

T. Boone's Windy Misadventure And the Global Backlash Against Wind Energy

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Three years ago this month, T. Boone Pickens launched a multi-million dollar crusade to bring more wind energy to the US. “Building new wind generation facilities,” along with energy efficiency and more consumption of domestic natural gas, the Dallas billionaire claimed, would allow the US to [“replace more than one-third of our foreign oil imports in 10 years.”](#)

Those were halcyon times for the wind industry. These days, Pickens never talks about wind. He’s focused instead on getting a fat chunk of federal subsidies so he can sell more natural gas to long-haul truckers through his company, Clean Energy Fuels.

(Pickens and his wife, Madeleine, own [about half of the stock](#) of Clean Energy, a stake worth about \$550 million.) While the billionaire works the halls of Congress seeking a subsidy of his very own, he's also trying to find a buyer for the \$2 billion worth of wind turbines he contracted for back in 2008. The last news report that I saw indicated that he was trying to foist the turbines off onto the Canadians.

Being dumped by Pickens is only one of a panoply of problems facing the global wind industry. Among the issues: an abundance of relatively cheap natural gas, a growing backlash against industrial wind projects due to concerns about visual blight and noise, increasing concerns about the murderous effect that wind turbines have on bats and birds, the extremely high costs of offshore wind energy, and a new study which finds that wind energy’s ability to cut carbon dioxide emissions have been overstated.

Yeah, that’s a long list of things. But the mainstream media rarely casts a critical eye on the wind industry. So bear with me for a few minutes. And in doing so, consider how the backlash against industrial wind is playing out in Wales, where, on May 27, the [BBC reports that some 1,500](#)

[protesters](#) descended on the Welsh assembly, demanding that a massive wind project planned for central Wales be halted.

Earlier this month, Robert F. Kennedy Jr. came out with another broadside (this one in the Wall Street Journal) against the Cape Wind project off Cape Cod, not far from the Kennedy clan's place in Hyannisport. Kennedy says New England shouldn't put [130 wind turbines in Nantucket Sound](#), instead, it should import hydropower from Canada. He neglected to say that Cape Wind likely won't ever get built because the Department of Energy is withholding its financing of the project.

Over the past few days, protesters in Denmark have been camping on a wooded tract in Northern Jutland in order to [prevent the clearing of a protected forest](#) where the government plans to build a test center that aims to install a series of wind turbines 250 meters high.

The increasing opposition to industrial wind projects – opposition that's coming from grassroots organizations all over the world – should be a wake up call for advocates of renewable energy. Instead, the wind industry's apologists continue to claim that they are victims of a conspiracy, and that they are under attack from the "fossil fuel industry." That's been the typical response from the American Wind Energy Association (AWEA) and its hirelings, who prefer to use character assassination rather than engage in factual debate.

Here's the reality: the wind industry is under a full-blown attack from market forces. Those markets are economic, political, social, and environmental. And the wind scammers are losing on nearly all fronts.

Let's start with natural gas.

Few people know the natural gas business better than Pickens, and he'll tell you that himself. Many times. Two years ago, shortly after he launched his high-profile plan, Pickens said natural [gas prices must be at least \\$9](#) for wind energy to be competitive. In March 2010, Pickens was still hawking wind energy, but he'd lowered his price threshold saying "[The place where it works best is with natural gas at \\$7.](#)" By January of this year Pickens was complaining that you can't "[finance a wind deal unless you have \\$6 gas.](#)"

That may be true, but [on the spot market, natural gas now sells for about \\$4.50](#) per million Btu. Today's relatively low natural gas prices are a direct result of the drilling industry's new-found prowess at unlocking galaxies of methane from shale beds. Those lower prices are great for consumers but terrible for the wind business.

The difficulties faced by the wind industry are evident in the numbers: Last year, total US wind generation capacity grew by 5,100 megawatts, about half as much capacity as was added in 2009. During the first quarter of this year, new wind installations totaled just 1,100 megawatts, indicating that this year will likely be [even worse than 2010](#).

For its part, the wind industry continues to claim that it's creating lots of "green" – oops, I mean "clean" – energy jobs. Last year, after the lame-duck Congress passed a one-year extension of

the investment tax credit for renewable energy projects, AWEA said it would [“help save tens of thousands of American jobs.”](#) Perhaps. But those jobs are so expensive that not even Pickens could afford many of them. Last December, about the same time that Congress was voting to continue the wind subsidies, Texas Comptroller Susan Combs reported that tax breaks for wind projects in the Lone Star State [cost nearly \\$1.6 million per job](#). And that “green” job bonanza is happening in Texas, America’s [biggest natural gas producer](#).

