

Global Warming and Industrial Wind Energy Development

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As an ecologist, I've known about global warming since the 1970's, especially in the work of certain marine scientists who began studying and modeling global carbon cycling forty years ago.

The earth's fossil record makes it clear that the earth has cycled back and forth between warmer epochs and colder throughout its history. At certain times the earth has been tropical to the poles.

There is no doubt that we are in a significant warming stage and that the human role in this is critical, by releasing to the atmosphere enormous amounts of carbon locked up by trees and plants eons ago into oil and coal. Not only the burning of fossil fuels, but the destruction of forests also disturbs the carbon balance, on the other side. Forests are carbon "sinks," reabsorbing carbon from the atmosphere and locking it up again into wood and leaves, cellulose and lignin. The energy in wood is the sunlight of past summers, but the substance is carbon from the air.

Global warming means not only more marked heat waves and melting glaciers and ice caps, but also increased variation in the weather. There is more energy in the atmosphere and hydrosphere not only for high temperatures, but also for more air movement, more wind, more storms, and greater swings between warm and cold, as air masses replace each other quickly and vigorously.

But wind generation is not the solution, even in a gustier world.

The reason? Wind energy can only provide a tiny and insignificant fraction of the electric capacity or load demanded by our dense and energy-hungry population. Wind energy is a random dusting of sugar on the cake of the real energy producers, which are hydro, nuclear, and, currently, coal.

Why? Air has little mass, so it has little power, little energy in it, even when it is moving fast. Contrast wind to the power of moving water. Water has lots of mass – it's heavy. You need mass to get momentum to get power and energy. Basic physics.

Why else? You can't store air, pile it up behind a dam and let it flow through a turbine when energy is needed – unlike water. Wind power is the only form of generation that comes on-line when it wants to (when it blows), not when it is needed. Unlike small-scale wind generators, there's no battery storage for big wind turbines, for power produced at times when power is not needed. Supply and demand have to be matched at all times.

Wind is a power grid operator's nightmare, because of the way the wind comes up and dies down on a minute-to-minute basis. The power grids of North America, Europe, and elsewhere need steady, predictable power that can be geared up and down according to the known and predicted energy needs of homes, businesses, and industry.

We need to do a lot about global warming, but things that will help.

The federal and state governments in the US are pouring huge amounts of money into tax subsidies for wind energy development. Let us use taxpayer money for projects that will help global warming, rather than just helping Goldman Sachs, JP Morgan, General Electric, Florida Power and Light, and others to improve their bottom line.

First, conservation: of electricity, heating oil and gas, and fuel for transportation. I live in rural, cold, poor northern NY State. In whatever way people heat their houses here – fuel oil, biofuel, natural gas, wood, wood pellets, or electricity – carbon is released (except for the electricity that comes from a power dam – but try separating those electrons from the fossil-fuel-generated ones). How sensible it would be to insulate all the fine, old 19th-century houses here, which people live in. There's no money for it, though; it's all going to wind developers and their financiers.

With regard to transportation: How about a subsidy to allow people to replace their gas-guzzling pick-ups and SUV's with fuel-efficient cars? How about a hefty tax on those who don't avail themselves of the subsidy? How about a good national and regional rail system, to get all those diesel belching tractor-trailers off the highways? And what would be saved carbon-wise for road construction, if all that freight ran on steel rails?

With regard to electricity, a similar subsidy-and-tax arrangement could encourage the use of efficient appliances, such as air conditioners and lights. And perhaps, one of these years, we'll turn off the orange glow over our cities and towns.

With regard to carbon-free electric power generation, we are going to have to build new nuclear plants in the next several decades whether or not we first waste money and land on the wind energy fiasco. People don't like the idea of nuclear – it seems to give them the willies. But nuclear plants have an excellent safety record in North America and Europe (not, however, the former Soviet Union, which we now know built reactors without containment). And they produce lots of electricity, steadily and on demand. People tend not to notice when they live right near them.

The cost of large scale wind energy development is the destruction and fragmentation of untold amounts of animal and human habitat – woods, wetlands, forests, fields, and air. The air of the bird flying, the bat hunting, the quiet air of rural homes. And after all that – still no impact on emissions. But a great tax shelter, and a great way for power companies to get “carbon credits” to start their coal-burning stinkers back up again.

If you thought a coalition of government, industry, Wall Street, environmentalists, and the rural poor was too good to be true — you were right. It's the perfect storm, conjured up by Enron.