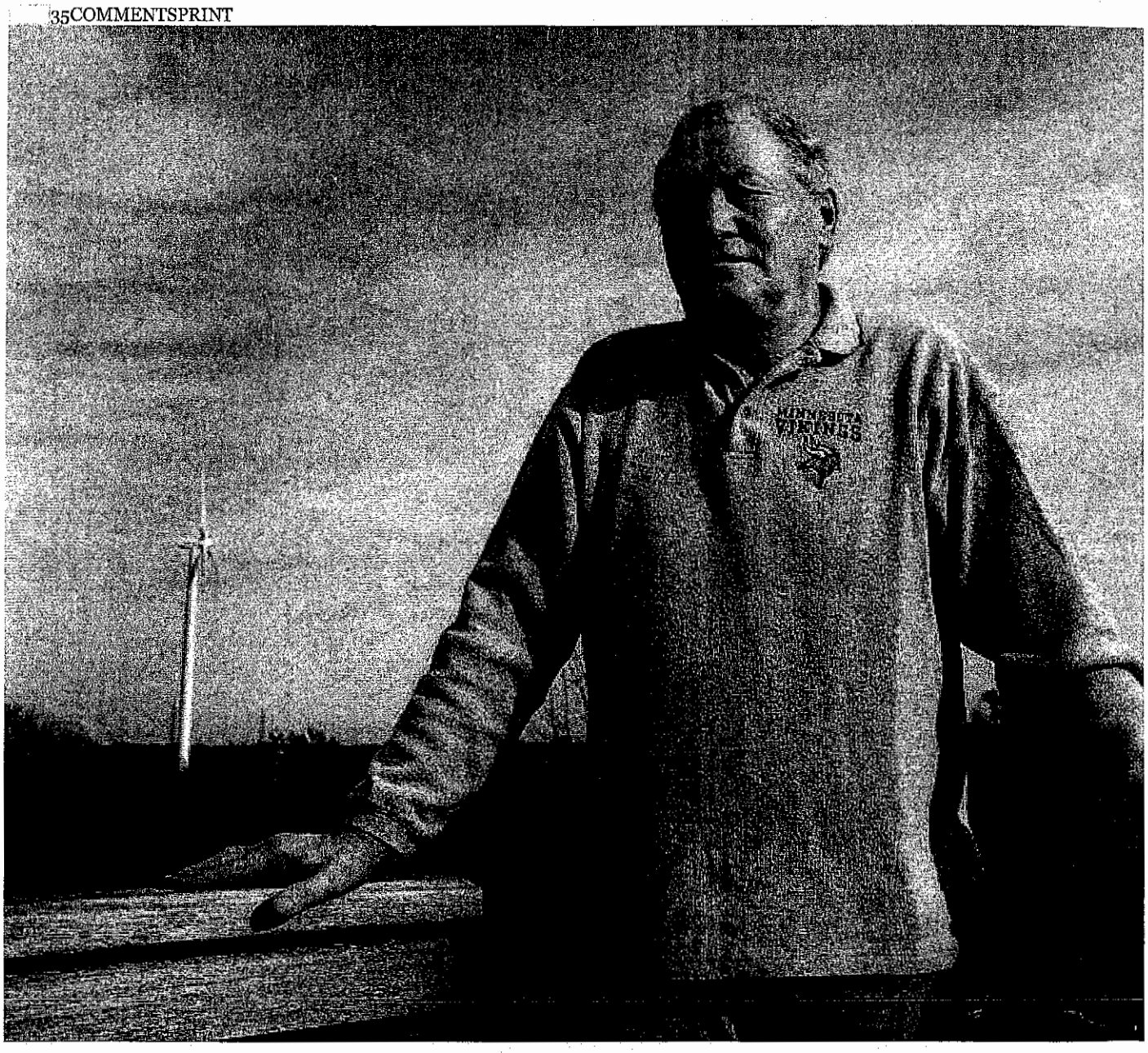
This binder includes articles, studies and letters supporting the opposition of the Prevailing Winds project in western Bon Homme and eastern Charles Mix Counties, South Dakota.

We hope the PUC Commissioners will read it thoroughly.

HEALTH ISSUES

A Falmouth veteran battles wind turbines — and health woes

35COMMENTSPRINT



PHOTOS BY DEBEE TLUMACKI FOR THE BOSTON GLOBE

Barry Funfar on the deck of his home, near the turbines.

By Bella English GLOBE STAFF JANUARY 24, 2014

H20

FALMOUTH — Barry Funfar is a 67-year-old Vietnam veteran who spent most of his waking moments since retirement a decade ago working with the hundreds of flowers and trees he planted around the Colonial-style house that he built. Gardening was his exercise, therapy, and passion, and his doctors agreed it was beneficial to combat his post traumatic stress disorder.
A Marine, Funfar flew 127 combat missions as a door gunner on Huey helicopters and was awarded seven Air Medals for meritorious service.

Years later, he is battling another enemy: two wind turbines near his home, which he says have ended his gardening, caused him unremitting health problems, and exacerbated the PTSD that has plagued him for decades.

Last spring, he and his wife, Diane, filed a complaint against the Town of Falmouth, and the Zoning Board of Appeals recently agreed with the couple that the green energy turbines create a nuisance for them. A year earlier, the board had issued a similar ruling in another turbine case.

But instead of complying with its own zoning board, the Town of Falmouth is suing the board — again.

View Gallery

Photos: A veteran battles turbines

In the earlier case, Barnstable Superior Court Judge Christopher Muse issued a temporary order, while the case is pending, that the turbines run only between 7 a.m. and 7 p.m. Dozens of other Falmouth residents have also testified before the local health board about negative health effects.

These residents are not alone.

Seeking cleaner and cheaper sources of power, governments around the world have been turning to wind power. But as the turbines increase so have complaints about

health problems. There remains significant disagreement about the medical legitimacy of those claims, but there is no doubt in the minds of Funfar and others who suffer.

Funfar, who was diagnosed with post traumatic stress disorder in 2003 after decades of nightmares, anxiety, anger, depression, and alcoholism, was treated by doctors and counselors at the VA Medical Center in Providence, sometimes attending group and individual therapy sessions four days a week. He still goes weekly.

Funfar joined the Marine Corps in 1965, a farm boy from North Dakota. At boot camp graduation, his drill instructor handed him a military ID and said: "Here's your license to kill." It's a statement that still haunts Funfar.

But by 2008, after the intensive therapy, he says, he was feeling much better.

"It took a lot of therapy to change those nightmares that I was killed," he said on a recent day in the house he built in 1999. "In those dreams, my copter would be shot down; the enemy would chase us and kill us, and I'd be at my own funeral."

In Falmouth, where the Funfars have lived since 1979, gardening became a big part of his life, and his doctors encouraged it as a healthy outlet for his PTSD. As the oldest of five boys growing up on an isolated farm, Funfar had always had a passion for plants.

You might call it an obsession. His lot, not quite an acre, has 128 varieties of clematis plants, 500 rhododendrons and azaleas, eight varieties of magnolias, and this year, he put in 10 Japanese maples. That doesn't include myriad other plants; Funfar reckons he's got "thousands of them out there." He has given away hundreds.

In fact, he did the master plan for his garden before he even built the house.

Funfar has carved paths in what he calls his "wild woodland garden," and built a greenhouse on the property as well as a gazebo with a wood stove and microwave, where he sits and peruses some of the dozens of gardening books he has amassed. He also has several photo albums of his plants, with notes scribbled alongside each picture. He makes his own greeting cards with pressed flowers from his garden, and his home was included on three garden tours.

"Any moment I wasn't working, I was with those plants," says Funfar, who in 2003 retired from his carpet-cleaning business.

But these days, the property is overgrown and neglected, the greenhouse and gazebo abandoned. In March 2010, the town installed its first wind turbine and added another the following year. The first is 1,662 feet from the Funfar home, the second 1,558 feet. Both can be seen from their roof deck.

"The first time I heard it, I couldn't believe it could make that much noise," he says. It's also the inaudible low frequency and infrasound waves that he says have made him ill,

with symptoms such as heart palpitations, surges in blood pressure, migraine headaches, and sleep deprivation.

"I feel a quivering in my chest," he says. "I get panic attacks. My pulse is 180, and three hours later it's still 130. I'm on blood pressure medication, and my pressure was down to 120 over 70. But now, I'll get 155 over 115. I feel my life is being shortened by this."

In its complaint against its zoning board, the Town of Falmouth said that the wind turbines do not constitute a nuisance under either town or state law. Moreover, Falmouth called Funfar's symptoms "a preexisting condition known as post traumatic stress disorder."

Funfar replies that yes, he has had PTSD "but never did I have this quivering in my chest, these migraines and flashes in my eyes."

The pro-turbine camp has spent a lot of online ink maligning patients such as Funfar, while the anti-turbine camp also uses the issue as a rallying cry. "This is a medical puzzle plopped into the middle of a very political environment," says Dr. Steven Rauch, a hearing and balance specialist at the Massachusetts Eye and Ear Infirmary and professor of otology and laryngology at Harvard Medical School.

Caught in the middle of political and financial interests, he says, are patients like Funfar, who are experiencing significant symptoms. "I personally have no doubt that there is a real physiological phenomenon going on and some patients are vulnerable to it," says Rauch, who has seen two such patients with a plethora of symptoms, but has not treated Funfar. "There's a lot of science on it, and it's growing."

Humans have varying sensitivities to sound, and a subset of those exposed to wind turbines suffer from the low-frequency pressure waves that penetrate walls and homes, says Rauch.

For Funfar, the only way he can elude the turbines' effects is to leave the area. He spends much time between 7 a.m. and 7 p.m. helping out at his daughter's or son's homes, which aren't near the turbines. He takes his grandsons to the library. Sometimes, he sits in church.

And a year ago, he and Diane bought a house in the Dominican Republic with mango and avocado trees where he can garden "to my heart's content" for several months of the year.

Diane Funfar, a retired math teacher at Falmouth High School, says her husband's PTSD had improved with treatment. "He was happy, working in the yard," she says. "But then the turbines came and turned him into a different person. He got panic attacks and anxiety; his blood pressure went up, and his meds increased.

"The thing he loved to do most was working in the yard, but he can't be here when the turbines are going. He can't even put the trash out when the turbines are loud."

As for her own health, Diane says she wore contact lenses for 42 years but since the turbines, she has had to give them up because of eye discharge that she never before experienced. "And I get headaches now and I never, ever got headaches."

In letters included in the Funfars' complaint, his treatment team at the VA hospital supported his claim. Psychologist Christy Capone reported that Funfar had been making great progress with his PTSD symptoms until the installation of the turbines. "His symptoms have worsened significantly. . . . His backyard, previously his 'sanctuary' where he spent many peaceful hours gardening, is now a place of stress and conflict," she wrote.

In its May 2013 annual election, the Town of Falmouth put a tax initiative on the ballot for funds to decommission the turbines. But though the initiative had passed in Town Meeting, it failed 2-to-1 at the polls.

The cost of removing the turbines was estimated at $3.4 million, and the town would lose about $400,000 in revenue from the sale of electricity generated by the turbines, which is used to pay municipal electric bills.

The town borrowed nearly $5 million to build the first turbine, and received a $5 million state grant for the second one. But if the latter is taken down, the grant must be repaid.

"These financial consequences are part of the basis of the town's decision to appeal [the ZBA ruling]," says Town Counsel Frank Duffy.

The Funfars have looked into selling the house that he hand-built "from concrete to the electrical" but say that the property value has decreased nearly 30 percent, according to appraisals done before and after the turbines came in. (The zoning board agreed with the Funfars, but the town responded that the claim is "based upon insufficient evidence.")

The Funfars also say they've spent more than $20,000 on lawyers to fight the turbines.

The wind turbine issue has divided the Falmouth community into two camps. One letter to the local newspaper "told me to suck it up and do something for my country," says Funfar, visibly upset. "Personally, I feel I did my duty for this country."

Bella English can be reached at english@globe.com.

H 22

Dr. Jay J. Tibbetts, MD

Green Bay, WI 54303-3307
USA
March 18, 2014

To Whom It May Concern,

I am a practicing physician, member of the Brown County Board of Health and Medical Adviser to the Brown County Health Department and am appalled by the misguided position of the AMA Australia on their position on the effects of ILFN on human health. Over the past four years the Board has studied the deleterious effects of IWT's on human health.

We have the Shirley Wind Farm in out county. It consists of eight 500' 2.5 megawatt IWT's. The effects on our citizens living in the immediate vicinity i.e. 2-3 mi. of the nearest turbine has been devastating. Ear pressure , pain, tinnitus, vertigo, headache, nausea, chest pain pressure, abdominal pain, poor concentration, sleep depravation, irritability and depression are some of the symptoms our citizens are experiencing. These symptoms are not unique to our facility but are reported world wide and a direct effect of ILFN. Three families from Shirley Wind have abandoned their homes and several others would move save for financial reasons.

Forty families have left their homes in a wind farm in Ontario, Canada because of the above mentioned symptoms. A study of Shirley Wind in 2013 by a group of acousticians has identified significant ILFN. Professor Alec Salt has identified the pathway of transmission of ILFN in the inner ear.

Brown County has been well aware of wind turbine health issues sending two resolutions passed by the County Board of Supervisors to the State of Wisconsin. Furthermore, Brown County working with Rick James is in the process of amending our noise ordinance to include ILFN similar to Germany, The Netherlands and Poland.

To accept the view of the AMA Australia challenges every bit of reason and study on this subject.

Jay J. Tibbetts, MD

H 23

2

heartlander.

news that empowers people

Health Threat from Wisconsin Wind Farm Affirmed

October 29, 2014

Kenneth Artz

In a shot across the bow of wind power promoters, the Brown County Wisconsin Board of Health has declared the Shirley Wind Farm a "human health hazard."

The Board declared the wind turbines at the Shirley Wind Project in Glenmore, Wisconsin a human health hazard for all people exposed to infrasound (low frequency noise) and other emissions potentially harmful to human health.

The Board's Oct. 13 decision was based on a year-long study documenting infrasound in homes within a six mile radius of the Shirley Wind turbines. The Board's decision is the first of its kind in the nation and puts Duke Energy on the defensive, as it will be asked to convince the Board Shirley Wind is not causing health problems. If Duke fails, it may face a shutdown order.

Source of Power and Complaints

Located in Brown County, Wisconsin, Shirley Wind generates 20 megawatts of electricity, enough to power approximately 6,000 homes in the area for the Wisconsin Public Service Corporation.

According to Steve Deslauriers, media contact for the Brown County Citizens for Responsible Wind Energy, men, women, and children began suffering health problems shortly after the turbines began operation in 2010. Previously healthy people began having problems that subsided when they were away from home for an extended time or the turbines were not turning. When they returned home, the suffering would resume.

H 24

"Countless doctor visits revealed no underlying conditions to explain the pain, inability to sleep, ear and head pressure, anxiety, and depression that people reported while at their homes—symptoms that disappear after a time away from the turbines. Initially, residents simply thought it was 'just my problem,' but as they spoke, a common pattern of symptoms emerged and the correlation and source seemed obvious," he explained.

"The Board of Health was asked to look at the study's raw data, the evidence linking the sound data to the wind turbines, peer-reviewed medical research, and the complaints of the people living in the conditions around Duke's Shirley Wind project. The Board looked at the facts, listened to the residents, studied the medical literature, and then made the connection between Shirley Wind's operations and the suffering in Glenmore—declaring the wind turbines a 'Human Health Hazard.'" he says.

Deslauriers continued, "The State of Wisconsin has stripped the right of towns and counties to responsibly site wind turbines in their own communities . . . and refuses to recognize the health impacts around its existing wind turbines. By ignoring these impacts, they are dooming more communities to the same fate as the Town of Glenmore."

"It is our hope that the Board of Health declaration will start a process that will ultimately result in the end of suffering for the families in Glenmore around Duke's Shirley Wind," he explains.

Residents Worried

Wisconsin native Isaac Orr, a research fellow at The Heartland Institute, which publishes Environment& Climate News, said of the Shirley Wind Farm, "The residents in the district are concerned about their futures. They're worried about paying a mortgage on a house they can no longer live in; they're concerned about their kids being unable to get adequate sleep and unable to concentrate at school."

He added, "People are also concerned they will be unable to sell their property. Some even made signs reading, 'Welcome to the Glemore Wind Turbine Ghetto.'"

Kenneth Artz (iamkenartz@hotmail.com) is free-lance reporter who writes from Dallas, Texas.

Author bio:

Kenneth Artz (iamkenartz@hotmail.com) is a freelance reporter for The Heartland Institute based in Dallas, Texas.

