overwhelmingly dependent on tourism and second homeowners. It is also fair to say that tourism and second homeowners are inextricably linked—second homeowners begin as tourists, like the area and decide to stay. We also know from research conducted in 1998 why tourists visit Vermont and, presumably, why second homeowners decide to stay. The 1998 study (conducted by Vermont's Department of Tourism and Marketing) found that Vermont's tourist appeal or *brand* is a special combination of beautiful scenery, a peaceful experience, outdoor fun and great amenities.

The importance of Vermont's *brand* was emphasized by Jonathan Tourtellot, director of sustainable tourism for the National Geographic Society, in comments before the Vermont Travel Industry's 22nd annual conference last January. Tourtellot said that if Vermont preserves its unspoiled character it would be well positioned to tap the lucrative and growing market of people seeking unspoiled views, cultural arts, local crafts, specialty cuisine and original architecture. Tourtellot's message was clear—preserving Vermont's unique and

unspoiled character is good for business particularly as more and more pristine travel destinations are spoiled by development.

In November 2002 Scotland's National Tourism Board (www.visitscotland.org) released the results of a survey specifically undertaken to assess the linkage between wind turbines and tourism. Entitled *Investigation into the Potential Impact of Wind Turbines on Tourism*, the survey found that:

- (1) 80% of the visitors interviewed came to Scotland for the beautiful scenery and almost all said they valued the chance to see unspoiled nature.
- (2) 58% agreed that wind-power sites spoiled the look of the countryside.
- (3) Approximately a quarter said they would avoid parts of the countryside with wind developments (i.e. 15% answered categorically they would steer clear of an area with wind development and 10% said they would be 'less likely' to return to the Scottish countryside if the number of wind-power sites increased).

There is a wealth of anecdotal information from Europe and Australia that supports the proposition that wind turbines pose a real and present threat to tourism. One closer to home is available in Berkshire resident Eleanor Tillinghast's *Wind Turbines Don't Make Good Neighbors*. Ms. Tillinghast relates that in comments made on 3/30/04 to the Berkshire Regional Planning Commission (BRPC), Bill Wilson of the Berkshire Visitors Bureau stressed that extensive studies over 20 years suggest that people come to the Berkshires not to see industrial installations but for a scenic, rural and pastoral environment. He added that while there will always be someone willing to drive 150 miles to see a ball of twine, windmills will not put "heads in beds."

While, arguably, the presence of ski slopes on Glebe no longer qualifies Glebe as *unspoiled*, most would agree that there is a significant difference between ski slopes (which is what people come to Vermont to do!) and 27 strobe lighted turbines taller than the Bennington Monument. Prospective tourists and second homeowners have a choice and the direct linkage between preservation of area character and tourism (and presumably the appeal to second homeowners) should be a critical concern to Londonderry and neighboring towns. Anyone familiar with the economics of tourism knows that even a modest decline in visitors can have a dramatic effect on local revenues and, consequently, local jobs.

Property Values:

There are **no** authoritative studies that have determined the impact of industrial wind turbines on property values.

One of the most validated real estate precepts, however, is that significant natural views have premium value and intrusions on these views erode value. With respect to wind turbines, there is a wealth of anecdotal evidence (and I would add common sense) here and abroad that supports this precept. For illustrative purposes four anecdotes follow courtesy of Eleanor Tillinghast's *Wind Turbines Don't Make Good Neighbors*:

In 2001, a British District Judge found that wind power plants destroy the value of nearby homes. Judge Michael Buckley ruled that noise, visual intrusion, and flickering of light through turbine blades 550 meters away reduced the value of a neighboring home by 20%. According to the Times of London, he said, “The effect is significant and it has a significant effect on the property. It is an incursion into the countryside. It ruins the peace.”