Few people in the Obama administration have been more fulsome in their backing of wind than Energy Secretary Steve Chu. A few weeks ago, while at the Aspen Institute, I ran into Chu at a cocktail party. During our conversation, Chu casually dismissed the widespread opposition to industrial wind projects as a bunch of “NIMBYs.” (That is, “not in my backyard.”)

If Chu had done even the smallest bit of homework, he would know that [the European Platform Against Windfarms now has 485 signatory organizations](#) from 22 European countries. In the UK, where fights are raging against industrial wind projects in Wales, Scotland, and elsewhere, [some 250 anti-wind groups have been formed](#). In Canada, [the province of Ontario alone has more than 50 anti-wind](#) groups. The US has about [170 anti-wind groups](#).

Over the past year or so, I have personally interviewed people in Wisconsin, Maine, New York, Nova Scotia, Ontario, the U.K., New Zealand, and Australia. All of them used almost identical language in describing the health problems caused by the noise coming from wind turbines that had built near their homes.

Janet Warren, who was raising sheep on her 500-acre family farm near Makara, New Zealand, told me via email that the turbines put up near her home emit “continuous noise and vibration” which she said was resulting in “genuine sleep deprivation causing loss of concentration, irritability, and short-term memory effects.” A few months ago, Warren and her family decided they couldn’t stand to live with the noise any longer and moved out of their home to another location.

Or consider the case of Billy Armstrong, a plumbing and heating engineer who lives in County Durham, England. Armstrong must endure the noise from several wind turbines that were recently installed 800 yards from his home. When we talked by phone, Armstrong told me that he is frequently awakened by the noise from the turbines, particularly during the summer months. What is his advice for other rural landowners facing the prospect of wind turbines being built near their homes? His reply: “Fight them. Don’t let them do it.”

The problems associated with low-frequency noise caused by wind turbines is finally getting proper attention from the scientific community. The August issue of the journal [Bulletin of Science, Technology & Society](#), has nine articles that address various aspects of the turbine-noise issue. The most important: low-frequency noise, also known as infrasound. Although inaudible to most humans, infrasound can cause a number of maladies including headaches, sleeplessness, and vertigo.

One of peer-reviewed articles that appears in the *Bulletin of Science, Technology & Society*, is by Carl V. Phillips, a Harvard-trained PhD. Phillips concludes that there is [“overwhelming evidence](#)

[that wind turbines cause serious health problems](#) in nearby residents, usually stress-disorder type diseases, at a nontrivial rate.”

Among the most prominent critics of the wind industry on the noise issue is Dr. Robert McMurtry, an Ontario-based orthopedic surgeon. McMurtry has impeccable credentials. He’s a fellow of the Royal College of Surgeons of Canada. Earlier this month he was named a [Member of the Order of Canada, the country’s highest civilian award](#).

Over the past two years, McMurtry has spearheaded the effort to stop industrial wind projects in Ontario while also leading efforts to get peer-reviewed medical studies done on the deleterious effects of turbine-produced infrasound. “The people who are forced to live near these turbines are being abused,” McMurtry told me a few months ago. “It is compromising their health.”

But the wind industry has taken a stand: never mind the science; ignore the complainers. That’s the stance taken by AWEA and other wind lobby groups who continue to deny that there are any problems with wind turbine noise and that those who are complaining merely need psychological counseling. In late 2009, AWEA and the Canadian Wind Energy Association, [published a paper which attempted to quiet critics on the noise issue](#), by declaring that “There is no evidence that the audible or sub-audible sounds emitted by wind turbines have any direct adverse physiological effects.” It also suggested that the symptoms being attributed to wind turbine noise were psychosomatic and declared flatly that the vibrations from the turbines are “too weak to be detected by, or to affect, humans.”

And lest you think that the research being done on wind turbine noise is collegial, think again. Last year, during a webinar that was sponsored in part, by the National Renewable Energy Laboratory, an arm of the US Department of Energy, Geoff Leventhall, a consultant who was working for AWEA, said that one of the researchers who has been investigating the health effects of infrasound caused by wind turbines was “stupid.”