REPORT: WIND TURBINES TRIGGER DANGER RESPONSE IN THE BRAIN

by SIMON KENT | 14 Jul 2015 |

If just reading the words 'wind turbines' makes you feel physically sick then spare a thought for the people who have had them thrust into their lives. A new report shows living near a wind turbine may harm emotional wellbeing after scientists discovered that low frequency sounds generated by rotor blades trigger a part of the brain which senses danger.

According to the *Daily Telegraph*, brain scans show that even infrasound as low as 8hz – a whole octave below the traditional cut off point for human hearing – is still being picked up by the primary auditory cortex. This is the part of the brain which translates sounds into meaning.

And a separate part of the brain, linked to emotions, also lit up when the seemingly 'inaudible' noises were played to volunteers in a lab.

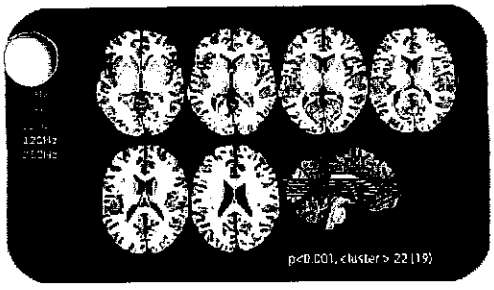
Dr Christian Koch of the Max Planck Institute for Human Development in Berlin was responsible for the report. He said:

> "The observations showed a reaction in certain parts of the brain which play a role in emotions.

H-1

something is there and that this might involve danger.

"All persons concerned explicitly stated that they had heard something."



Brain scans showed that even at 8Hz there were activities in the primary auditory cortex
Credit: German National Metrology Institute

People living in the vicinity of wind farms have long reported experiencing sleep disturbances, a decline in performance and other negative effects. They make the causal link to the "infrasound" generated by the turbines

But the wind energy sector has always maintained that the sounds created by rotor blades are too low a frequency to be picked up by humans.

To test whether sounds could be heard Dr Koch's team generated an infrasonic source which is able to create sounds that are completely free from harmonics. Volunteers were asked about their hearing experience, and these statements were then compared by to their brain scans (see image above).

The results revealed that humans hear lower sounds from around 8 hertz on – a whole octave lower than had previously been assumed.

RenewableUK's Director of Onshore Renewables, Gemma Grimes, rebutted the report's findings. She told the *Telegraph*:

> "The wind industry takes all health and safety issues very seriously. This piece of work was, by the author's own admission, just him thinking aloud and raising a number of possible issues relating to all types of infrastructure that could be researched further – he undertook no research at wind farms.
>
> "The author himself stated that it would be scaremongering to make any a connection between wind farms and public health issues. There is an existing body of peer-reviewed scientific research, which clearly shows that living near a wind farm has no adverse effect on anyone's health, and to suggest otherwise is inaccurate and irresponsible".

The German study's release comes just days after Breitbart London reported Australia's Prime Minister Tony Abbott announcement of an immediate end to any further government subsidies for alternative green energy schemes including wind and solar as part of his self-declared "war on wind farms."

Abbott is on the record saying he wants fewer "visually awful" wind farms in Australia and is keen for an inquiry into their health impacts. Turning off Australian government subsidies is just the first step in what will be a long campaign for a country abundantly rich in coal and natural gas.

FOLLOW SIMON KENT ON TWITTER: Follow @SunSimonKent *OR E-MAIL TO: SKENT@BREITBART.COM*

- **Aren't You Like Your Pope?'**
- **Programmer Accidentally Releases Money Making Software**
- **New Probiotic Fat Burner Takes GNC by Storm**

MOST POPULAR

USA TODAY POLL: Donald Trump Clear Republican Frontrunner
3946 comments · 12 hours ago

A 'Terrible Deal': Nuclear Agreement Reached with Iran
4648 comments · 1 day ago

Planned Parenthood Official Taped Discussing Use of Aborted Baby Body Parts
2917 comments · 21 hours ago

30,000 Macy's Customers Retaliate in Support of Donald Trump
2186 comments · 17 hours ago

Everything You Need to Know About Obama's Iran Deal
2135 comments · 21 hours ago

Jindal Announces Planned Parenthood Investigation, Halts Licenses for New Abortion Clinic
1310 comments · 17 hours ago

Mark Levin : Numbers You Hear on Immigration Are a Lie
1065 comments · 15 hours ago

Mexican Illegal Alien Arrested for Allegedly Kidnapping, Raping 13-Year-Old
4005 comments · 2 days ago

Popular Twitter Claiming to be 'El Chapo' Guzman to Trump: 'I'll Make You Eat Your Words'
3648 comments · 2 days ago

The EU Is Dead: It Just Refuses to Lie Down
281 comments · 5 hours ago

Fox News National

Ku Klux Klan fliers show up in predominantly black South Carolina neighborhood
15 Jul 2015, 4:47 AM PDT

4 Business Principles Learned Getting Rich in Real Estate by Age 30
15 Jul 2015, 4:30 AM PDT

Five hurt in explosion at Washington state

CFP·MFC Official Publication of The College of Family Physicians of Canada

Can Fam Physician. 2013 May; 59(5): 473-475. PMCID: PMC3653647

Adverse health effects of industrial wind turbines

Roy D. Jeffery, MD FCFP

Family physician in the Northeastern Manitoulin Family Health Team in Little Current, Ont.

Carmen Krogh

Retired pharmacist and a former Editor-in-Chief of the Compendium of Pharmaceutical Specialties.

Brett Horner, CMA

Certified Management Accountant.

Correspondence: **Dr Roy D. Jeffery**, Northeastern Manitoulin Family Health Team, Box 549, Little Current, ON P0P 1K0; e-mail jeffery_07@sympatico.ca

Cet article est disponible en français. Voyez "Effets indésirables sur la santé des éoliennes industrielles".

This article has been cited by other articles in PMC.

Canadian family physicians can expect to see increasing numbers of rural patients reporting adverse effects from exposure to industrial wind turbines (IWTs). People who live or work in close proximity to IWTs have experienced symptoms that include decreased quality of life, annoyance, stress, sleep disturbance, headache, anxiety, depression, and cognitive dysfunction. Some have also felt anger, grief, or a sense of injustice. Suggested causes of symptoms include a combination of wind turbine noise, infrasound, dirty electricity, ground current, and shadow flicker.[1] Family physicians should be aware that patients reporting adverse effects from IWTs might experience symptoms that are intense and pervasive and might feel further victimized by a lack of caregiver understanding.

Background

Go to:

There is increasing concern that energy generation from fossil fuels contributes to climate change and air pollution. In response to these concerns, governments around the world are encouraging the installation of renewable energy projects including IWTs. In Ontario, the Green Energy Act was designed, in part, to remove barriers to the installation of IWTs.[2] Noise regulations can be a considerable barrier to IWT development, as they can have a substantial effect on wind turbine spacing, and therefore the cost of wind-generated electricity.[3] Industrial wind turbines are being placed in close proximity to family homes in order to have access to transmission infrastructure.[4]

In Ontario and elsewhere,[5] some individuals have reported experiencing adverse health effects resulting from living near IWTs. Reports of IWT-induced adverse health effects have been dismissed by some commentators including government authorities and other organizations. Physicians have been exposed to efforts to convince the public of the benefits of IWTs while minimizing the health risks. Those concerned about adverse effects of IWTs have been stereotyped as "NIMBYs" (not in my backyard).[6,7]

Global reports of effects

Go to:

During the past few years there have been case reports of adverse effects. A 2006 Académie Nationale de Médecine working group report notes that noise is the most frequent complaint. The noise is described as piercing,

preoccupying, and continually surprising, as it is irregular in intensity. The noise includes grating and incongruous sounds that distract the attention or disturb rest. The spontaneous recurrence of these noises disturbs the sleep, suddenly awakening the subject when the wind rises and preventing the subject from going back to sleep. Wind turbines have been blamed for other problems experienced by people living nearby. These are less precise and less well described, and consist of subjective (headaches, fatigue, temporary feelings of dizziness, nausea) and sometimes objective (vomiting, insomnia, palpitations) manifestations.[8]

A 2009 literature review prepared by the Minnesota Department of Health[9] summarized case reports by Harry (2007),[10] Phipps et al (2007),[11] the Large Wind Turbine Citizens Committee for the Town of Union (2008),[12] and Pierpont (2009).[13] These case studies catalogued complaints of annoyance, reduced quality of life, and health effects associated with IWTs, such as sleeplessness and headaches.[9]

In 2010, Nissenbaum et al used validated questionnaires in a controlled study of 2 Maine wind energy projects. They concluded that "the noise emissions of IWTs disturbed the sleep and caused daytime sleepiness and impaired mental health in residents living within 1.4 km of the two IWT installations studied."[14]

Reports of adverse health effects[15] and reduced quality of life[16] are also documented in IWT projects in Australia and New Zealand.

A 2012 board of health resolution in Brown County in Wisconsin formally requested financial relocation assistance for "families that are suffering adverse health effects and undue hardships caused by the irresponsible placement of industrial wind turbines around their homes and property."[17]

An Ontario community-based self-reporting health survey, WindVOiCe, identified the most commonly reported IWT-induced symptoms as altered quality of life, sleep disturbance, excessive tiredness, headache, stress, and distress. Other reported effects include migraines, hearing problems, tinnitus, heart palpitations, anxiety, and depression.[18] In addition, degraded living conditions and adverse socioeconomic effects have been reported. In some cases the effects were severe enough that individuals in Ontario abandoned their homes or reached financial agreements with wind energy developers.[19]

After considering the evidence and testimony presented by 26 witnesses, a 2011 Ontario environmental review tribunal decision acknowledged IWTs can harm human health:

> *This case has successfully shown that the debate should not be simplified to one about whether wind turbines can cause harm to humans. The evidence presented to the Tribunal demonstrates that they can, if facilities are placed too close to residents. The debate has now evolved to one of degree.*[20]

Indirect effects and annoyance

Go to:

When assessing the adverse effects of IWTs it is important to consider what constitutes human health. The World Health Organization (WHO) defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."[21]

Despite being widely accepted, the WHO definition of health is frequently overlooked when assessing the health effects of IWTs. Literature reviews commenting on the health effects of IWTs have been produced with varying degrees of completeness, accuracy, and objectivity.[22] Some of these commentators accept the plausibility of the reported IWT health effects and acknowledge that IWT noise and visual effects might cause annoyance, stress, or sleep disturbance, which can have other consequences. However, these IWT health effects are often discounted because "direct pathological effects" or a "direct causal link" have not been established. In 2010, the Ontario Chief Medical Officer of Health released *The Potential Health Impact of Wind Turbines,* which acknowledged that some people living near wind turbines report symptoms such as dizziness, headaches, and sleep disturbance but concluded "the scientific evidence available to date does not demonstrate a direct causal link between wind turbine

noise and adverse health effects."[22] The lead author of the report,[22] Dr Gloria Rachamin, acknowledged under oath that the literature review looked only at direct links to human health.[24]

Focusing on "direct" causal links limits the discussion to a small slice of the potential health effects of IWTs. The 2011 environmental review tribunal decision found that *serious harm to human health* includes "indirect impacts (e.g., a person being exposed to noise and then exhibiting stress and developing other related symptoms)."[20]

According to the night noise guidelines for Europe:

> *Physiological experiments on humans have shown that noise of a moderate level acts via an indirect pathway and has health outcomes similar to those caused by high noise exposures on the direct pathway. The indirect pathway starts with noise-induced disturbances of activities such as communication or sleep.*[25]

Pierpont documented symptoms reported by individuals exposed to wind turbines, which include sleep disturbance, headache, tinnitus, ear pressure, dizziness, vertigo, nausea, visual blurring, tachycardia, irritability, problems with concentration and memory, and panic episodes associated with sensations of internal pulsation or quivering when awake or asleep.[13] The American Wind Energy Association and the Canadian Wind Energy Association convened a panel literature review that determined these symptoms are the "well-known stress effects of exposure to noise," or in other words, are "a subset of annoyance reactions."[26]

Noise-induced annoyance is acknowledged to be an adverse health effect.[27–30] Chronic severe noise annoyance should be classified as a serious health risk.[31] According to the WHO guidelines for community noise, "[t]he capacity of a noise to induce annoyance depends upon many of its physical characteristics, including its sound pressure level and spectral characteristics, as well as the variations of these properties over time."[32] Industrial wind turbine noise is perceived to be more annoying than transportation noise or industrial noise at comparable sound pressure levels.[33] Industrial wind turbine amplitude modulation,[34] audible low frequency noise,[35] tonal noise, infrasound,[36] and lack of nighttime abatement have been identified as plausible noise characteristics that could cause annoyance and other health effects.

Health effects in Ontario expected

Go to:

Evidence-based health studies were not conducted to determine adequate setbacks and noise levels for the siting of IWTs before the implementation of the Ontario renewable energy policy. In addition, provision for vigilance monitoring was not made. It is now clear that the regulations are not adequate to protect the health of all exposed individuals.

A 2010 report commissioned by the Ontario Ministry of the Environment concludes:

> *The audible sound from wind turbines, at the levels experienced at typical receptor distances in Ontario, is nonetheless expected to result in a non-trivial percentage of persons being highly annoyed .... [R]esearch has shown that annoyance associated with sound from wind turbines can be expected to contribute to stress related health impacts in some persons.*[37]

Consequently, physicians will likely be presented with patients reporting health effects.

Family physicians should be aware that patients reporting adverse effects from IWTs might experience symptoms that are intense and pervasive and that they might feel further victimized by a lack of care-giver understanding. Those adversely affected by IWTs might have already pursued other avenues to mitigate the health effects with little or no success. It will be important to identify the possibility of exposure to IWTs in patients presenting with appropriate clinical symptoms.[38]

Conclusion

Go to:

Industrial wind turbines can harm human health if sited too close to residents. Harm can be avoided if IWTs are situated at an appropriate distance from humans. Owing to the lack of adequately protective siting guidelines, people exposed to IWTs can be expected to present to their family physicians in increasing numbers. The documented symptoms are usually stress disorder–type diseases acting via indirect pathways and can represent serious harm to human health. Family physicians are in a position to effectively recognize the ailments and provide an empathetic response. In addition, their contributions to clinical studies are urgently needed to clarify the relationship between IWT exposure and human health and to inform regulations that will protect physical, mental, and social well-being.

Footnotes

Go to:

This article has been peer reviewed.

La traduction en français de cet article se trouve à **www.cfp.ca** dans la table des matières du numéro de **mai 2013** à la page **e218**.

Competing interests

Dr Jeffery, Ms Krogh, and **Mr Horner** are on the Board of Directors for the Society for Wind Vigilance, an international federation of physicians, acousticians, engineers, and other professionals who share scientific research on the topic of health and wind turbines.

The opinions expressed in commentaries are those of the authors. Publication does not imply endorsement by the College of Family Physicians of Canada.

References

Go to:

1. Havas M, Colling D. Wind turbines make waves: why some residents near wind turbines become ill. Bull Sci Technol Soc. 2011;31(5):414–26.

2. Government of Ontario [website] Chapter 12. An act to enact the Green Energy Act, 2009 and to build a green economy, to repeal the Energy Conservation Leadership Act, 2006 and the Energy Efficiency Act and to amend other statutes. Toronto, ON: Government of Ontario; 2009. Available from: www.e-laws.gov.on.ca/html/source/statutes/english/2009/elaws_src_s09012_e.htm#. Accessed 2013 Mar 26.

3. Canadian Wind Energy Association [website] Letter to Neil Parish re: sound level limits for wind farms. Ottawa, ON: Canadian Wind Energy Association; 2004. Available from: www.canwea.ca/images/uploads/File/Wind_Energy_Policy/Environmental_Issues/SoundLevels.pdf. Accessed 2013 Mar 26.

4. Hornung R. Business of green: wind energy and budget expectations [video] Toronto, ON: Business News Network; 2010. Available from: http://watch.bnn.ca/clip272347. Accessed 2013 Apr 4.

5. Hanning CD, Evans A. Wind turbine noise. BMJ. 2012;344:e1527. [PubMed]

6. Martin C. NIMBY mentality unacceptable when it comes to green-energy projects, McGuinty says. London Free Press. 2009 Feb 12.

7. Schliesmann P. Wind turbine debate swirls. Kingston Whig-Standard. 2010 Jan 2; Available from: www.thewhig.com/ArticleDisplay.aspx?e=2244137&archive=true. Accessed 2013 Mar 26.

