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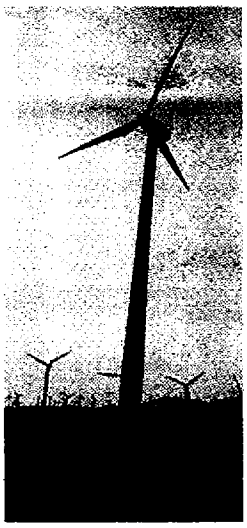
The True Cost of Industrial Wind



By: Gary A. Abraham, Esq.

Most Americans believe that society should utilize all forms of renewable energy to achieve important social and policy goals. The two principal goals most often stated are to reduce our dependence on foreign oil and reduce CO2 to avoid spiraling climate change. Will industrial wind meaningfully help achieve either of these goals?

Wind farms generate electricity, and they compete with coal, hydropower and natural gas, but not oil. In the U.S. about one percent of electricity comes from burning oil, less than one percent from wind, biomass and solar, and the rest from domestic sources: coal, hydropower and natural gas. So building wind farms will have no meaningful effect on reducing our dependence on foreign oil.

It is more complicated to understand why industrial wind cannot meaningfully reduce CO2. It is very difficult to determine how much coal (the worst CO2 emitter) and natural gas (next worse) is displaced by a wind farm. The first thing to understand is that wind farms generate very little electricity. The industry says they can operate at 30-40% capacity, already one the least effective energy sources. (Why? Because like solar, wind isn't always available.) By contrast, coal-fired and natural gas-fired power plants operate at 80-90% of maximum capacity, hydro power at 90%, and nuclear at 90-99%.

Second, the effective capacity of land-based wind farms in New York is 10%, according wind turbine manufacturer GE Energy. That's because the wind blows best in the winter and at night, but the electric grid demands the most in the summer and during the day. For weeks during the summer wind produces 0%, and in the winter much of what is generated is never used. Thus, while a wind farm can have an "installed" or nameplate capacity comparable to a medium-sized coal-fired power plant like the Huntley Plant in Tonawanda of 100 megawatts (MW) capacity, the Huntley Plant can be relied on for 80 MW, but the wind farm will generate 10 MW annually and cannot be relied on.

Third, because of its on-again off-again nature, most of the capacity of wind farms must be maintained in the form of conventional power plants, and these must be ordered by the grid operator to ramp up or down as the wind blows, at some added expense passed on to utility ratepayers, and with more pollution than if those plants operated steadily.

Fourth, with our new cap-and-trade system, carbon credits are given to wind farms, and they sell the credits to coal-fired power plants, increasing coal plants' CO2 more than what was planned. For this reason, it has recently been suggested in Europe, which has a much higher proportion of installed wind energy than the U.S., commercial wind energy has not reduced CO2 emissions "by one gram."

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Wind Farms

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Why, then, are so many wind farms being built? In a word, public money. Wind farms get most of their revenue from state and federal tax credits and grants, and cash-strapped rural towns and schools and local IDAs sponsoring such projects will not turn down even the tiny portion of this that trickles into their community. Let's be clear about where the benefits of wind lie: no electricity is provided to the host community, it all flows into the regional electric grid and most goes from there to urban areas. No decent permanent jobs are created: after about one year of construction, using mostly out-of-area contractors, the wind farm leaves behind a few low-wage, no benefits part-time inspector jobs. These inspectors might call a remote control location if there's a problem, but they are not trained to operate, maintain or fix wind turbines. The benefits are entirely financial; no effect on oil, minimal effect on greenhouse gas, little electricity.

Now, let's drill down into the tax credits and grants. The two largest are in the federal tax code. First, wind farms get a depreciation allowance for 100% of the cost of the facility, written off as a tax credit over five years. This is very generous, as most businesses get the same write-off but over 15 years. Today it costs about $3 million per turbine, or about $100 million to put up a 33-turbine wind farm. But it doesn't cost a penny in the end to put it up because that expense is paid by the federal government. How can wind farms that do not generate that much revenue from selling electricity use this credit? They don't: these credits are transferable, and the parent company and its subsidiaries, sometimes invested in very polluting industries, use the credits. In fact, wind farms are largely tax investment schemes to reduce tax liability of very different companies.

The second large tax benefit is the Production Tax Credit, which provides 2.1 cents per kilowatt-hour generated, or about $1 million per year for the 33-turbine wind farm generating 10 MW per year. This too is transferred to other companies. However, the new Stimulus Bill makes the PTC even more lucrative. The wind industry went to Congress complaining that poor credit markets have made it difficult to finance wind farms, and the PTC should be transformed into an outright grant, and Congress agreed. Now a wind farm operator can elect to take a check from U.S. Treasury for 30% of the cost of the facility (about $333 million for our 33-turbine wind farm) instead of the PTC, payable as a lump sum in the year the wind farm is put into service.

In other words, wind farm operators can now get 130% of what the wind farm cost from the federal government. New York provides comparable tax credits and grants against New York income tax. Among these benefits is about $175 million per year that NYSERDA takes from utility ratepayers in a special service charge. Most of that is awarded to wind farms as grants. (If you choose to pay for renewable energy on your utility bill, that's extra.)

It gets better: In New York, wind farms are exempt from property tax and sales tax for 15 years. The county, school district and town where the wind farm is located can "opt out" of the tax exemption, but then the local industrial development agency (IDA) helps finance the project and it is tax exempt anyway. Once an IDA sponsors the project, the wind farm developer must negotiate a "payment in lieu of taxes" agreement (PILOT), typically for a fraction of the taxes that would otherwise have been due. IDA takes a hefty fee, about $400,000, and the rest is divided up among the three municipalities according to their pro-rata share of the foregone tax. This means the host town, which feels most of the adverse effects (e.g., degradation of roads, turbine noise, wildlife displacement, bat kills) gets the least money, unless the IDA, school and county all agree differently. Schools make out the best.

The local financial benefits should be seen for what they are: a transfer of billions in public money from federal and state taxpayers to a small number of local landowners leasing their land (for about $8,000 per turbine per year), the host school, town and county. This leaves out most of us, even in rural New York. Even if you live in a community with a wind farm, you can expect to get a local tax savings of about $2 per day, but your utility rates are likely to go up that much as a result of wind farms.

Gary Abraham is a practicing environmental attorney and has written a number of articles for this publication on environmental issues.

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Corrections: The Niagara Power Project has a rated capacity of 2,400 MW; there are 104 operating nuclear power plants in the U.S., with an average rated capacity of about 940 MW; The Huntley Power Station in Tonawanda has a rated capacity of 380 MW.