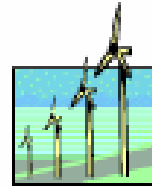


WIND ENERGY EDUCATION PROJECT
A collaborative of
Pace Law School Energy Project
Citizens Campaign for the Environment
New York Public Interest Research Group



Wind Energy Frequently Asked Questions

WHY WIND ENERGY? Wind energy is free from both harmful emissions and the high cost of fuel. Electricity is largely produced by the combustion of fossil fuels like coal, oil or natural gas, which releases harmful air pollutants such as nitrogen oxides (NO_x), sulfur dioxides (SO_x), carbon dioxide (CO₂), and fine particulate matter. Coal power plants also emit large amounts of mercury, a toxic heavy metal that poisons our fish and wildlife. These dangerous air emissions have been linked to acid rain, global warming, and respiratory problems such as asthma.



IS WIND ENERGY RELIABLE? Yes, because the amount of wind available to generate electricity is measurable and forecastable. Before a turbine is proposed for siting, measurements are taken to ensure there is adequate wind. Additionally, weather forecasting enables calculations to be made determining how much electricity will be produced from a turbine ahead of time. Wind provides 10-15% of the electricity for Denmark and other European Countries without reliability problems or the need for additional back-up power plants.¹ Analysis by the Utility Wind Integration Group reveals that there are no fundamental technical barriers for wind power to supply 20% of peak electricity demand.²

WILL WIND FARMS AFFECT LOCAL PROPERTY VALUES? Recent property studies have shown that wind farms have no negative impact on local property values. Some studies, such as the Renewable Energy Policy Project (REPP), monitored the property values within the view shed of a wind park within the U.S. The REPP study found that most properties in these areas actually gained value at a faster rate than comparable homes outside of the view shed, including the Fenner wind farm in Madison County, NY.³ The REPP Study is available at http://www.repp.org/articles/static/1/binaries/wind_online_final.pdf

ARE WIND TURBINES NOISY? While noise was a serious concern for older turbines, technological advancements in design have drastically reduced noise pollution. At 750 feet, wind turbines are no noisier than a new household refrigerator.⁴ The noise comes from wind passing by the turbine hub and blades and the gears of the turbine-generator. The aerodynamics of the blades has changed and now turbines are much quieter, similar to a light whooshing or swishing sound. This advancement in the technology of gears has virtually eliminated the low tonal sound.

CAN A WIND FARM BENEFIT THE LOCAL ECONOMY? Yes! Wind farms can revitalize the economy of rural communities, providing steady income through lease or royalty payments to farmers and other landowners. The developer also pays the town, county and school districts. Additionally, wind parks have shown to be highly visited tourist destinations.

WILL WIND ENERGY BE EXPENSIVE? Unlike fossil fuel sources that depend on market variations, wind energy is stable because there are no "fuel" costs. The price of oil and gas has increased significantly in recent years, while the price of wind energy has declined steadily as a result of improved technology and lower costs. The market price of traditional sources of energy such as fossil fuels and nuclear energy does not include the costs to society, which we all pay for. These costs include dead lakes from acid rain; increased rates of lung disease and heart disease

from urban smog and soot; ruined marine coasts from oil spills; contaminated drinking water, rising sea levels, and extreme weather events from global warming; mining impacts and national and global depletion of finite energy sources; nuclear waste disposal; learning disabilities and damaged ecosystems from mercury poisoning; and much more.



DO WIND TURBINES HARM BIRDS? Current studies demonstrate that modern wind turbines have relatively little impact on birds and the environment, and can range from less than one bird per turbine per year to 7.5 birds per turbine per year.⁵ Older wind turbines killed birds due to outdated turbine design and technology. In the early days of wind power, turbines were often built with a lattice design—allowing birds to perch on the turbine beside the blades—and the blades had a very rapid rotation. Modern turbines have a sleek base which

prohibits birds from perching, and have blades that are much larger and rotate much slower. The slower rotation enables birds to avoid the structure.

DO WIND TURBINES THROW ICE? No, since ice buildup slows a turbine's rotation, new wind turbines have a control system to sense the change and cause the turbine to shut down.

WILL WIND POWER REALLY OFFSET POLLUTION? Yes. By providing clean and green electricity in to the grid, this displaces the need for dirty energy from fossil fuel power plants. For example, a 140 mega-watt wind park is estimated to annually offset nitrogen oxide and sulfur dioxide, precursors to smog and acid rain by 515,000 lbs and almost 1.40 million lbs, respectively. Additionally, 383 million lbs of carbon dioxide, the chief green house gas contributing to global warming, would be displaced.⁶

WHAT HAPPENS WHEN WINDS ARE TOO STRONG OR TOO WEAK? The turbine will begin spinning at around 7mph, and when the winds become too strong, around 55mph, the turbine will stop.

IS WIND ENERGY HEAVILY SUBSIDIZED WITH TAXPAYER DOLLARS? Every energy technology is subsidized to varying degrees, and coal and oil have been subsidized for many decades. In the President's 2007 budget, he provided tax incentives of \$444 million to coal and other fossil fuel generation, \$392 million to nuclear energy, and just \$44 million to wind development.⁷ Wind projects in New York receive a federal tax credit and may be eligible for state funding as well.

1. *Utility Wind Integration Group, with American Public Power Association, Edison Electric Institute, and National Rural Electric Cooperative Association. Utility Wind Integration State of the Art. May 2006. www.uwig.org*

2. *Ibid*

3. *Renewable Energy Policy Project, The Effect of Wind Development on Local Property Values, May 2003*

4. *The Scottish Office, Environment Department, Planning Advice Notice, PAN 45, Annex A: Wind Power, A. 27. Renewable Energy Technologies, 1994.*

5. *American Bird Conservancy Wind Energy Policy and Wind turbines a breeze for migrating birds. New Science. June 18 2005. www.abcbirds.org/policy/windpolicy.htm,*

6. *New York State Energy Research and Development Authority. Large Wind. Frequently Asked Questions. Page 10. The one MW example is multiplied by a factor of 140 to illustrate the potential environmental benefits of a large (140 MW) wind farm.*

<http://www.powernaturally.org/Programs~ind/largewindfaqs.pdf>

7. *Environmental News Service. Bush 2007 Budget Undermines Nuclear. Cuts Environmental Programs. February 2006. <http://m.ens-newswire.com/ens/feb2006/2006-02-06-06.asp>*