8. Académie Nationale de Médecine Groupe de Travail . Le retentissement du fonctionnement des éoliennes sur la santé de l'homme. Paris, France: Académie Nationale de Médecine; 2006. Available from: www.academie-medecine.fr/sites_thematiques/EOLIENNES/chouard_rapp_14mars_2006.htm. Accessed 2013 Mar 26.

9. Minnesota Department of Health [website] Public health impacts of wind turbines. St Paul, MN: Minnesota

Department of Health; 2009. Available from: www.health.state.mn.us/divs/eh/hazardous/topics/windturbines.pdf. Accessed 2013 Mar 26.

10. Harry A. Wind turbines, noise and health. Rowe, MA: National Wind Watch; 2007. Available from: http://docs.wind-watch.org/wtnoise_health_2007_a_harry.pdf. Accessed 2013 Mar 26.

11. Phipps R, Amati M, McCoard S, Fisher R. Visual and noise effects reported by residents living close to Manawatu wind farms: preliminary survey results. Rowe, MA: National Wind Watch; 2007. Available from: http://docs.wind-watch.org/phipps-visualnoiseeffects.pdf. Accessed 2013 Mar 26.

12. Large Wind Turbine Citizens Committee for the Town of Union . Setback recommendations report. Rowe, MA: National Wind Watch; 2008. Available from: http://docs.wind-watch.org/LWTCC-Town-of-Union_FinalReport_01-14-08.pdf. Accessed 2013 Mar 26.

13. Pierpont N. Wind turbine syndrome: a report on a natural experiment. Santa Fe, NM: K-Selected Books; 2009.

14. Nissenbaum MA, Aramini JJ, Hanning CD. Effects of industrial wind turbine noise on sleep and health. Noise Health. 2012;14(60):237–43. [PubMed]

15. Thorne B. The problems with "noise numbers" for wind farm noise assessment. Bull Sci Technol Soc. 2011;31(4):262–90.

16. Shepherd D, McBride D, Welch D, Dirks KN, Hill EM. Evaluating the impact of wind turbine noise on health-related quality of life. Noise Health. 2011;13(54):333–9. [PubMed]

17. Brown County board of health resolution requesting emergency state aid for families suffering around industrial wind turbines. Rowe, MA: National Wind Watch; 2012. Available from: http://docs.wind-watch.org/Brown%20County%20Board%20of%20Health%20Resolution%20011012.pdf. Accessed 2013 Mar 28.

18. Krogh CME, Gillis L, Kouwen N, Aramini J. WindVOiCe, a self-reporting survey: adverse health effects, industrial wind turbines, and the need for vigilance monitoring. Bull Sci Technol Soc. 2011;31(4):334–45.

19. Krogh CME. Industrial wind turbine development and loss of social justice? Bull Sci Technol Soc. 2011;31(4):321–33.

20. Erickson v. Director, Ministry of the Environment. 2011. Environmental Review Tribunal Nos. 10-121 and 10-122. Available from: www.ert.gov.on.ca/files/201108/00000300-AKT5757C7CO026-BHH51C7A7SO026.pdf. Accessed 2013 Mar 28.

21. World Health Organization . Preamble to the Constitution of the World Health Organization. Geneva, Switz: World Health Organization; 1948. Definition of health. Available from: www.who.int/about/definition/en/print.html. Accessed 2013 Mar 28.

22. Horner B, Jeffery RD, Krogh CME. Literature reviews on wind turbines and health: are they enough? Bull Sci Technol Soc. 2011;31(5):399–413.

23. Chief Medical Officer of Health . The potential health impact of wind turbines. Toronto, ON: Ministry of Health and Long-Term Care; 2010. Available from: http://health.gov.on.ca/en/common/ministry/publications/reports/wind_turbine/wind_turbine.pdf. Accessed 2013 Mar 27.

24. Erickson v. Director, Ministry of the Environment. Environmental Review Tribunal Nos. 10-121 and 10-122. Transcript of Dr G. Rachamin. 2011 Mar 4.

25. World Health Organization Europe . Night noise guidelines for Europe. Copenhagen, Denmark: World Health Organization Europe; 2009. Available from: www.euro.who.int/__data/assets/pdf_file/0017/43316/E92845.pdf.

6

Accessed 2013 Mar 27.

26. Colby WD, Dobie R, Leventhall G, Lipscomb DM, McCunney RJ, Seilo MT, et al. Wind turbine sound and health effects. An expert panel review. Washington, DC: American Wind Energy Association, Canadian Wind Energy Association; 2009. Available from: www.canwea.ca/pdf/talkwind/Wind_Turbine_Sound_and_Health_Effects.pdf. Accessed 2013 Mar 27.

27. Health Canada [website] Community noise annoyance. Ottawa, ON: Health Canada; 2005. Available from: www.hc-sc.gc.ca/hl-vs/iyh-vsv/life-vie/community-urbain-eng.php. Accessed 2013 Mar 27.

28. Suter AH. Noise and its effects. Washington, DC: Administrative Conference of the United States; 1991. Available from: www.nonoise.org/library/suter/suter.htm. Accessed 2013 Mar 27.

29. Michaud DS, Keith SE, McMurchy D. Noise annoyance in Canada. Noise Health. 2005;7(27):39–47. [PubMed]

30. Pedersen E, Persson Waye K. Wind turbine noise, annoyance and self-reported health and well-being in different living environments. Occup Environ Med. 2007;64(7):480–6. Epub 2007 Mar 1. [PMC free article] [PubMed]

31. Maschke C, Niemann A. Health effects of annoyance induced by neighbour noise. Noise Control Eng J. 2007;55(3):348–56.

32. Berglund B, Lindvall T, Schwela DH, editors. Guidelines for community noise. Geneva, Switz: World Health Organization; 1999.

33. Pedersen E, van den Berg F, Bakker R, Bouma J. Response to noise from modern wind farms in the Netherlands. J Acoust Soc Am. 2009;126(2):634–43. [PubMed]

34. Leventhall G. Infrasound from wind turbines—fact, fiction or deception. Can Acoust. 2006;34(2):29–36.

35. Møller H, Pedersen CS. Low-frequency noise from large wind turbines. J Acoust Soc Am. 2011;129(6):3727–44. [PubMed]

36. Salt AN, Kaltenbach JA. Infrasound from wind turbines could affect humans. Bull Sci Technol Soc. 2011;31(4):296–302.

37. Howe Gastmeier Chapnik Limited . Low frequency noise and infrasound associated with wind turbine generator systems. A literature review. Toronto, ON: Ontario Ministry of the Environment; 2010. Available from: www.ene.gov.on.ca/stdprodconsume/groups/lr/@ene/@resources/documents/resource/stdprod_092086.pdf. Accessed 2013 Mar 27.

38. McMurtry RY. Toward a case definition of adverse health effects in the environs of industrial wind turbines: facilitating a clinical diagnosis. Bull Sci Technol Soc. 2011;31(4):316–20.

Sue Hobart, a bridal florist from Massachusetts, couldn't understand why she suddenly developed headaches, ringing in her ears, insomnia and dizziness to the point of falling "flat on my face" in the driveway.

"I thought I was just getting older and tired," said the 57-year-old from Falmouth.

Months earlier, in the summer of 2010, three wind turbines had been erected in her town, one of which runs around the clock, 1,600 feet from her home.

"I didn't put anything to the turbines -- we heard it and didn't like the thump, thump, thump and didn't like seeing them, but we didn't put it together," she told ABCNews.com.

Hobart said her headaches only got worse, but at Christmas, when she went to San Diego, they disappeared. And she said the same thing happened on an overnight trip to Keene, N.H.

"Sometimes at night, especially in the winter, I wake up with a fluttering in the chest and think, 'What the hell is that,' and the only place it happens is at my house," she said. "That's how you know. When you go away, it doesn't happen."

Medical mystery: 19 teens develop Tourette's syndrome-like symptoms.

Hobart and dozens of others in this small Cape Cod town have filed lawsuits, claiming that three 400 feet tall, 1.63 megawatt turbines (two owned by the town and one owned by **Notus Clean Energy**) were responsible for an array of symptoms. A fourth, much smaller turbine, is owned by **Woods Hole Research Center**, but it receives fewer complaints.

The wind turbines have blown up a political storm in Falmouth that has resonated throughout the wind energy industry. Are these plaintiffs just "whiners," or do they have a legitimate illness?

"It goes all day and night. My initial take was that she was being a hypochondriac, but I went to their house two years ago with a little skepticism and within 10 minutes of being in the house, I could feel it and hear it." -- Brian Mannal, lawyer for Sue Hobart

In 2011, a doctor at Harvard Medical School diagnosed Hobart with wind turbine syndrome, which is not recognized by the Centers for Disease Control and Prevention.

The name was coined by Nina Pierpont, a John Hopkins University-trained pediatrician, whose husband is an anti-wind activist, criticizing the economics and physics of wind power.

Pierpont, who lives in upstate New York, calls wind turbine syndrome the green energy industry's "dirty little secret." She self-published "Wind Turbine Syndrome" in 2009, including case studies of people who lived within 1.25 miles of these "spinning giants" who reportedly got sick.

But her wind-turbine research has been criticized for improper peer review (Pierpont reportedly chose her reviewers), and for its methodology -- small sample size, no control group and the fact that she did not examine her subjects or their medical records but interviewed them by phone.

Neither Pierpont nor her husband, Calvin Luther Martin, responded to ABCNews.com's request for comment.

Hobart and her husband, Edward, filed a nuisance claim last Feb. 5 in Barnstable Superior Court against Notus Clean Energy and its owner, Dan Webb. According to the Hobarts' lawyer, Democratic State Rep. Brian Mannal, they are seeking between $150,000 and $300,000 in damages for loss of value of their home, and for medical bills.

They filed an earlier nuisance complaint against the town in July 2012, but the judge granted the defendants' motion to dismiss on Dec. 3, 2012.

"The heart of the issue is that they have been pushed off their land," said Mannal. "They have erected these enormous industrial-scale turbines -- larger than a 747 -- in close proximity to residences. They have had to leave their house because they couldn't live there anymore."

Mannal, who took on the Hobarts' suit before running for public office, said he "had a feeling about this case since it first came to me that this is one of the most important things I will do in my professional life. These are people who have been put upon and are suffering under this thing with no avenue for escape.

"This is an industry that has pushed to make wind happen, and I am not against that, but you do it responsibly," Mannal said. "It goes all day and night. My initial take was that [she] was being a hypochondriac, but I went to their house two years ago with a little skepticism and within 10 minutes of being in the house, I could feel it and hear it. ... It acts like a drum and pounds on the house."

In its answer to the court on May 20, Webb's attorney, Michael J. O'Neill, denied all of Hobart's allegations, saying that Notus' application for an operating permit was "subject to rigorous review" by Falmouth's Zoning Board of Appeals. O'Neill also said that Notus had submitted a "thorough noise assessment by a qualified consultant in support of its application," and that the wind turbine project had complied with all applicable standards and regulations. "Scientific research and studies have shown that wind turbines such as Notus' do not cause a nuisance or adverse health effects," said O'Neill in the court filing.

Webb did not comment on the Hobarts' lawsuit but defended wind energy in an email to ABCNews.com, saying that its wind turbine generates approximately 5 million kWh of electricity annually.

"In three years of operation, it has prevented emissions of more than 7,000 tons of carbon dioxide from conventional generation plants," he wrote. "The nearest home to the Notus turbine is approximately 1,700 feet from the turbine. The minimum setback distance recommended by a state model bylaw is three times tip height, or a distance of 1,197 feet. So our setback distance to homes is substantially greater than specified in the state model bylaw."

Neil Andersen and his wife, Betsy, were big fans of alternative energy, but when two town-owned turbines arrived within 1,320 and 2,320 feet of their house, they, too, said they developed symptoms.

Andersen, 60, said that within a week and half, he developed a "very uncomfortable feeling."

"First, it was pressure in my ears -- they were just popping as I was standing out in the front yard doing landscaping," he told ABCNews.com. "Within two months, my ears started ringing with tinnitus, and now I have clenching of my teeth -- bruxism."

He said he had headaches, shortness of breath, sensitivity to sounds and heart palpitations.

"At times, I even have confusion over what is the pulse of the turbine and which is my heartbeat," he said.

He said his wife had suffered migraines so severe that she wrote in a journal she keeps on her symptoms and the wind turbine operations "Never stops, never stops. Headache. HELP."

More than 45 Falmouth residents have complained to the town's Board of Selectmen, which curtailed the hours of its two turbines at night. The board said it's the pressure of infrasound -- sounds with frequencies below 20 Hz -- which are on the low end of audible for humans.

But others say many who live near the wind turbines suffer no ill effects, and there's research that suggests these unexplainable symptoms could be psychogenic, or "contagious." In a phenomenon known as the nocebo effect -- the opposite of the placebo effect -- people can convince themselves that something is producing harm.

One **2013 study on the wind turbine effect published in the journal Health Psychology** examined the power of suggestion and concluded it may have caused the reported health problems.

In the study, researchers exposed 60 participants to 10 minutes of infrasound and then silence. Beforehand, half the group was shown television footage of people who lived near wind farms and were recounting the harmful effects. Within this group, the people who scored high for anxiety developed symptoms, even if they were exposed to sham infrasound.

"Some people are more suggestible," said Dr. Elizabeth Bowman, a psychiatrist and adjunct professor at Indiana University, who is not familiar with the Falmouth cases. "This is not conscious, it's unconscious.

"What can happen across time is people think maybe this is real, my neighbor's got it," said Bowman. "They start to tune in more to their bodies and amplify and misinterpret normal body sensations."

Andersen, however, said he had no idea his neighbors were suffering when his symptoms began.

"Just come in to my house and feel the walls shaking," he said. "They say it's the nocebo effect, but people who sit on my front porch have to leave within a half hour -- they felt it.

Early on, I had a financial adviser sit in my kitchen and within five minutes he was complaining about ear popping.

"Something is going on here, and it's affecting a lot of us physically and mentally," explained Andersen, who said he could no longer work in construction.

"They don't believe us," he said. "It's a very sad situation."

ABCNews.com called the town of Falmouth several times and sent emails, but the calls were not returned and the emails were not answered. The town's lawyer, Frank K. Duffy, also did not return calls.

According to Kim Fish, who is Duffy's paralegal, there are "just so many lawsuits."

The clerk at Barnstable Superior Court confirmed there were numerous lawsuits against the town and its Board of Health.

The Andersens have filed three lawsuits. The one in Barnstable Superior Court alleges the town violated the zoning bylaw, did not go through the proper permitting process for installing the wind turbines and did not hold "one single public meeting."

The second is a nuisance complaint that was initially denied by the building commissioner, but that decision was later overturned by the zoning board of appeals. "We are in the middle of proceedings for an injunction to stop the turbines until the case is heard," Andersen said.

A third private nuisance lawsuit was filed in federal court in Boston.

The Massachusetts Departments of Environmental Protection and Public Health recently **commissioned a panel of experts to analyze existing research on the effects of noise, vibration and flicker of wind turbines on health.** They concluded that wind turbines present little more than an "annoyance" to residents, and that limited evidence exists to support claims of devastating health impacts.

Earlier this year, the selectmen voted unanimously to take down the wind turbines as "the right thing to do," but when the town put the measure to a vote in April, it didn't pass, according to the **Cape Cod Times.**

Many Falmouth residents said they're baffled by the complaints.

"My neighborhood is 4,000 feet from the big ones, and we have zero effect," said Tom Stone, who spoke on behalf of the Woods Hole Research Center, where he is a scientist emeritus. Woods Hold Research Center owns the smaller turbine, which has not been the subject of lawsuits. "Houses are being sold on my street, and new houses are being built. It's not an issue.

"My son has been house-sitting one of the families who complained, and it doesn't bother their children but bothers their parents. I don't know what to make of it. Is it one of these things that bothers you if you are sensitive to it, or is it a stress reaction?"

One woman complained about the turbine at the research center, said Stone, but the turbine was not even in operation at the times she logged her symptoms.

Wind turbines are the most popular form of new energy in the United States and are seen widely not only in coastal Massachusetts but throughout California, Texas and Wisconsin.

The **American Wind Energy Association**, which represents the industry, said that wind power was "an inexhaustible resource," which did not harm the environment and provided a "direct health benefit by reducing air pollution and related health impacts, including asthma."

Spokeswoman Lindsay North, who did not comment on the Falmouth cases, said health complaints were "rare."

A 2010 study by **Australia's National Health and Medical Research Council** found no negative effects from wind turbines.

But Dr. Steven Rauch, director of the **Balance and Vestibular Center at Massachusetts Eye and Ear Infirmary** and the doctor who diagnosed Sue Hobart, said he was "unwilling" to rule out wind turbine syndrome as a real medical condition.