If that’s the case, then there are thousands of stupid people protesting against industrial wind, and they are located all over the world. Here’s a small sampling of recent news:

-- Last November, five people, several of them from Earth First! were arrested near Lincoln, Maine, after they blocked a road leading to a construction site for a 60-megawatt wind project on Rollins Mountain. According to a story written by Tux Turkel of the *Portland Press Herald*, one of the protesters carried a sign which read [“Stop the rape of rural Maine.”](#)

-- On May 12, the first industrial wind facility proposed for rural Connecticut was rejected by the state’s siting council, which said the “visual effects” of the project were [“in conflict with the policies of the state.”](#) The project had been vigorously opposed by Save Prospect, a group founded by an affable [high school teacher named Tim Reilly](#).

-- Denmark, the supposed Valhalla of wind energy, is seeing fierce opposition to the energy sprawl required by wind. On July 22, 2010, the Danish paper *Jyllands-Posten* reported that there are some 40 anti-wind groups in Denmark and that “more and more neighbors are protesting against new, large wind turbines.” It cited the Svendborg city council which recently refused to

provide a permit for turbines over 80 meters high, after a local group “protested violently against two wind turbines” that had been erected a few months earlier. The story continued, saying that “neighbors complain especially about the noise” from the turbines. It then quoted the town deputy mayor as saying that due to “the violent protests and the uncertainty of low-frequency noise” coming from the turbines, the town would “not expose our citizens” to large wind turbines.

-- Last August, the Danish Society for Nature Conservation filed a complaint with the European Union in order to [stop the parliament’s move to install 250-meter high wind turbines in a protected area in northern Jutland](#). According to the Danish press, the government is going ahead with the plans for the wind turbine testing center, and in recent days, [Danish police have been forced to call in reinforcements](#) because [more than 30 protesters](#) have been camping in the forest to prevent the project from going forward.

-- Last September, the *Copenhagen Post* reported that “State-owned energy firm Dong Energy has [given up building more wind turbines on Danish land, following protests from residents complaining about the noise the turbines make](#).” The article quotes company CEO Anders Eldrup, as saying “It is very difficult to get the public’s acceptance if the turbines are built close to residential buildings, and therefore we are now looking at maritime options.”

-- Residents of Falmouth, Massachusetts, a small town on Cape Cod, continue to complain about noise coming from a 1.65 megawatt turbine that was installed in their town. The [July 12 issue of the Cape Cod Times](#) quotes Falmouth resident Neil Andersen, who says that at certain times, the turbine “gets jet engine loud...To put it simple, they drive one crazy.”

-- Residents of [Vinalhaven, Maine](#) continue to complain to state and local officials about the noise coming from turbines erected in their town. And some residents have chosen to abandon their homes rather than continue to live with the noise.

Of course, the wind industry claims that it has huge opportunities offshore. That’s true if money is no object. Building offshore wind projects costs about [\\$5,000 per kilowatt](#), or about the same as a new nuclear plant, even though a nuclear plant will have a capacity factor at least three times that of the wind project. Put another way, building offshore wind costs about five times as much as the \$1,000 or so per kilowatt needed for a new natural gas fired generator.

Those high costs will mean high costs for ratepayers. The likely cost for electricity from Cape Wind, the controversial wind project located off of Cape Code, will be about \$0.21 per kilowatt-hour – if that project ever gets built.

Last year, an offshore project off the coast of Rhode Island, Deepwater Wind, was [rejected by that state’s public utility commission](#) because the cost of electricity from the project was expected to be \$0.244 per kilowatt-hour with annual increases of 3.5% per year. For reference, [the average retail price of electricity in the US is about \\$0.10](#).

While the wind industry continues to hope for more mandates and subsidies that will increase the cost of electricity for ratepayers, America’s wildlife is being subjected to a double standard.

Indeed, the apparent appeal of “green” energy is so great that the US wind industry has a get-out-of-jail-free card when it comes to federal wildlife laws. Despite overwhelming evidence that shows tens of thousands of violations, the US wind industry has never been prosecuted under the Eagle Protection Act nor the [Migratory Bird Treaty Act of 1918](#), one of the oldest wildlife laws in America.

In 2008, a study funded by the [Alameda County Community Development Agency](#), estimated that about 2,400 raptors, including burrowing owls, American kestrels, and red-tailed hawks – as well as about 7,500 other birds, nearly all of which are protected under the MBTA – are being killed every year by the wind turbines located at Altamont Pass, California.