Kyle Blue, a real estate agent working near a planned wind power plant in Tebay, England, said to a newspaper reporter, “To me, it is absolute common sense that if you put up huge industrial structures in an exceptionally beautiful area, property prices are going to suffer.” He then recounted that his agency had been “trying to sell a beautiful restored farmhouse. We told one prospective buyer about the wind farm and he said, ‘it doesn’t bother me. My family and I are very green and supportive of this kind of energy.’ Then he went away and visited wind farms all over the country. Three weeks later he came back to us and said he couldn’t come to terms with the development after all. We had to take the property off the market and it remains unsold.”

Another real estate sales manager, Bruce Falk, had major difficulties selling a property near the Toora plant. “I would have shown 50 to 60 people through that property and I would say half of those wouldn’t even look at the place once they realize it’s in the vicinity of wind turbines. And half of the other 50 percent were concerned about resale so they offered 20% less than the price the owners would accept.”

In Lowell, Vermont, Enxco is proposing a wind turbine development. Lowell realtor Don Maclure told Enxco’s Mr. Zimmerman that Zimmerman’s claim that the value of a farm near the proposed site won’t decrease is “ludicrous.” Maclure said that when he tells people interested in buying the farm about the proposed project he never hears from them again.

The effect of proximity (the closer to the turbines, the lower the value) and view (with more expensive homes suffering proportionately more) on home values is evident in numerous other available anecdotes. Depending on the characteristics of particular properties, price declines (or estimated price declines) generally fall in the range of 5%-30% with even greater declines on record. The only instances (I’ve come across) of price increases apparently involve speculation—the buyer thought the wind developer would expand the project and wanted to generate lease income.

Other Issues:

There are a host of other *cost* issues raised by industrial wind turbines that deserve your attention but are not addressed here. Among them are the physical disruption at the site itself (huge cement foundations, clear cutting around each turbine, road construction, clearing required for transmission lines, etc.), the destruction/disruption of wildlife habitats, bird and

bat kills, water runoff, as well as the adverse effects on one's health caused by noise and light *flicker*.

I have also not addressed two purported *benefits*, municipal taxes and jobs, because both are insignificant in the context of the aforementioned real and potential costs to our community, our environment, our lives and livelihoods as well as our pocket books. From what I can gather, the reduction in municipal taxes for the average resident would be equivalent to one very quick trip to Clark's IGA. On the job front, the national average (according to the National Renewable Energy Lab) is one maintenance employee for every 12-15 turbines. During construction, local excavators would undoubtedly find some work for +/- six months. Most of the construction costs consist of the equipment itself and the skilled technicians imported (normally from out-of-state) to assemble the turbines.

Accountability...what's Next?

The Public Service Board (PSB), consisting of three individuals appointed by the Governor, will decide the fate of Catamount's project application. While its review of the project must consider the applicability of several Act 250 type criteria and it may or may not impose other conditions, the PSB has the authority to do what it wants to do. Importantly, the PSB can overrule *local objections* if it deems the project (with or without PSB imposed conditions) *in the public good*.

The cynics amongst us will remain unengaged, content to let Montpelier decide yet again how we should live our lives. This cynicism is understandable. Perhaps more so than in any other state Vermont's government has become *of Montpelier, by Montpelier, for Montpelier*.

What this cynicism overlooks, however, is that we as voters are accountable for this state of affairs. We elected the people who have usurped any pretense of local control over local affairs. And agencies such as the PSB are accountable to individuals (in this instance, the Governor) elected by us. Our prospective votes and, consequently, our *voice* still matter.

As a subscriber to the old adage that winners don't quit and quitters don't win, I intend to make my voice heard. I'm part of the public and the project *is not in the public good*. It threatens my home, my community, my environment and the quality of my life for no useful purpose—it won't make a hoot of difference in halting climate change and is a financial rip-off to boot.

This won't be an easy fight to win. Political momentum, supported by some among a well-intentioned but ill-informed public, is on the side of wind proponents. That will make victory for us that much sweeter. A public service will have been rendered not just to our neighbors but to all those threatened by this fraud. I invite you to join me and many of our neighbors in this fight.