Rauch said he had diagnosed only one other patient besides Hobart, but he believed infrasound was a "plausible" explanation for their complaints.

"We don't know enough about it to totally accept it or blow it off," he told ABCNews.com. "When these patients came to me I could not find any other abnormalities to explain their symptoms. I am trying to give them the benefit of the doubt."

Hobart, who was referred to Rauch by Pierpont, said she saw him in July 2011, after she had left her house and was living with a friend.

He did a full otology exam and checked on her gait and hearing, she said, and recommended physical therapy for her gait problems but prescribed no medication.

"He said I was recovering well and to just stay away from the wind turbine," she said. "It was a huge relief to have a doctor of his caliber affirm my situation."

Rauch said he consulted with Pierpont and **Alec Salt**, an otolaryngology specialist at the Cochlear Fluids Research Laboratory at Washington University in Louis who suggests the **level of infrasound generated by a wind turbine** one mile away could be harmful.

"He tried to lay out the scientific basis for low-frequency pressure affecting the inner ear," said Rauch. "It seems to do something to other parts of the body, and it persuaded me, that at least in animal research, there is proof. We know that animals are pretty good models of differential susceptibility to noise exposure."

The big question is why some live near wind turbines with no ill effects, and others are crippled by symptoms, such as debilitating migraines.

"Migraines alter the way the brain processes sensory information -- light, stimulation, sound touch, bellyaches and sleep disturbances," said Rauch. "If you put someone with migraine disturbances in an environment with throbbing low-pressure pulse, that affects the autonomic nervous system or inner ear balance organs. It may be likely that those patients, because of general susceptibility, have intensified distorted reactions."

Rauch also cautions against those who say complaints are psychological in nature.

"That's a slippery slope, blaming the patient in medicine," he said. "I am not a wind industry businessman or a policy maker. I am a doctor, and I take care of my patients."

As for Sue Hobart, she has had to give up her floral work and now lives miles away from Falmouth's wind turbine towers in neighboring Bourne. Her house by the wind turbines is up for sale, she said, but because she disclosed her health problems to potential buyers, its value has dropped by half. . "We tried to keep our house -- we built it ourselves," she said. I

had six acres, planted trees and flowers and bought a bobcat and a backhoe and built the rock walls myself. It was my pride and joy. Every time I think about it I cry."

Hobart's headaches are gone, but depression has set in.

"I didn't know anything about wind turbine syndrome," she said. "It made me abandon my house. I had everything I ever wanted and I can't live there."

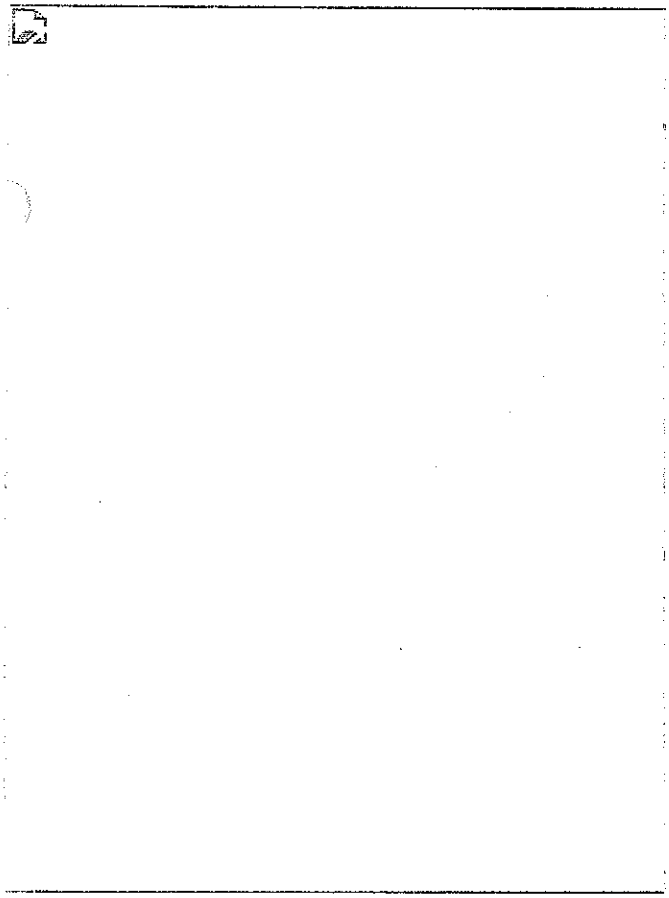
ABC News' Karin Halperin contributed to this story.

Wind Turbines can be Hazardous to Human Health

Alec N. Salt, Ph.D., Cochlear Fluids Research Laboratory, Washington University in St. Louis.

Updated 4/2/2014. To keep this as readable as possible I have not included reference citations. They are typically available in our publications.

Large wind turbines generate very low frequency sounds and infrasound (below 20 Hz) when the wind driving them is turbulent. The amount of infrasound depends on many factors, including the turbine manufacturer, wind speed, power output, local topography, and the presence of nearby turbines (increasing when the wake from one turbine enters the blades of another). **The infrasound cannot be heard and is unrelated to the loudness of the sound that you hear.** Infrasound can only be measured with a sound level meter capable of detecting it (and not using the A-weighted scale). Video cameras and other recording devices are not sensitive to infrasound and do not reproduce it.



You cannot hear the infrasound at the levels generated by wind turbines, but your ears certainly detect and respond to it. The picture shows the **enormous** electrical potentials that infrasounds generate in the ear. The potentials (18.7 mV pk/pk amplitude in this case) are about 4 times the amplitude of sounds in the normal frequency range that are heard. **These measurements show that the low frequency part of the ear is extremely sensitive to infrasound.**

Our measurements show the ear is most sensitive to infrasound when other, audible sounds are at low levels or absent. That is why **homes** and **pillows** probably contribute to the problem. To clarify, maximum stimulation of the ear with infrasound will occur inside your home, because the audible sound of the turbines is blocked by the walls of the house, but infrasound readily passes through any tiny openings. Similarly, sleeping with one ear on a pillow will block audible sound to that ear but will not block the infrasound. In either case, the infrasound will be strongly stimulating the ear even though you will not be able to hear it. The presence of sounds at higher frequencies, in the 150 Hz – 1500 Hz range at levels above 60 dB SPL, suppresses the ear's response to infrasound. It may be possible to mask the influence of

H 1 C

infrasound with other noises but the frequency properties of the masking noise must be considered. Frequencies above about 1500 Hz will not do anything to help.

We know that the ear is being stimulated by this sound, but why would that matter if you cannot hear it?

There are several ways that infrasound could affect you even though you cannot hear it. They are:

1. **Causing Amplitude Modulation (pulsation) of heard sounds.**
   We know that infrasound affects the sensory cells of the ear in a way that changes their sensitivity (like turning the volume control of the stereo up and down repeatedly). This is a biological form of amplitude modulation that **cannot be measured with a sound level meter.** The people who are measuring amplitude modulation of heard sounds with sound meters are looking at something completely different. Biological amplitude modulation can be much more powerful, with the volume cycling from going from "off" to "full", rather than just changing a few dB. So, to investigate amplitude modulation without considering the infrasound-induced component is probably not going to explain the true nature of the problem.
   Symptoms: Pulsation, annoyance, stress

2. **Stimulating "subconscious" pathways.**
   We know that activity in many nerves of the ear does not result in "hearing". If the nerves from the utricle or semi-circular canals are stimulated, you may get eye movements and changes in tension of neck muscles, but you don't hear it. The pathway of conscious hearing is very well established. It goes from the inner hair cells of the cochlea, through type I auditory nerve fibers, to the fusiform cells of the cochlear nucleus in the brain, and so on. This pathway has been well-studied. The outer hair cells of the ear (the ones that are sensitive to infrasound) do not connect to this conscious pathway. They connect to the type II nerves (which make up 5% of the nerve fibers), then to granule cells in the brain, then to cartwheel cells and to a host of other pathways in the brain. The cartwheel cells are known to be inhibitory to hearing which may explain why the stimulation is not heard. It is known that granule cells are connected into circuits related to attention and alerting. It is not unreasonable to think that stimulation of this pathway could wake you up, and you wouldn't even hear what had actually woken you.
   Symptoms: Sleep disturbance, panic, with chronic sleep deprivation leading to blood pressure elevation, memory dysfunction and more.

3. **Causing Endolymphatic Hydrops.**
   The endolymph is a fluid filled compartment in the ear, like a balloon, surrounded by delicate membranes. In some conditions, such as in people with

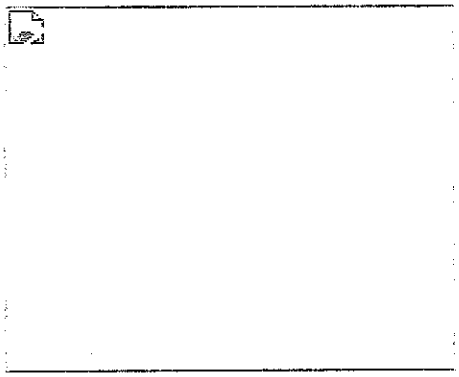
Meniere's disease, a swelling of this compartment occurs. These patients suffer from repeated vertigo spells, fluctuating low frequency hearing loss, tinnitus and a sensation of fullness or pressure in the ear. Low frequency sounds, at levels that are not damaging and do not affect hearing, have been shown to cause endolymphatic hydrops. This can occur quickly, but also recovers quickly so there are minimal consequences. This effect has been demonstrated with tones as low as 50 Hz, but has never been studied with lower sound frequencies or with infrasound. There is no reason to believe that lower frequency sounds will not generate hydrops, as we know that endolymphatic responses to infrasound are larger than those to heard sounds. As hydrops develops, endolymph moves and expands the weakest part of the balloon, which is the saccule. The saccule is the body's gravity receptor, so if it is disturbed you will feel "off balance", dizzy (subjective vertigo) and nauseaous, especially if only one ear is affected (maybe the one you had on the pillow?- see above). Studies so far have only studied this for brief exposures of a few minutes. Effects are likely to increase with prolonged exposure to the sound. Furthermore, when the endolymphatic hydrops reaches a degree where the helicotrema of the cochlea is occluded, this makes the ear about 20 dB more sensitive to the low frequency sound and will undoubtedly exacerbate the problem.
Symptoms: Unsteadiness, dysequilibrium, vertigo, nausea, "seasickness", tinnitus, sensation of pressure or fullness in the ear

4. **Possibly Potentiating Noise-Induced Hearing Loss**
Animals were exposed to damaging noise, with and without low frequency sound present. When very low frequency sound was present, animals had greater hearing losses and larger areas of hair cell loss. So, if you are doing anything noisy (mowing the yard, using a chainsaw) the damage to your ears could be greater if low frequency or infrasound levels are high. It is therefore important to wear hearing protection when pursuing noisy pastimes near sources of infrasound (that you can't even hear). As a side-note, hearing protectors, especially the over-the-ear cup type, will not protect against infrasound even though they do reduce the audible, damaging sounds you can hear.

Each of the above mechanisms is based on published data showing the phenomenon exists, thus making it a scientifically plausible process. No one has shown that any of these four mechanisms cannot occur. However, the degree to which each phenomenon occurs in humans following prolonged exposure to the infrasound from wind turbines has not yet been demonstrated. But each now needs to be studied in more detail. The potential symptoms they could generate in people seem quite familiar though.

The Wind Turbine Industry is generally dismissive of claims that wind turbines can affect human health. For example, Scott Smith, vice president of policy for CanWEA H 11

(the Canadian Wind Energy Association), referring to the report of the Chatham-Kent Tribunal (Spring 2011) stated "The wind energy industry welcomes the tribunal's decision, as it is consistent with the balance of expert scientific and medical information which **clearly indicates there is no direct link between wind turbines and effects on human health**" *(my emphasis added)*.



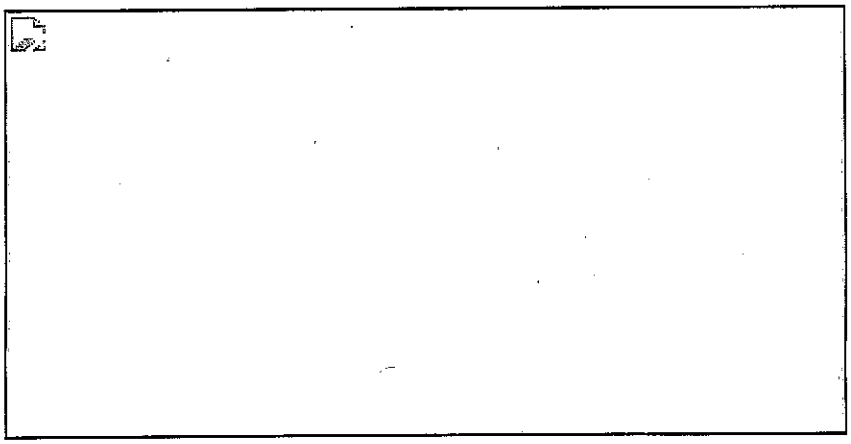
This dismissive statement fails to recognize a conclusion of the Chatham-Kent tribunal, specifically "*This case has successfully shown that the debate should not be simplified to one about whether wind turbines can cause harm to humans. The evidence presented to the Tribunal demonstrates that they can, if facilities are placed too close to residents. The debate has now evolved to one of degree.*"

We agree that the effects of wind turbine noise on humans are largely unexplored and more research is needed. We are convinced that infrasound levels generated by some large wind turbines are unusual in the environment and that there have been no systematic long-term studies of prolonged exposure to such sounds on humans or other animals.

The wind industry has taken the position that if you cannot hear the infrasound, then it cannot affect you. As you can see above, we disagree strongly based on our understanding of how the ear works. These web pages consider in more detail some of the areas that we have expertise.

Publications:

Reprints of copyrighted publications may be available if you e-mail me at salta@ent.wustl.edu

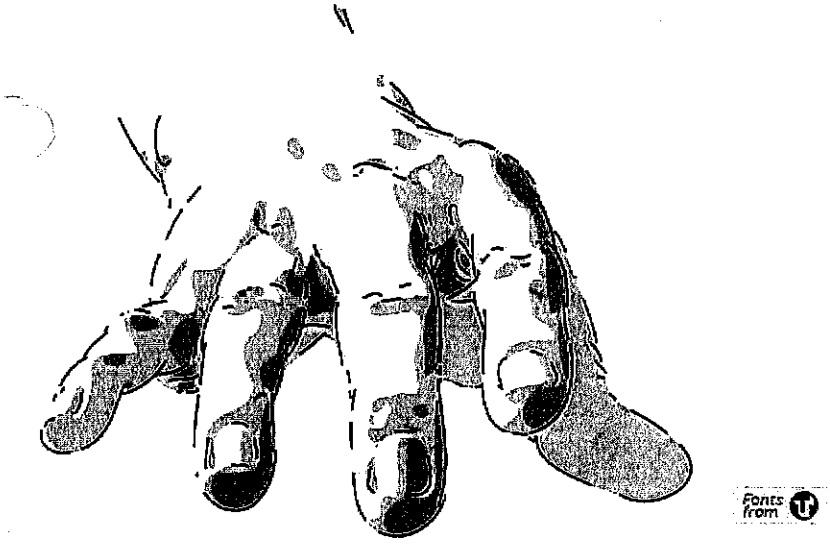


Acoustics Today 2014: The Magazine made many typographical errors in our paper Click for the complete manuscript

K-SELECTED BOOKS
SANTA FE · NEW MEXICO

THE PRIVATE HORROR OF WIND TURBINE SYNDROME: A TRUE STORY (FRANCE)

Aug 9, 2012



—**Hubert de Bonneville**

Last April, I spent two nights here, at home, covered with sleep surveillance equipment. I noted what I heard or not and at what time, and what I was doing (going to sleep, how much I heard the wind turbines, or if there was perfect silence, etc.).

The debriefing took place Monday July 16, at the hospital in Saint Etienne. A certain Doctor Emilia Sforza commented on the two diagrams corresponding to each of the two nights monitored. (I had never seen her before, she was different from the head of the unit I had seen before the surveillance, a certain Dr. Roche.) She never took the notes I had given them about the noise I heard during those two nights. She had not even read them, I suspect. She never pronounced the words "wind turbines."

She told me, on the basis of the first diagram showing the first night, that I had first gone to

H12

sleep rapidly and then slept correctly.

On the second night, I took much longer to go to sleep and my sleep was very bad. She then told me I had a psychological problem.

She never mentioned any sort of connection with anything I could have heard or not during those two nights.