Last month, the [Los Angeles Times](#) reported that 70 golden eagles per year are being killed by the turbines at Altamont Pass. But again, the federal government has not brought a single case against the wind industry. Wildlife biologists estimate that the region around the pass would need 167 pairs of nesting golden eagles to produce enough offspring in order to make up for all of the eagles being killed by the bird Cuisinarts at Altamont. But the region only has 60 pairs of eagles.

Indeed, the only time the wind industry has ever faced legal action for killing birds occurred last year when the state of California [reached a \\$2.5 million settlement](#) with NextEra Energy Resources for the bird kills at Altamont. As part of that deal, the company agreed to remove or replace all of the turbines at Altamont by 2015.

The lack of prosecution of the wind industry for bird kills underscores a pernicious double standard in the enforcement of federal wildlife laws: at the very same time that federal law enforcement officials are bringing cases against oil and gas companies and electric utilities under the MBTA, they have given a de facto exemption to the wind industry for any enforcement action under that same statute. Indeed, over the past two decades or so, federal authorities have brought hundreds of cases against the oil and gas industry for violations of the MBTA. A recent example: On August 13, 2009, Exxon Mobil pled guilty in federal court to charges that it killed 85 birds – all of which were protected under the MBTA. The company [agreed to pay \\$600,000 in fines and fees for the bird kills](#), which occurred after the animals came in contact with hydrocarbons in uncovered tanks and waste water facilities on company properties located in five western states.

Despite the toll that wind turbines are taking on birds, the industry continues to claim that efforts to protect bird life are just too stringent. In May, the Fish and Wildlife Service announced guidelines for the siting of wind turbines, but AWEA immediately objected, with the lobby group’s boss, Denise Bode, [denouncing the guidelines as “unworkable.”](#)

Bats are getting whacked, too. On July 17, the *Pittsburgh Post-Gazette* reported that the 420 wind turbines that have been erected in Pennsylvania “[killed more than 10,000 bats last year](#)... That’s an average of 25 bats per turbine per year, and the Nature Conservancy predicts that as many as 2,900 turbines will be set up across the state by 2030.”

A study of a 44-turbine wind farm in West Virginia found that [up to 4,000 bats had been killed by the turbines in 2004](#) alone. A 2008 study of dead bats found on the ground near a Canadian wind farm found that many of the bats had been [killed by a change in air pressure near the turbine blades that causes fatal damage to their lungs](#), a condition known as “barotrauma.”

Bat Conservation International, an Austin-based group dedicated to preserving the flying mammals and their habitats, has called the proliferation of wind turbines “a lethal crisis.” In 2009, I interviewed Ed Arnett, who heads the group’s research efforts on wind power. He said that the head-long rush to develop wind power is having major detrimental effects on bat populations but few environmental groups are willing to discuss the problem because those groups are so focused on the issue of carbon dioxide emissions and the possibility of global warming. “To compromise today’s wildlife values and environmental impacts for tomorrow’s speculated hopes is irresponsible,” Arnett said. But Arnett added that only a handful of bat species are protected by federal law. And thus the killing of bats by wind turbines gets little attention from the media.

The final issue to be addressed is the one that drives the wind energy devotees to total distraction: carbon dioxide. For years, it has been assumed that wind energy can provide a cost-effective method of reducing carbon dioxide emissions. The reality: wind energy’s carbon dioxide-cutting benefits are vastly overstated. Furthermore, if wind energy does help reduce carbon emissions, those reductions are likely too expensive to be used on any kind of scale.

Those are the findings of an exhaustive new study from Bentek Energy, a Colorado-based energy analytics firm. Rather than rely on computer models that use theoretical emissions data, the authors of the study, Porter Bennett and Brannin McBee, analyzed actual emissions data from electric generation plants located in four regions: the Electric Reliability Council of Texas, Bonneville Power Administration, California Independent System Operator, and the Midwest Independent System Operator. Those four system operators serve about 110 million customers, or about one-third of the US population.

Bennett and McBee looked at more than 300,000 hourly records from 2007 through 2009. Their results show that the American Wind Energy Association (AWEA) and other wind boosters have vastly overstated wind’s ability to cut sulfur dioxide, nitrous oxide, and carbon dioxide. Indeed, the study found that in some regions of the country, like California, using wind energy doesn’t reduce sulfur dioxide emissions at all. But the most important conclusion from the study is that wind energy is not “a cost-effective solution for reducing carbon dioxide if carbon is valued at less than \$33 per ton.” With the US economy still in recession and unemployment numbers near record levels, Congress cannot, will not, attempt to impose a carbon tax, no matter how small.