I then made her take my notes out of her file, which she did reluctantly with a very sorry countenance. I had to ask her to look at my notes. She glanced at them and handed them to me disdainfully, saying she couldn't read them, with this same sorry, nearly disgusted, countenance.

I showed her: on the first night, when I went to sleep rapidly and slept correctly, as she herself had said, my notes read, "Total silence."

But I couldn't go further. Her speech was ready. She knew! She told me, again, that I had a typical psychological problem and that I was "obsessed" and that I needed therapy. Urgently.

She never showed me what the diagram said about the second night when I was awakened at 5:30 by very irritating vibrations, or when I got up at 7:10 in a very unnerved state (as my notes read).

And then, she said: "You can't go against a renewable energy."

I was astonished when I heard this doctor actually pronounce those words: Is that a clinical judgment? Can a doctor say such things? "You can't go against a renewable energy"?

I stayed polite. Not because I wanted to be (I was devastated). I'm used to not being believed; I know I'm on my own in this matter, in this nightmare, and I'm so tired of all this. I should write to this hospital and tell them to change jobs. I should sue that doctor Sforza for what she told me and for the despicable way she said it.

But I'm tired, my friends. I'm done. It's no use.

To top it all, on Sunday night (two days ago), I was tired and couldn't find the energy to drive down to my mother's apartment to sleep there, as I usually do. So I stayed at home and slept in my house. Everything was silent at the beginning. God, it's so nice at home when there are no vibrations! But, of course, the wind turbines started some time during the night and went on into the morning, and I left home Monday morning completely exhausted and in the weird state those vibrations left me in. My recovery time is much longer now, I've noticed.

I was still in a strange state Monday afternoon in Le Puy and I had a car accident there. My fault 100%. I DIDN'T SEE the car I bumped into. I didn't SEE it! That's frightening. I LOOKED, and I DIDN'T SEE. Fortunately, nobody was hurt. It's as if I had aimed at that car and very consciously cut off its route. Nobody does that.

And, of course, I'm told I was tired. "Such things happen when you're tired."

Now I say "yes." I just don't try to explain any more that it's not only tiredness. I know what I know, and I'm the only one around to know.

I'm leaving Thursday morning for a week's rest in the Alps. My sister-in-law has an

H13

apartment there, in Briançon. No turbines there.

My house is not ready to sell. It will wait. It won't be ready in September. I don't know where I'll be living then and I'll have to work again.

I just don't think that far anymore.

20 Comments »

Comment by Marsh Rosenthal on 08/10/2012 at 1:36 am

Dear Hubert,

First, I must observe that, as a victim of WTS, it is normal that you should feel depression and anger. Your clinician, Dr. Sforza, acted in violation of the Hippocratic Oath when she brushed off your suffering as psychological, as if she had any basis for that diagnosis. Rather than addressing your symptoms, which are physiological, she exacerbated your pain, not something that a responsible medical practioner should ever do.

Her comment to you that you cannot "go against a renewable energy" earns her the title of "shill for Big Wind." She seems to be so deeply "greenwashed" that it is probably useless to seek correction.

I shudder to think of her reaction if you attempted to describe the enormity of the conspiratorial tax shelter that the fascistic renewable energy industry has created for itself. She would flee the medical facility altogether when you explained the extent of the land grab that is the actual outcome of the colonization being perpetrated by the windpower industry in the name of clean and green energy.

That you had a driving accident is most unfortunate. Mark Cool, of Falmouth (Mass.), has written about his being rendered into an impaired state, akin to drunkenness, by his neighboring 1.65 MW windturbine. After developing a flawless record for over thirty years as a working air traffic controller, he now lives with the mortification of having a near-miss incident during one of his duty shifts. He correctly points out that if government creates unsafe and toxic living conditions with these huge machines, what can we say but that the green madness has captured this society and will be its undoing.

Dear Hubert, please stay as far away from the turbines as you can. You have already been sensitized by them. You are at an increased risk than those in the public who have not been in their presence. I am concerned for your safety.

Marsh

Comment by Andreas Marciniak on 08/10/2012 at 2:16 am

H 14

Hello Hubert, your not on your own in this,we experienced much of the same, after my daughter move in with me in Waterloo South Australia, I kept my eyes on her to see if she will get sick, as I have and a lot of others in Town, she showed signs after only one night, she was 17 years old at the time, so I told her to right down how she slept and how she feels first thing in the morning and I taken her blood pressure and Heart rate, only to find out her heart rate went through the roof and so did her blood pressure, so I had to take to the local Dr. and Taken the paper with me that she keep't her Info , I told him that it might have something to do with the Turbines , his reaction straight away was NO it cant be that," I go to the wind farms all the time with my Children and we don"t have any problems, He forgot to say that he is only there for a very short time", I said to him, look at what is on the paper, it clearly shows that when we are away from the Turbines she is better and her blood pressures and Heart rate goes down , even with that said, his reply !"
If you both feel better when your away from the Turbines just move".
so after 4 week or so, I told my daughter to go and stay in the City with her sister, and she did, after 2-3 day she got back to normal, even after she had a work out with a personal trainer (my daughter in the City),
she found that her blood pressure stayed normal.
So Hubert your not on your own, in what was my town, (Waterloo south Australia) we have between 50%-60%-70% of people have been mildly to servilely affected from the time they stared these Turbines 37 x 3mgw units.
kind regards
Andreas

Comment by gail on 08/10/2012 at 3:46 am

I'm **devastated** that they're still saying **these things**—that so-called doctors are saying these things. A certain psychiatrist said similar things to me in 2007 and I got that person to sign a wishy washy statement of why I went to see that person (you can see the report, names changed, **here** on this site). "They" have become more cautious these days but you are not alone and their house of cards will collapse. Believe it!

Deepest shame on this kind of bogus "professional."

Comment by Karen Bessey Pease on 08/10/2012 at 6:57 am

Cher Monsier de Bonneville,

Ach, mon ami . . . your story **breaks my heart**. I am so sorry that you have been victimized in this way. Your words bleed exhaustion and hopelessness.

You cannot know the tremendous empathy I feel for you. But I am experiencing disgust, dismay and tremendous anger at those who have imperiously decided that you can be sacrificed. That you and your neighbors are nothing more than collateral damage. That people living in Mars Hill (Maine) or Falmouth (Massachusetts) or Ontario (Canada) or

H 15

Scotland or Australia or New Zealand or Italy or France do not matter!

They DO matter. YOU matter! You MUST matter, for if you don't, nothing and no one does.

I ask, please, that you remain hopeful. That you continue to speak up for your rights as a human being. We're on the cusp, approaching critical mass. Soon, our voices will be heard—and not only heard, but taken into account. But that will only happen if we do not give up. If we do not let the wind industry wear us down. If we do not shy away from the controversy, nor let our fear of the establishment drive us into silence and immobility.

I understand that you are tired of feeling like you are a lone voice in the wilderness. I recognize the hurt and fear you feel when your symptoms are dismissed as a "psychological" problem. But dammit, YOU are NOT crazy. The truth is, THEY'VE been brainwashed. "Green-washed." They've been subjected to years of "conditioning" by the wind industry. They intuitively recognize the threat of losing their jobs if they don't tow the "wind" line. They understand that the "establishment" will set out to ruin their reputations—–thereby signing a death warrant for their careers and their standing in the community. Others are fanatic and dogged in their belief that industrial wind will save the planet so that they and their progeny can live another day.

Sir, THEY are the ones who aren't seeing the world clearly. Not you.

Oftentimes, those who won't listen—–those who ignore you or disregard you or who are closed-minded on the subject of the devastating effects of wind turbine noises—are every bit as much a victim as you are. The difference is, they don't know it. They can't conceive that they are being used to further the agendas of powerful corporate entities. No, as much as we'd like to hate and despise and revile them, many of them just don't understand that they are victims. You KNOW you are!

They think they are right.

But YOU are!

Please take care of yourself. You must stay healthy in order to live the full life you deserve. You must stay healthy to fight this battle—–for your sake and the sake of thousands of victims around the world.

The cold Atlantic separates us, but I am right there beside you in spirit.

Courage, mon brave.

Karen 'Kaz' Pease
Lexington Township, Maine, USA

Comment by sue Hobart on 08/10/2012 at 8:28 am

Well, **I certainly understand what you are going through.** I am in the process of **abandoning my home** and ripping up a little "fixer-upper" so I can simply sleep again.

H16

You aren't crazy and neither am I. I was **hospitalized** this year, though. In a "nut house." At first they thought I was indeed crazy, but after I got some sleep **they started to believe me**. I was probably the sanest person there, and the best suggestion anyone gave me was, "Don't go back there!"

So, I haven't slept at home for 5 months and am at the mercy of a good friend and her guestroom.

My beautiful custom-built home will be available for sale, or for rent or, better yet, for medical and sleep studies as soon as I get the plumbing working in the "fixer-upper." I offer it to any honest researcher to move on in and wire it up.

My home is the original location of the **Bruce McPherson Report**, so there is already a good bit of scientific data to start with. Let's Go somebody! Get the funding and let's prove this stuff! Sleep studies, **volunteer "guinea pigs"** (stressing "volunteer") and real scientists only, please.

All I can say after 2 years of torture and disbelief is if you are in a turbine house and suffering, just save yourself and get out at any price. We may well be broke after this but as least we will be alive and somewhat coherent. This has been just tooooooooo much to continue to bear!

Comment by Marsh Rosenthal on 08/10/2012 at 10:39 am

Dear Hubert,

WE ARE THE GLOBAL WINDTURBINE VICTIM'S SUPPORT GROUP! VOUS AVEZ RAISON! YOU ARE OUR BROTHER AND WE ARE HERE FOR YOU AND TO PROTECT YOU!

In solidarity!

Marsh

H17

ehp ENVIRONMENTAL HEALTH PERSPECTIVES

FOCUS | NEWS VOLUME 122 | ISSUE 1 | JANUARY 2014

Environ Health Perspect; DOI:10.1289/ehp.122-A20

Wind Turbines: A Different Breed of Noise?

Nate Seltenrich covers science and the environment from Oakland, CA. His work has appeared in *High Country News*, *Sierra*, *Earth Island Journal*, the *San Francisco Chronicle*, and other local and national publications.

About This Article open

PDF Version (2.1 MB)

Sue Hobart and her husband built their dream home in 2007 on a quiet, wooded lot outside Falmouth, Massachusetts. Five years later they abandoned it. Less than 1,500 feet from the empty house stands a mammoth wind turbine erected three years ago by Notus Clean Energy. Three blades mounted upon the 262-foot tower sweep an area of the sky equal to 1.3 acres, the size of a football field. They are visible through the forest from the house's meticulously landscaped yard.

Video of a wind turbine in motion illustrates the rhythmic "swooshing" sound of the blades

Direct link to media file (MP4 file, 3.0MB)

Duration: 29 seconds

© mdharrington/iStockphoto

But the problem with the property wasn't the degraded view—at least not for the Hobarts. The problem was the noise. Shortly after the turbine switched on in 2010, Sue began experiencing headaches, dizziness, insomnia, and a ringing in her ears. When she noticed the symptoms briefly disappeared during trips out of town, she began attributing them to the arrival of the turbine. Within two years she was ready to leave.

Fellow Falmouth resident Annie Hart Cool can relate. "We live on two and a half acres of land, and we can't use it because of the noise," she says. Cool and her husband live near one of two city-owned turbines installed in 2010 and 2011 that power a nearby wastewater treatment facility, with the excess energy providing a source of revenue for the city. "We were all so excited about it until it turned on, and then we realized we couldn't live with it," Cool says.

In all, 41 Falmouth families have formally complained to city leaders—as have countless other wind-farm neighbors in countries including Australia, Canada, and England. Meanwhile, a small but growing body of evidence has begun to suggest that the health impacts of wind farms can be very real.

Environmental Noise and Health

Researchers have been studying the impacts of environmental noise on human health since at least 1930.[1] Varying degrees of evidence exist for a wide range of nonauditory health effects potentially stemming from noise exposures, including cardiovascular disease,[2,3,4] hypertension,[5,6] stroke,[7,8] diabetes,[9] sleep disturbance,[10] endocrine effects,[11,12] minor psychiatric disorders,[13] and impaired cognitive development.[14]

H 18

Yet a March 2013 report by ENNAH, the European Network on Noise and Health, identified 12 areas in which the science of nonauditory health effects of noise still lacks sufficient evidence.[15] These include the extent to which air pollution and other coexposures may contribute to health effects identified in urban noise studies, the comparative health effects of short- and long-term noise exposures, and the relationship between individual health outcomes and noise sensitivity. "Noise sensitivity" has been defined multiple ways but generally refers to an individual's increased likelihood of perceiving noises as annoying—i.e., the person is both more attuned to and more bothered by noise.[16]

Although investigators may not know the exact nature of the relationship between noise and health impacts, or why noise affects some people differently than others, the evidence to date suggests that environmental noise pollution can have serious implications for public health. After air pollution, traffic noise is the second-largest environmental factor affecting human health in the European Union and Norway, according to a 2011 report by the World Health Organization.[17]

The report authors estimate that each year, western Europeans lose 1.0–1.6 million disability-adjusted life-years (DALYs) due to traffic noise, a figure thought to be conservative despite accounting for impacts on cardiovascular disease, cognitive impairment in children, sleep disturbance, tinnitus, and annoyance. Sleep disturbance was determined to be responsible for the largest independent share of DALYs lost (903,000), and annoyance (654,000) the next-largest share.[17]

Based on its standing definition of health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity," the WHO concludes that noise-induced annoyance "may be considered an adverse effect on health."[17] High levels of annoyance have also been shown to lead to stress responses and sleep loss, including attendant symptoms such as headache, gastrointestinal upset, anxiety, fatigue, and hypertension.[18,19,20]

Much of what scientists can conclude today about the health effects of noise in general draws upon studies of transportation noise in urban areas conducted over the past four decades. Among the first to suggest a link between noise and learning impairment was a 1975 study by environmental psychologist Arline Bronzaft.[21] In a New York City elementary school adjacent to an elevated train track, Bronzaft compared the reading scores of children in classrooms facing the tracks to those of children in classrooms on the other side of the building. She discovered that children on the noisy side were nearly one year behind their peers in reading. After two years, once noise-abatement measures had been completed—and other classroom variables held constant—Bronzaft returned to the school and found reading scores on both sides of the building to be at the same grade level.[22]

Today, notwithstanding Bronzaft's groundbreaking early study and New York City's ongoing efforts to mitigate noise pollution, much of the field's cutting-edge research originates outside the United States, where there is more funding and interest surrounding the nonauditory health effects of environmental noise.

For instance, from 2002 to 2006 a landmark study dubbed HYENA (Hypertension and Exposure to Noise near Airports) assessed the relationship between noise from aircraft and road traffic near airports and its implications for hypertension. Researchers measured blood pressure and collected a range of health, socioeconomic, and lifestyle metrics via questionnaire from 4,861 individuals between the ages of 45 and 70. These participants had lived near one of six major European airports for at least five years. The study revealed clear relationships between risk of hypertension and both nighttime aircraft activity and average daily road noise, after adjusting for major confounders including age, sex, body mass index, alcohol intake, and physical activity.[23]

Wind Turbines

Large-scale wind turbines are a relatively recent innovation, so the body of peer-reviewed research addressing the potential impacts of their unique brand of sound is sparse and particularly unsettled. Anecdotal evidence strongly suggests a connection between turbines and a constellation of symptoms including nausea, vertigo, blurred vision, unsteady movement, and difficulty reading, remembering, and thinking.[24]

The polarizing issue of wind-turbine noise is often framed one of two ways: Turbines are either harmless,[25] or they tend to have powerful adverse effects, especially for sensitive individuals.[26] According to Jim Cummings, executive director of the nonprofit Acoustic Ecology Institute in Santa Fe, New Mexico, most of the reports to date that have concluded turbines are harmless examined "direct" effects of sound on people and tended to discount "indirect" effects moderated by annoyance, sleep disruption, and associated stress. But research that considered indirect pathways has yielded evidence strongly suggesting the potential for harm.

Multiple recent studies, including one coauthored by Daniel Shepherd, senior lecturer at New Zealand's Auckland University of Technology, have demonstrated that sleep interference gets worse the nearer residents are to turbines.[20,27] "Sleep is absolutely vital for an organism," he

says. "When we lose a night's sleep, we become dysfunctional. The brain is an important organ, and if noise is disturbing its functioning, then that is a direct health effect."

In another recent study, Shepherd made a case for approaching the debate from a social or humanistic standpoint, taking perceived effects seriously even if the potential mechanisms through which they occur remain unclear. Many reasons exist for taking this approach with wind-turbine noise, he wrote.[28]

First is that turbine noise (that is, the aerodynamic noise produced by air moving around the spinning blades as opposed to any mechanical noise from the motor itself) is often deemed more annoying than the hum or roar of transportation noise because of its repetitive nature and high variability in both level and quality—from "swoosh" to "thump" to silence, all modulated by wind speed and direction. This pulsing, uneven quality enables the noise to repeatedly capture the attention and become more difficult to ignore.[29,30]

In addition, unlike vehicle traffic, which tends to get quieter after dark, turbines can sound louder overnight. As Cummings explains, "Often at night, wind shear sets in. This creates conditions with moderate winds at hub height and a sharp boundary layer below which winds are much lower, or even near still." The absolute noise level of the wind farm may be no more than during the day, but it can be 10–20 decibels louder than the quieter nighttime ambient sound levels. This detail has important implications for sleep disruption.

Third, wind turbines generate lower frequencies of sound than traffic. These lower frequencies tend to be judged as more annoying than higher frequencies and are more likely to travel through walls and windows.[31] Infrasound, or sound frequency lower than 20 Hz—inaudible to the human ear—has been associated in some studies with symptoms including fatigue, sleeplessness, and irritability,[32] as well as with changes to the physiology of the inner ear that have poorly understood implications.[33]

Many previous infrasound studies have looked at exposures in populations such as jet pilots and factory workers. Today, Cummings says, "There are some studies looking at whether wind turbine infrasound may have specific qualities that make it more apt to trigger health effects, especially nausea, than 'normal' infrasound from wind or waves or traffic, but these are still very preliminary."

Shepherd points out that residents of the rural and semirural areas—like Falmouth—where turbines are becoming more common may be a self-selected group who are naturally more sensitive to noise than the population at large. As such, they may have greater expectations of quiet and be more aware of noise disturbances, amplifying the potential for health effects related to environmental noise.[34]

"People live in these areas and create their own little patches of paradise, and part of that is the soundscape," Shepherd says. "When an industrial noise source comes in, they get very stressed, because they're losing something that is very dear to them." The negative feelings engendered by this loss of "amenity" (something that once brought joy) can further contribute to a feedback loop of stress, sleep loss, negative emotions, and related health impacts.[10,35]

But are quiet-seeking rural dwellers more prone to report health impacts from new turbines simply because they anticipate a negative outcome? That's the question surrounding the role of the "nocebo" effect—the flip side of placebo, where negative thoughts engender negative outcomes—which is yet another point of contention in the turbine-noise debate. The turbine nocebo effect gained currency worldwide following the March 2013 release of two Australian reports claiming to offer evidence that people who expect adverse effects of turbines—in part as a result of activism by groups such as Australia's Waubra Foundation—are more likely to report having them.

In Cummings' estimation, the two new studies are not as definitive as they purport to be.[36] One, a paper published at the University of Sydney,[37] considered no explanation of health effects other than nocebo. The other, a peer-reviewed study published in *Health Psychology*,[38] reported expectations to have, at most, a very small effect on either the number or severity of reported symptoms.[36] Still, the nocebo effect, whose role has been established in other areas of epidemiology and medicine,[39] may be impossible to rule out as at least a partial factor in some neighbor responses.

Looking Long Term

The gold standard for proving causality of an exposure is the randomized clinical trial. But when it comes to testing the health effects of noise exposure on humans, such a study design is likely to be not only impractical and difficult to implement, but also unethical.

The next-best evidence would come from longitudinal field research, many researchers agree, such as long-term studies that assess the health of a community before a turbine project is ever proposed and then continue to follow up during operation. Lercher notes that some effects of chronic noise exposure such as elevated blood pressure could take one or two decades to manifest at significant levels.

Most of the studies performed to date around both transportation and wind-farm sources have been cross-sectional, which makes it impossible to assess causality. That's because investigators cannot establish whether the potential cause precedes the potential effect. Lercher stresses that cross-sectional studies purporting to demonstrate a relationship between noise exposures and health effects may be averaging out potential effects that are only visible in some subgroups—e.g., those with certain medical risk factors, or those exposed to the noise for longer than others.

Today, wind turbine noise is attracting ever more interest as a public health issue. That's evident in the offerings at Noise-Con, an annual conference dedicated to noise research, says Purdue University professor Patricia Davies. She chaired the 2013 conference, which was organized in conjunction with the International Wind Turbine Noise Conference in Denver, Colorado. Davis says Noise-Con is beginning to see nearly as many sessions organized around wind turbine noise as in all categories of transportation noise combined. "A few years ago, there were just occasional papers," she says. "Certainly there's more interest right now, because of course there have been a lot more wind turbines built."

Despite increased attention to the issue throughout Falmouth, some residents claim they're hardly better off today than they were when the first turbine switched on in March 2010. Once complaints about the turbines reached a fever pitch, the city voted to limit operation of its two turbines to 12 hours a day, shutting them down between 7 p.m. and 7 a.m. (the Notus Clean Energy unit was not affected).[40] The two city-owned turbines still follow that schedule[41] after surviving a recent petition to decommission them, and in spite of not generating enough income to cover operating costs. Their future remains uncertain.

References

1. Smith EL, Laird DA. The loudness of auditory stimuli which affect stomach contractions in healthy human beings. J Acoust Soc Am 2(1):94–98 (1930); http://dx.doi.org/10.1121/1.1915240.

2. Babisch W. Road traffic noise and cardiovascular risk. Noise Health 10(38):27–33 (2008); http://dx.doi.org/10.4103/1463-1741.39005.

3. Hansell AL, et al. Aircraft noise and cardiovascular disease near Heathrow airport in London: small area study. BMJ 347:f5432 (2013); http://www.bmj.com/content/347/bmj.f5432.

4. Correia AW, et al. Residential exposure to aircraft noise and hospital admissions for cardiovascular diseases: multi-airport retrospective study. BMJ 347:f5561 (2013); http://www.bmj.com/content/347/bmj.f5561.

5. van Kempen E, Babisch W. The quantitative relationship between road traffic noise and hypertension: a meta-analysis. J Hypertens 30(6):1075–1086 (2012); http://dx.doi.org/10.1097/HJH.0b013e328352ac54.

6. Dratva J, et al. Transportation noise and blood pressure in a population-based sample of adults. Environ Health Perspect 120(1):50–55 (2012); http://dx.doi.org/10.1289/ehp.1103448.

7. Sørensen M, et al. Road traffic noise and stroke: a prospective cohort study. Eur Heart J 32(6):737–744 (2011); http://dx.doi.org/10.1093/eurheartj/ehq466.

8. Floud S, et al. Exposure to aircraft and road traffic noise and associations with heart disease and stroke in six European countries: a cross-sectional study. Environ Health 12(1):89. (2013); http://dx.doi.org/10.1186/1476-069X-12-89.

9. Sørensen M, et al. Long-term exposure to road traffic noise and incident diabetes: a cohort study. Environ Health Perspect 121(2):217–222 (2013); http://dx.doi.org/10.1289/ehp.1205503.

10. Zaharna M, Guilleminault C. Sleep, noise and health: review. Noise Health 12(47):64–69 (2010); http://dx.doi.org/10.4103/1463-1741.63205.

11. Babisch W. Stress hormones in the research on cardiovascular effects of noise. Noise Health 5(18):1–11 (2003); http://www.ncbi.nlm.nih.gov/pubmed/12631430.

12. Maschke C, Hecht K. Stress hormones and sleep disturbances—electrophysiological and hormonal aspects. Noise Health 6(22):49–54 (2004); http://www.ncbi.nlm.nih.gov/pubmed/15070528.

13. Stansfeld S, Clark C. Mental health effects of noise. Encyclopedia Environ Health 683–689 (2011); http://dx.doi.org/10.1016/B978-0-444-52272-6.00248-8.

PRODUCTION TAX CREDIT

The Economics of Wind Energy

Local Business & Economics Professor Urges Huntington County Plan Commission to Not Allow Wind Farms

Posted November 13, 2014 | HCCC Webmaster

The following are the remarks of Jim O'Donnell, Professor Emeritus of Business and Economics, Huntington University. This presentation on "*The Economics of Wind Energy*" was given to the Huntington County Planning Commission, on Wednesday, November 12, 2014. His remarks are published here, in their entirety, with his permission.

"Greetings and thanks."

"I'm speaking tonight as an adopted son of Huntington Co. But as that adopted son, I have struggled to understand why my chosen homeland would develop wind energy in the southeast part of the county. I guess it's for the tax revenue, the few jobs that will come with it, and the lease payments to the several farmers who will permit turbines on their land. But as an investor and economist, I feel a little like the auto mechanic who's being shown a car that a good customer wants to buy. Mechanically and economically, the purchase makes no sense to me, the mechanic, at all, but the buyer insists that he'll get so many credits for buying the car that even if it never starts, he'll make a bundle."

"Warren Buffett is no auto mechanic or used car salesman, but his name is known by many as a great investor. He's chairman of Berkshire Hathaway and makes enormous bets on companies we all know, companies like Coca Cola, Wells Fargo, Geico Insurance, Fruit of the Loom, Heinz Ketchup, Dairy Queen, and many more. He's very smart and is, arguably, the most successful investor alive, maybe of all time."

"He's made about $15 billion dollars of investments in wind and solar energy in Iowa and Wyoming, according to financial publisher Bloomberg. He's planning on investing $15 billion more elsewhere in America. Soon."

"His wind investments, he says, have treated him especially well. But they've treated his tax liabilities even better."

"The June 4th, The Wall St. Journal quoted him before an audience in his hometown of Omaha, Nebraska. He said, "I will do anything that is basically covered by the law to reduce Berkshire's tax rate. For example, on wind energy, we get a tax credit if we build a lot of wind farms. That's the only reason to build them. They don't make sense without the tax credit.""

"Those are not the words of, say, Sally and Joe living in Huntington County. No, Buffett is one of the richest men in the world, one of the shrewdest investors in the world, too, whose team has analyzed wind energies economic and investment possibilities with a fine-toothed comb. And he finds wind energy, essentially, an economic wasteland, save for the tax credits. Now if Buffett thinks that, why would Huntington be making investments in wind energy? Because the county will increase its tax revenues, even if only by benefiting from tax breaks to the very rich, paid for my ordinary taxpayers. It simply does not make sense. I don't even think it's right. But it makes sense for Buffett and for Huntington County

PTC 1

because their bottom line is increased."

"Let's try to understand Buffett's and other very wealthy people's attitudes towards "the tax credits" from wind energy? If we understand, then we'll understand why Huntington Co. might be willing to help rich people take more from the government breast at taxpayers' expense."

"Back in 1992, Congress created the Wind Production Tax Credit, or the "PTC," a small tax credit of about 2c per kilowatt hour that today is an even smaller $23 per megawatt of wind electricity generated, to nurture energy production in the then-infant wind energy industry. Earlier, government supported those who build structures, not energy production. Today, at least the incentive is the production of energy. Government incentives, like the PTC, are often used to promote young but crucial industries. That's not the problem with the PTC."

"The history of the PTC has been an off and on credit, renewed since 1992 by Congress for a year or two at a time. Then, it expires and fans of wind [no pun intended] get it renewed. It expired again last Dec. 31st. If we were to look at an honest graph of investments made in wind, we would see that it rises with the credit and collapses with its expiration. Moreover the infant industry it is meant to encourage is now more than 30 years old, kept alive by U.S taxpayers who keep paying to make it attractive for rich investors."

"It's important, too, to realize that the PTC can only be taken against "passive income" – that is, income from other investments by rich people and big companies. Wall St. bankers put together investors who want tax write-offs, which are provided by the PTC. Recall Buffett's words: "we get a tax credit if we build a lot of wind farms. That's the only reason to build them.""

"Approximately $24 billion of Federal subsidies have poured into wind energy since its beginning over 30 years ago. These credits limit funds that might help find really viable sources of alternative energy. In other words, as an investor myself, I'm saying the PTC is a misplaced bet. The PTC actually blocks funding for other green energy technologies that hold more promise. Rather than helping another infant, but worthy technology, the PTC is a handout to rich people and Wall Street."

"But government largesse does NOT end with the PTC. Not by a long shot. Not in a government as friendly to green energy and as hostile to fossil fuels as the Obama administration is. In fact, rarely has a multi-decade old infant industry enjoyed such disproportionate favoritism. Even though the wind industry produces currently only about 3.5 to 4% of the country's electricity, it receives 42% of the federal government's electrical financial support."

"Combined with other targeted incentives, the federal government, in fact, gives wind producers $56.29 per megawatt-hour, according to the federal government's own Energy Information Administration – the "EIA". By comparison, natural gas, oil, and coal power generation only get 64 cents per megawatt, while nuclear power receives $3.14."

"Seemingly innocuous, the PTC gives wind companies $23 in subsidies for each megawatt-hour of electricity they produce. This money adds up quickly; it costs taxpayers billions of dollars every year; while wind energy also creates huge problems, too, with sound, noise, landscape blight, bird kill, bat kill and intermittentcy. On average, wind turbines are spinning only about 30% of the time and, ironically, can't spin at all in high winds (Detroit Edison, DTE, to cite only one utility, turns their turbines off when winds exceed 45 mph.)"

"In addition to the support that wind power gets at the federal level, it gets huge support at many state levels, too. Currently, 30 state governments enforce mandatory purchases of wind, solar, or other green energies under so-called Renewable Portfolio Standards that require utilities to buy a certain percentage of their electricity from green sources, whatever the cost. This, of course, jacks up consumer's electric rates."

"We've all heard the saying, "there is no such thing as a free lunch," and that applies to government subsidies, too. When lawmakers give special tax breaks to their friends and favorite industries, they shift the tax burden onto everybody else left in the tax base. While subsidies may allow wind turbine makers to pump up their payrolls, such as putting a few people to work in Huntington Co., the rest of the economy suffers. Government subsidies divert labor and capital away from more productive areas of the economy, to those where cronies get richer, which slows overall economic growth – something I would think Hoosiers don't like."

"The PTC, when combined with federal and state benefits gives wind producers a great advantage over other energy producers. In fact, it exceeds half of electricity's wholesale price in many areas of the country. True, more wind energy is being produced each year, and its cost, relative to other forms of electricity is becoming more competitive. But only because of massive subsidies and higher rates for consumers."

"Federal and state subsidies are so high that they lead many wind farms to sell their electricity at a substantial loss, just to collect the tax credits. Many wind producers are literally paying utilities to buy their product — and yet they're still turning a profit because the taxpayer foots the bill by providing credits and subsidies."

"I have no ax to grind against the rich, but I don't think their gains should come as a loss to great numbers of Americans through higher energy costs."

"While wind's tax credits may be great for Warren Buffet and his bottom line, it's harmful for American taxpayers and very expensive to America's energy consumers."

"I really wish wind energy worked better. Many people, including me, think alternative energy, in time, will offer huge environmental benefits for our children and those who come after us. But right now, wind is a museum specimen of a government boondoggle, a monument to crony capitalism's, a favor to the rich and powerful over the little guy or the average person."

"Huntington Co. can make money on this, no doubt. We'll get tax revenue, a few jobs, and a few farmers get lease payments for turbines on their property. Living off the government breast is just not how I want to make money and I think such activities fly in the face of Indiana's character and Huntington's, too, as a place that favors freedom and honest work. It's won a reputation of late for free markets, low taxes, and for encouraging growth in the private sector. Indiana is and Hoosiers are enemies of senseless, wasteful spending. And Warren Buffett sees wind energy as senseless right now, except for the tax benefits it offers its investors. As conscientious, publicly-minded citizens of Huntington Co. who give of your own time and talents to consider what's best for our county's land, its people and its future, please don't allow wind energy's horrible economics to find a place to make a home."

PTC

WCO | WIND CONCERNS ONTARIO

Wind Concerns Ontario is a province-wide advocacy organization whose mission is to provide information on the potential impact of industrial-scale wind power generation on the economy, human health, and the natural environment.

OPINION: U.S. subsidies for renewables staggering

WEEKEND READING

Ottawa energy economist **Robert Lyman** has looked at the amount being spent (taxpayer dollars) by the United States to support renewable energy development, including wind power.

The dollar amounts are simply staggering. Look too at the amount of power generation being achieved, for the taxpayer money spent.