The wind industry’s apologists are desperate to dismiss the Bentek study, which is a more thorough version of a similar study the firm did in early 2010.

But the Bentek study is similar to several other studies that have come to almost identical conclusions. For instance, in 2003, a paper presented at the International Energy Workshop in Laxenburg, Austria by a group of Estonian researchers concluded that using traditional power plants to compensate for the highly variable, incurably intermittent electricity produced by wind

turbines “eliminates the major part of the expected positive effect of wind energy,” and that [“In some cases the environmental gain from the wind energy use was lost almost totally.”](#)

In 2004, the [Irish Electricity Supply Board](#) found that as the level of wind capacity increases, “the CO2 emissions actually increase as a direct result of having to cope with the variation of wind-power output.”

A 2008 article published in the journal *Energy Policy*, [James Oswald and his two co-authors concluded that increased use of wind](#) will likely cause utilities to invest in lower-efficiency gas-fired generators that will be switched on and off frequently, a move that further lowers their energy efficiency. Upon publication of the study, Oswald said that carbon dioxide savings from wind power “will be less than expected, because cheaper, less efficient [gas-fired] plant[s] will be used to support these wind power fluctuations. Neither these extra costs nor the increased carbon production are being taken into account in the government figures for wind power.”

In November 2009, Kent Hawkins, a Canadian electrical engineer, published a detailed analysis on the frequency with which gas-fired generators must be cycled on and off in order to back up wind power. Hawkins findings: the frequent switching on and off results in more gas consumption than if there were no wind turbines at all. His analysis suggests that it would be more efficient in terms of carbon dioxide emissions to simply run combined-cycle gas turbines on a continuous basis rather than use wind turbines backed up by gas-fired generators that are constantly being turned on and off. Hawkins concludes that wind power is not an “effective CO2 mitigation” strategy [“because of inefficiencies introduced by fast-ramping \(inefficient\) operation of gas turbines.”](#)

If wind energy doesn’t effectively cut carbon dioxide, then the wind sector has few reasons to exist. The [Global Wind Energy Council](#) claims that reducing the amount of carbon dioxide into atmosphere “is the most important environmental benefit from wind power generation.” For its part, the American Wind Energy Association insists that the wind business [“could avoid 825 million tons of carbon dioxide annually by 2030.”](#)

That 825 million tons sounds like a lot. It’s not. In 2010, global carbon dioxide emissions totaled 33.1 billion tons. Thus, if the US went on a wind energy binge, and installed thousands of turbines in every available location, doing so might reduce global carbon dioxide emissions by about 2.5%. And that calculation assumes that global carbon dioxide emissions will stay flat over the next two decades. They won’t.

And that leads to the obvious question: if wind energy doesn’t significantly reduce carbon dioxide emissions, then why does the industry get such hefty subsidies? The key subsidy is the federal production tax credit of \$0.022 for each kilowatt-hour of electricity. That amounts to subsidy of \$6.44 per million BTU of energy produced. For comparison, in 2008, the Energy Information Administration reported that subsidies to the oil and gas sector totaled \$1.9 billion per year, or about \$0.03 per million BTU of energy produced. In other words, subsidies to the wind sector are more than 200 times as great as those given to the oil and gas sector on the basis of per-unit-of-energy produced.

If those fat subsidies go away, then the US wind sector will be stopped dead in its tracks. And for consumers, that should be welcome news.

The wind energy business is the electric sector's equivalent of the corn ethanol scam: it's an over-subsidized industry that depends wholly on taxpayer dollars to remain solvent while providing an inferior product to consumers that does little, if anything, to reduce our need for hydrocarbons or cut carbon dioxide emissions. Indeed, it only increases costs and complexity for the utilities, which, in turn, means higher costs for consumers.

A final point: whenever you hear people like Steve Chu complain about "NIMBYs" who don't want wind turbines on their property, be sure to include billionaires on the list of NIMBYs.

You see, people like Boone Pickens are eager to have wind turbines and transmission lines put up on other people's land, not theirs. In 2008, Pickens declared that his 68,000-acre ranch located in the Texas Panhandle, one of America's windiest regions, will not sport a single turbine. "I'm not going to have the windmills on my ranch," Pickens declared. ["They're ugly."](#)

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