United States Subsidies for Wind and Solar Electricity Generation

How much do electricity consumers and taxpayers in the United States pay to help companies that produce industrial wind turbines and solar power equipment sell their products to electrical utilities? Some useful information on this subject came to light in March 2015, when the U.S. Energy Information Administration (EIA) published a report entitled *Direct Federal Financial Interventions and Subsidies in Fiscal Year 2013.* The report can be read online here:

http://www.eia.gov/analysis/requests/subsidy/pdf/subsidy.pdf

The report was prepared in response to a request from the U.S. House of Representatives. It focuses on both U.S. federal government subsidies to electricity production in general and subsidies to federal electric utilities. It does not include information on the programs of the U.S. states governments, 33 of which now impose Renewable Energy Standards that require electrical utilities to increase energy production from renewable energy sources. The report aims to provide data, not to draw conclusions or discuss policy issues. Most of the data compares the subsidy levels in 2013 to those in 2010, the date of the last EIA report on this subject. All figures are in U.S. dollars.

Here are the highlights.

- In 2013, subsidies to fuel and technologies used for electricity production totaled $16.1 billion, compared to $11.7 billion in 2010. Subsidies to transmission and distribution totaled $1.2 billion in 2013, compared to $10.9 billion in 2010.
- Subsidies to renewable energy for all uses totaled $15.0 billion in 2013, compared to $15.6 billion in 2010.
- Wind and solar energy are the two largest recipients of subsidies.
- In 2013, wind energy received $5.9 billion, of which $4.3 billion was in the form of direct expenditures (i.e. grants and contributions), $1.6 billion was tax expenditures (e.g. deductions and write-offs), and $49 million was research and development.
- In 2013, solar energy received $5.3 billion, of which $3.0 billion were direct expenditures, $2.1 billion were tax expenditures, and $284 million were R&D.
- Electricity-related subsidies increased 38% between 2010 and 2013, from $11.8 billion to $16.1 billion, largely as a result of a $4.2 billion increase in support for solar energy.
- **Wind energy received the largest share of direct federal support in 2013, accounting for 37% of total electricity-related subsidies.**
- Support for Smart Grid and electricity transmission represented the largest portion of electricity-related R&D subsidies. Nearly 39% of 2013 R&D expenditures were devoted to researching the electricity grid's capability to accommodate larger shares of electricity from intermittent sources.
- **Renewables, excluding biofuels, received 72% of all electricity-related subsidies in 2013, yet accounted for 13% of generation capacity and 4% of actual generation.**

Supporters of renewable energy often compare subsidies to renewable energy to those for nuclear energy and for oil and natural gas.

- In 2013, U.S. federal subsidies to nuclear energy totaled $1.7 billion, down from $1.9 billion in 2010. Of the 2013 figure, $406 million were spent on R&D and $1.1 billion were tax expenditures.
- Nuclear energy accounted for 1141 billion kilowatt-hours of electricity generation in 2013, 28% of the U.S. total.
- In 2013, subsidies to oil and natural gas totaled $2.3 billion (down from $2.7 billion in 2010), of which almost all were tax expenditures.
- Tax expenditures are largely incentives to invest and often involve the involve the deferral of taxes to later years conditional on reinvestment.

Robert Lyman

Ottawa

August 12, 2015

No Comments *Wind Concerns Ontario* *August 16, 2015*

cost-benefit wind power, electricity bills Ontario, WCO Exclusive, wind power Ontario *Permalink*

Enforce Radiation Devices Act for wind turbines: MP Larry Miller

Larry Miller challenges Health Canada to ensure the Radiation Emitting Devices Act is being followed by the wind energy industry

August 13, 2015, Owen Sound, ON –

Larry Miller, Conservative candidate and incumbent Member of Parliament for Bruce-Grey-Owen Sound, is taking Health Canada to task to ensure that the provisions of the Radiation Emitting Devices Act (REDA) is being adhered to by the wind energy industry.

The REDA states the following;

6.

(1) Where a person who is the manufacturer or importer of a radiation emitting device becomes aware, after the device has left the person's premises, of the fact that the device

(*a*) does not comply with the standards, if any, prescribed under paragraph 13(1)(*b*) and applicable thereto, or

(*b*) creates a risk to any person of genetic or personal injury, impairment of health or death from radiation by reason of the fact that it

(i) does not perform according to the performance characteristics claimed for it,

(ii) does not accomplish its claimed purpose, or

(iii) emits radiation that is not necessary in order for it to accomplish its claimed purpose,

the person shall forthwith notify the Minister.

"I would like to know how many REDA complaints turbine manufacturers have received from Canadians who feel they are being impacted by the wind energy industry and how many of these complaints have been reported to Health Canada. Canadians have a right to know this information and they have a right to know that wind turbine manufacturers have taken their complaints seriously," said Miller.

Miller has forwarded a letter to Health Canada requesting that they proactively ensure that health complaints due to exposure to wind turbines sent to turbine manufacturers are being brought to the attention of the Minister of Health under the requirements of the REDA. He is very disappointed with the lack of due diligence on the part of Health Canada to make certain that turbine manufacturers are following the legislation and that they are doing the investigative work and reporting required under the legislation. It is very clear that it is the manufacturer's responsibility to do so under the Act.

More information on the REDA can be found at the Justice Canada website below;

@Glen4Not What's up with your account?

23 hours ago

@ScottLuft We need clarificati on that, but agree. It isn't likely to be the 2+ km setback that would be appropriate!

1 day ago

RT @nurses4safepwr: $1BILLION lost on exported surplus power already in 2015 in Ontario. How many nurses could we employ for that? @RNAO hwindconcernsontario.ca/six-months-and...

1 day ago

Categories

- Agriculture
- cost-benefit wind power
- electricity bills Ontario
- endangered species Ontario
- ERT
- Green Energy Act
- Health
- health effects wind turbines
- IBA (Important Bird Area)
- Legal
- Not a Willing Host
- Parker Gallant
- Property Value
- Rural/Urban Divide
- Setbacks
- Uncategorized
- WCO Exclusive
- wind power Ontario

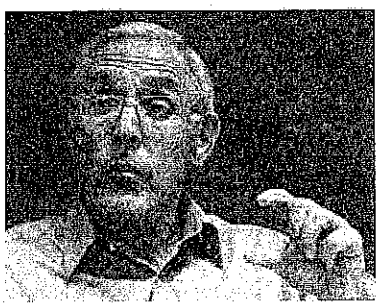
http://laws-lois.justice.gc.ca/eng/acts/R-1

-30-

22 Comments *Wind Concerns Ontario* *August 14, 2015*

Green Energy Act, Health, health effects wind turbines, Legal *Permalink*

Six months and Ontario's exports over $1B



What's another, er, billion?

Although the **Independent Electricity System Operator** (IESO) failed to produce their Monthly Summary for June 2015 in a reasonable and timely fashion, they did provide information that allows one to determine how much our electricity sector has removed from ratepayers pockets for the first six months of 2015.

How bad is it? Bad.

It turns out 1.9 terawatts (TWh) of Ontario's electricity production (15.2% of Ontario's demand of 10.6 TWh) was exported to our neighbours in Michigan, New York and Quebec, etc., in June. Ontario received payment of those exports at the hourly Ontario electricity price (HOEP) $15.31/megawatt hour (MWh) or 1.53 cents per kilowatt hour (kWh) of $29.1 million. However, the cost to produce and transmit that 1.9 TWh, was $131.43/MWh (13.14 cents/kWh) — that means it *cost* Ontario ratepayers $249.9 million. Most of that wound up in the big (and growing) pot referred to as the Global Adjustment (GA).

$221 million lost in just one month

So Ontario's electricity ratepayers picked up the difference of $221 million, which when added to our export losses for the prior five months of 2015, brought costs to almost 1.1 billion[1.] for the first six months of 2015.

The 1.9 TWh exported in June brought total exports for the first six months of 2015 to 12.53 TWh. That's about what the entire City of Toronto consumed in that same period.

Perhaps it's time for **Premier Wynne** to realize that the losses on our exports represents a "green tax" on all of the ratepayers in Ontario and the remedy is to cancel any further renewable energy contracts. This could prevent bankruptcy and hardship for many Ontario electricity customers and avoid fulfilling the prediction of Ontario's Chamber of Commerce that 1 in 20 businesses would "close their doors" due to high electricity prices.

©Parker Gallant,

August 11, 2015

1. The figure of $1.1 billion is equivalent to the cost of moving the Oakville and Mississauga gas plants but that was a one-time event whereas this cost to ratepayers will occur twice in 2015 and continue into the future.

14 Comments *Wind Concerns Ontario* *August 11, 2015*

cost-benefit wind power, electricity bills Ontario, Parker Gallant *Permalink*

Ontario rejects wind farms: 90+ communities say NO

NEWS RELEASE

Wind Concerns Ontario

OTTAWA Aug. 11, 2015 /CNW/ – More than 90 communities have now declared themselves to be unwilling hosts to huge power generation projects using wind turbines. The municipality of Nation, east of Ottawa, yesterday reversed an earlier statement of support, and the Town of Essex declared it wants no more wind turbines.

"The Premier promised not to force power projects on communities," says Wind Concerns Ontario president Jane Wilson. "But we still can't say 'no.' Making the unwilling host declaration is a powerful statement to this government."

Ontario citizens are increasingly aware that large-scale wind power brings potential environmental damage, harms wildlife, is linked to health impacts due to the noise and infrasound, and is causing electricity bills to climb beyond affordability.

Despite a surplus power supply and the high cost of renewables, Ontario is contracting for more wind power this year.

"The people of Ontario are saying 'We've had enough,'" says Wilson. "The current procurement program should be abandoned immediately."

www.windconcernsontario.ca

SOURCE Wind Concerns Ontario

3 Comments *Wind Concerns Ontario* *August 11, 2015*

cost-benefit wind power, electricity bills Ontario, Green Energy Act, health effects wind turbines, Not a Willing Host, wind power Ontario

Permalink

Essex says NO MORE WIND TURBINES

Blackburn News, August 11, 2015

GDF Suez representatives are met with a vocal contingent of residents in Essex opposed to the company's proposed wind project. (Photo by Ricardo Veneza)

Essex council is making it clear it doesn't want to see any more wind turbines in the town, rejecting a community benefit agreement for the Blue Sky Wind Project.

"We are not interested in any more windmills in our municipality," says Ward 3 Councillor Bill Caixeiro to loud and long applause in council chambers Monday night.

Councillors even charged the company behind the project, GDF Suez, had paid for letters of support to be sent to council.

"There was no payment made for any letters of support," says Bonnie Hiltz, government relations for GDF Suez. "They, I believe, were referring to letters of support for landowners who have voluntarily come forward to participate in the project."

Hiltz is disappointed in council's strong negativity towards the project.

"This is the very, very early stage of the project and so we've heard from residents that they want to be engaged and help inform the project as it evolves. That's what we're doing here, that's what we're doing with our public meetings," says Hiltz.

Public meetings are scheduled for Tecumseh and Essex this week.

Essex residents like Anna Markett feel the company is trying to bully people into backing the project, "We've been hounded for the last three or four months."

The Blue Sky Wind Project would have turbines mostly in Essex and into Tecumseh Township as well.

4 Comments *Wind Concerns Ontario* *August 11, 2015*

cost-benefit wind power, Green Energy Act, Not a Willing Host *Permalink*

Wind power project rejected: the people of Nation speak

Council for the municipality of Nation, just east of Ottawa, met last evening and decided to reverse a motion of support for two wind power projects, in St Bernardin and St Isidore. Nation is now **Not A Willing Host** to wind power projects, making it the 90th community in Ontario to reject wind power proposals.

The community group **Save The Nation/Sauvon La Nation** held a huge public meeting last week, and revealed that council had passed the support motion with no public discussion or input. The majority of residents are opposed to the power projects on the grounds that the potential for environmental damage is significant, and the impact on agriculture and the social fabric of the communities would be extensive.

"We are not for sale," said Julie Leroux of Save The Nation in an interview.

EDF of France had claimed it has spent hundreds of thousands wooing the community, paying for hockey dinners and other events designed to sway farm owners to sign leases for the project.

See the story from CTV News here: http://ottawa.ctvnews.ca/residents-of-nation-east-of-ottawa-fight-wind-turbine-projects-1.2510730

3 Comments *Wind Concerns Ontario* *August 11, 2015*
cost-benefit wind power, Green Energy Act, Not a Willing Host *Permalink*

Eastern Ontario wind farms: enjoy the horizon while you still can

From **Farmers Forum**, August 4, 2015

Community opposition to industrial-scale wind power mounting

Excerpt from "Eastern Limits" by Tom Van Dusen

I'm not sure what it is about North Stormont Township but wind power developers seem to love it.

Their calculations must have discovered more forceful winds than normal stirring the township. On the surface, though it seems no more or less windy than any other rural municipality.

In increasing numbers, developers have been wafting through the township looking for prime sites* to erect their industrial turbines. As in other communities where they've landed, their efforts have been the subject of increasing protests, petitions, and testy meetings.

Correctly gauging the way the wind is blowing on the issue, township council has just taken a stand against turbines and their proponents...for what that's worth. With the provincial government relentlessly pushing wind power, it's probably not worth much.**

Mayor Dennis Fife has explained that too many ratepayers are against wind projects for council to reasonably support them. Fife has expressed his personal opposition, claiming wind will never match nuclear power generation.

Typical of disgruntled ratepayers is Roger Villeneuve who worries that towers "much taller than any tree I've ever seen or will ever see" will soon dominate the local landscape.

...Council was helped along in its decision by Concerned Citizens of North Stormont which circulated an unwilling host petition, demanding that elected representatives back it at a meeting July 28. They did.

In explaining its opposition the citizens' committee cited the loss of property values and prime agricultural land, increased hydro costs to cover wind power expansion, environmental impact on birds and bats, health issues related to pulsating noise and shadow flicker, and eventual decommissioning costs.

...Developers have been through all this before, in several other Ontario municipalities where they've landed. You see, they have carte blanche from the province under the Green Energy Act, trumping any local motions, opposing them. Projects are decided by the province's Independent Electricity Service Operator [sic--it is "System" Operator] (IESO) with little regard for local concerns.***

...a growing number of wind power opponents are urging councils to use other tools at their disposal...one suggested option is refusing a bylaw to permit road access to turbine sites. ****

...

"Enjoy the natural horizon while there still is one," says ratepayer Roger Villeneuve.

Wind Concerns Ontario notes:

* What they are looking for is willing landowners. Wind doesn't really have much to do with it.

** The Not A Willing Host declaration stems directly from a statement by Premier Kathleen Wynne that she wouldn't force wind power projects on communities that weren't willing. Her failure to honour her word is underscored by the 89 (soon to be 90?) communities that have protested by municipal resolutions.

*** This is true but the failure of a developer to gain municipal support does not help them in a successful bid. Bids without community support are ranked lower.

**** This is not actually a valid option: several communities have tried this already and what happens is, the developer goes to the Ontario Energy Board which then grants permission to use road allowances. The municipality is then left without a road use agreement and possibility of compensation for the sometimes considerable damage to public roads.

8 Comments *Wind Concerns Ontario* *August 7, 2015*

electricity bills Ontario, endangered species Ontario, Green Energy Act, health effects wind turbines, Not a Willing Host, Property Value

Permalink

Nation residents meet to fight wind power projects

"Save The Nation" banner says it all [Photo: Wind Concerns Ontario]

More than 500 residents of the municipality of **Nation**, about 45 minutes east of Ottawa, met on Wednesday night to learn more, and discuss action on two wind power proposals for their community: a 150-megawatt project by EDF, and a 75-MW project by Leader Resources.

Among the speakers was **Carmen Krogh**, known internationally for her research on the impacts of wind turbine noise emissions on human health. A particular concern for Krogh, she expressed that evening, is the effect of the wind turbine emissions on children. Despite clear guidance from the World Health Organization and other bodies in public health about exposing children to possible harm, Ontario has proceeded to build wind power projects in communities close to homes.

Other speakers detailed the environmental impacts of the proposed wind turbine arrays, and commented on the degree of impact on the community for very little benefit.

Organizer Julie Leroux commented that the public was left out of a decision by council to support wind power; after signing an agreement to be an unwilling host as a member of the United Counties of Prescott-Russell, Nation then approved a motion of support for a wind power project by Sierra Nevada, in 2013. Nation's mayor has gone on record in the agricultural media as saying he supported the current EDF proposal, and that Nation is a "willing host."

We are not, said Leroux.

The community group Save The Nation requested time to make a presentation to Council but was not scheduled to do so now until August 31st; the deadline for wind power proposals under the new process is September 1st, the next day.

Questions and comments afterward were a clear demonstration not only that the community is already well informed on this issue, they are passionate about protecting their way of life, the social fabric of Nation, and the agricultural economic base.

"This will destroy the Nation, if it happens," said one gentleman.

Another, who had travelled to Wolfe Island to see turbines to educate himself (Note: a better trip would be to Brinston, south of Ottawa, where EDP is operating 3-MW turbines in the South Branch power project), said he was shocked at the environmental impact of the wind power machines. "The foundations for these things are huge," he said, "and they will never go away."

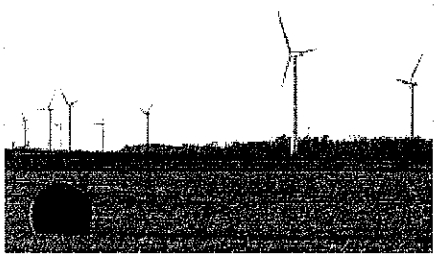
If the wind power projects are approved said one young farmer, who said he was speaking for others in his demographic of 20s and 30s, it will destroy the local economy and way of life in Nation. "We're leaving," he said simply.

Organizers for the event and members of Save The Nation said that no members of Nation council attended the meeting as far as they knew but MPP Grant Crack's executive assistant was there.

Breaking News: Wind Concerns Ontario has learned that Nation Council will be discussing the community reaction to the wind power proposals on Monday, August 10.

3 Comments *Wind Concerns Ontario* *August 7, 2015*
cost-benefit wind power, Green Energy Act, wind power Ontario *Permalink*

Kincardine OKs background noise study for Armow wind farm



Before it starts up...

Blackburn News, August 5, 2015

Time is of the essence as Kincardine council looks to conduct background noise studies before the Armow Wind project

begins operation.

Council has directed staff to report back as soon as possible in order to issue a Request For Proposal to hire a consultant to conduct background acoustic and infrasound tests in the project area.

CAO Murray Clarke says they need to move quickly because the 180-megawatt Armow project is nearing completion.

"The Armow project is planned to be plugged in and operating before the end of the year, so clearly in order to gather benchmark or background data, it must be done before the turbines are spinning," says Clarke.

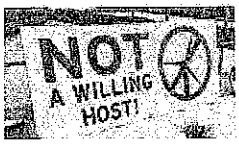
Council passed a resolution in 2013 to create a fund of up to $100,000 per year of tax revenue from Armow project for independent noise testing, but background testing is not included in the 2015 budget, so staff will report back with funding options.

Deborah Morris of Huron-Kinloss Against Lakeshore Turbines says they're urging Kincardine council to consider expanding its noise testing pledge to include the Enbridge wind farm in Bruce Township, as well as three other small wind farms proposed in the municipality.

However, Mayor Anne Eadie says council is focusing on the Armow project for now because of the tight timeline.

No Comments *Wind Concerns Ontario* *August 6, 2015* *wind power Ontario* *Permalink*

Leamington not willing host for new wind power proposal



Three municipalities covered by new Romney wind power proposal

Chatham Daily News, August 5, 2015

TILBURY - A renewable energy company is finding a willing host in Chatham-Kent and nearby Lakeshore, but the same can't be said for Leamington.

EDF EN Canada Inc. is proposing to develop 100-megawatt wind energy project, to be called Romney Wind Energy Centre, that would span more than 10,000 acres covering the southwest corner of Chatham-Kent, north of Wheatley, a large section of Leamington, as well as a sliver of the easterly boundary of Lakeshore.

The company hosted an open house at the Tilbury Memorial Arena on Wednesday to provide details of the proposed project to the public.

Mark Gallagher, a senior developer with EDF EN, said the company has attained a willing host agreement with Chatham-Kent, which will generate $8 million in revenues for the 20-year life of the project, including a 15% equity partnership agreement with the municipality.

The deal includes paying Chatham-Kent $2,500 per megawatt installed, which would equal about $150,000 a year, as well as $2.1-million equity deal, $56,250 in annual property taxes and a $180,000 annual maintenance contract for Entegrus, the municipal-owned electrical utility.

Lakeshore, which has only agreed to be a willing host for the connection line, would see a $500,000 benefit over 20 years.

However, Gallagher said Leamington has a non-willing host resolution in place, and is not willing to budge on that position when asked to consider this project.

He said the company is still evaluating its position on Leamington.

He noted the project is still feasible with only Chatham-Kent and Lakeshore involved, generating 60 megawatts of power. This reconfigured design would see about 20 turbines erected in the southwest corner of the municipality.

There are several landowners in Leamington who are willing to host a turbine on their property. A total of 10,000 acres have been secured for the project, with 6,000 acres having been signed in the last six months, Gallagher said.

"It's pretty good take up," he said, adding they are still in negotiations with some landowners in the area.

Gallagher said many people who initially balked at having a wind turbine on their property have changed their mind.

"We're getting a lot of calls from people who . . . missed the opportunity the first time around and now they want to be part of the project," he said. "They've seen them up and running, they realize there's actually no issues here."

However, only a fraction of that land will be required, because only a limited number of turbines could be erected in the area due to the various environmental and municipal setbacks in place.

While some municipalities are taking advantage of the economic benefits from wind projects, Gallagher said, "there's still opposition out there to wind."

Under Ontario's Green Energy Act, companies don't need a municipality to be a willing host, but Gallagher said the new procurement system for renewable energy projects favour those that are welcomed by the community.

David Thornton, associate – stakeholder resolutions for EDF EN, said notices for the meeting were sent out to property owners 550 metres beyond the project area.

"That's the call for the meeting, come out and ask questions," he said. "We, obviously, want to hear the feedback."

Gallagher said a key issue that the company plans to address is the aviation lighting on the turbines, which are the blinking red lights that annoy many people at night.

He said the company has committed to spending $10,000 per turbine to install the latest radar technology that would only activate the aviation lights if a plane is in the vicinity.

"It's just one more way we're trying to make it acceptable in the community," Gallagher said.

The company plans to submit its proposal to the Independent Electricity System Operator by Sept. 1, but doesn't anticipate finding out if it has been successful until at least Christmas.

If accepted, EDF EN would have up to four years to obtain all the environmental approvals and permits, Gallagher said this is very early in process, noting there would be many more open houses and a lot more notification would take place.

5 Comments *Wind Concerns Ontario* *August 6, 2015* *cost-benefit wind power, electricity bills Ontario*

Permalink

1 2 3 ... 557 *previous posts*

What's the True Cost of Wind Power?

BY **RANDY SIMMONS** 4/11/15 AT 5:22 PM

Editor's note: The author of this piece, Randy Simmons, is the Charles G. Koch professor of political economy at Utah State University. He's also a senior fellow at the Koch- and ExxonMobil-funded Property and Environment Research Center. These ties to the oil industry weren't originally disclosed in this piece.

As consumers, we pay for electricity twice: once through our monthly electricity bill and a second time through taxes that finance massive subsidies for inefficient wind and other energy producers.

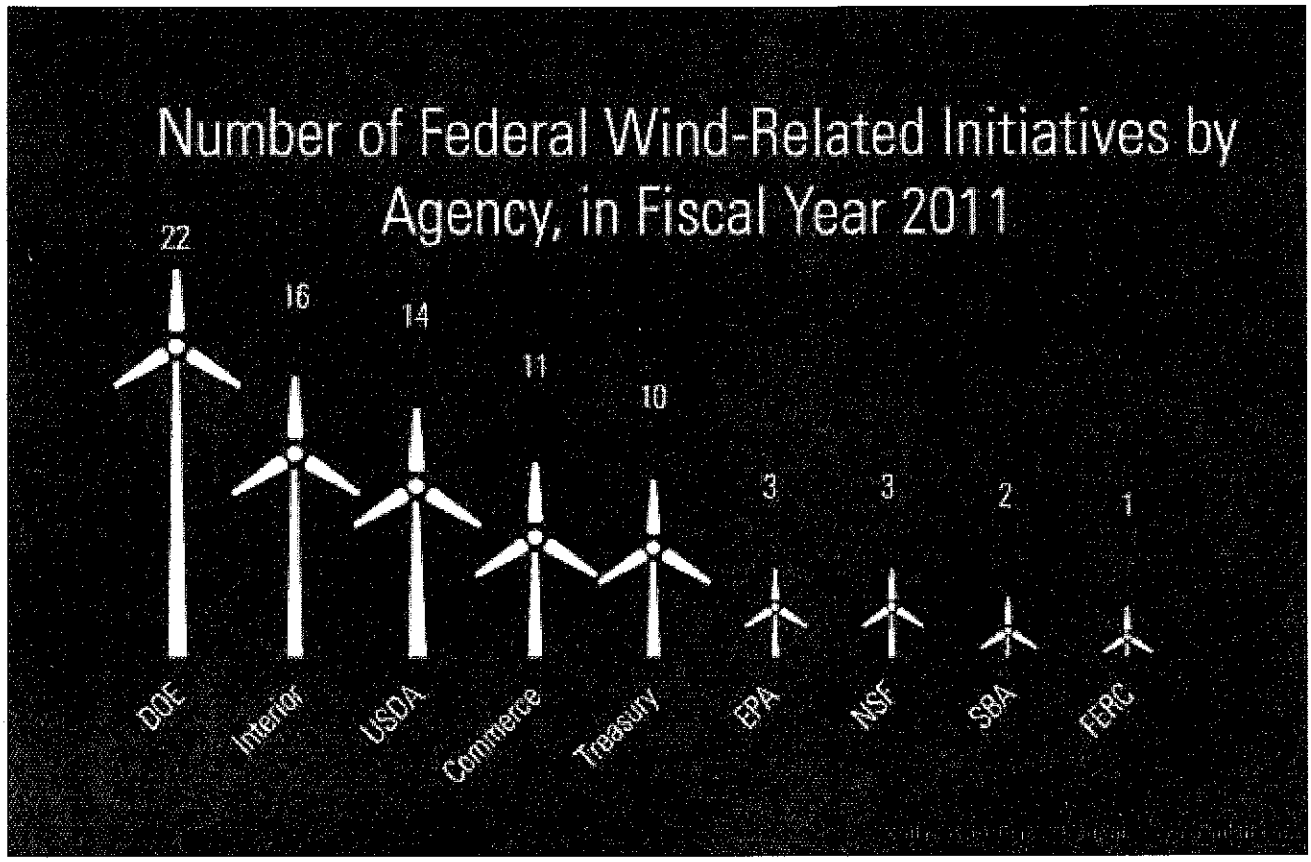
Most cost estimates for wind power disregard the heavy burden of these subsidies on US taxpayers. But if Americans realized the full cost of generating energy from wind power, they would be less willing to foot the bill – because it's more than most people think.

Over the past 35 years, wind energy – which supplied just 4.4% of US electricity in 2014 – has received US$30 billion in federal subsidies and grants. These subsidies shield people from the uncomfortable truth of just how much wind power actually costs and transfer money from average taxpayers to wealthy wind farm owners, many of which are units of foreign companies.

Financial advisory firm Lazard puts the cost of generating a megawatt-hour of electricity from wind at a range of $37 to $81. In reality, the true price tag is significantly higher.

This represents a waste of resources that could be better spent by taxpayers themselves. Even the supposed environmental gains of relying more on wind power are dubious because of its unreliability – it doesn't always blow – meaning a stable backup power source must always be online to take over during periods of calm.

But at the same time, the subsidies make the US energy infrastructure more tenuous because the artificially cheap electricity prices push more reliable producers – including those needed as backup – out of the market. As we rely more on wind for our power and its inherent unreliability, the risk of blackouts grows. If that happens, the costs will really soar.



Many government agencies are in the wind business these days. GAO

Where the subsidies go

Many people may be familiar with Warren Buffet's claim that federal policies are the only reason to build wind farms in the US, but few realize how many of the companies that benefit most are foreign. The Investigative Reporting Workshop at American University found that, as of 2010, 84% of total clean-energy grants awarded by the federal government went to foreign-owned wind companies.

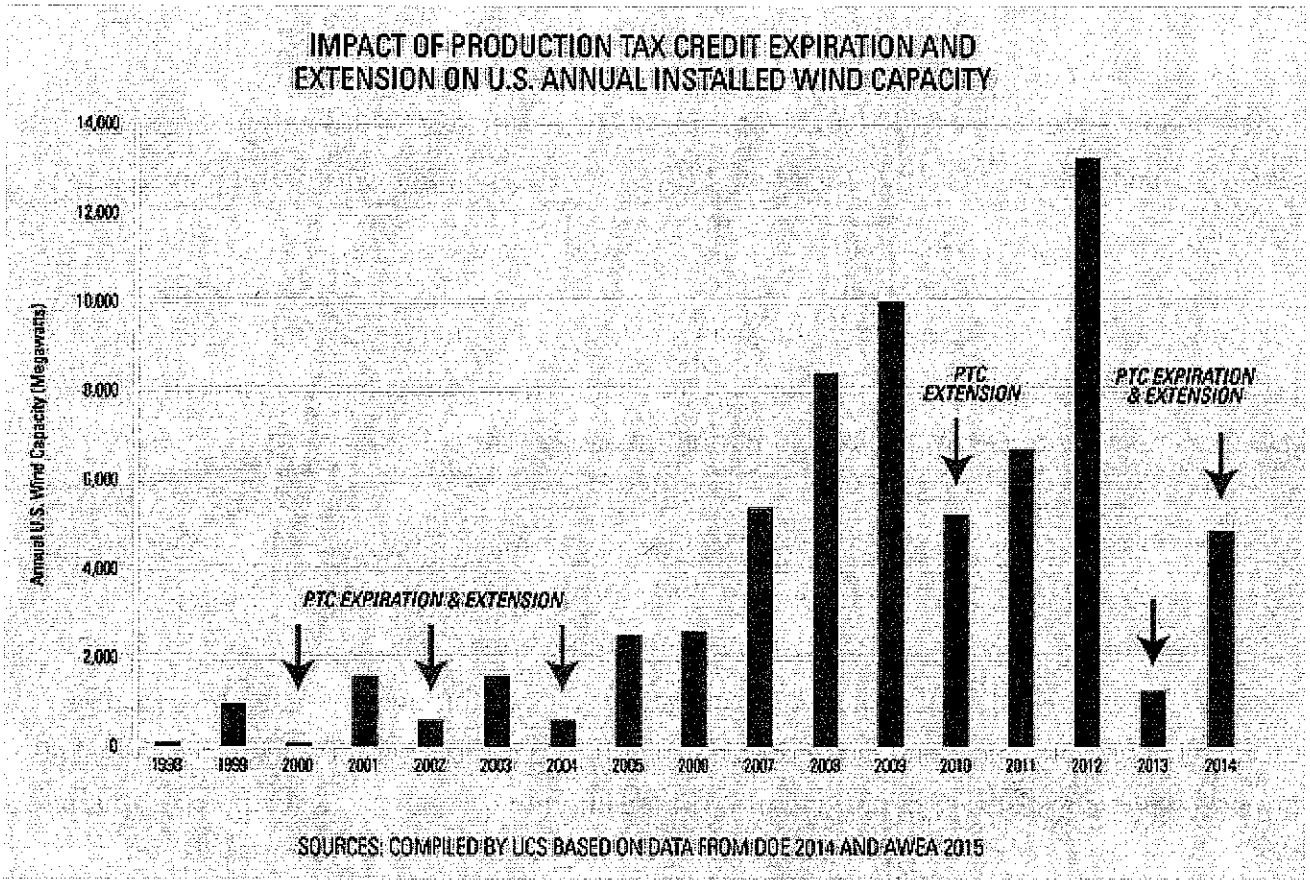
More generally, the beneficiaries of federal renewable energy policies tend to be large companies, not individual taxpayers or small businesses. The top five recipients of federal grants and tax credits since 2000 are: Iberdrola, NextEra Energy, NRG Energy, Southern Company and Summit Power, all of which have received more than $1 billion in federal benefits.

Iberdrola Renewables alone, a unit of a Spanish utility, has collected $2.2 billion in federal grants and allocated tax credits over the past 15 years. That's equivalent to about 6.7% of the parent company's 2014 revenue of $33 billion (in current US dollars).

President Obama's proposed 2016 budget would permanently extend the biggest federal subsidy for wind power, the Production Tax Credit (PTC), ensuring that large foreign companies continue to reap most of the taxpayer-funded benefits for wind. The PTC is a federal subsidy that pays wind farm owners $23 per megawatt-hour through the first ten years of a turbine's operation. The credit expired at the end of 2013, but Congress extended it so that all projects under construction by the end of 2014 are eligible.

In all, Congress has enacted 82 policies, overseen by nine different agencies, to support wind power.

I explained in December why Congress shouldn't revive the PTC, which expired at the end of 2014. In this article, I'm adding up the true cost of wind power in the US, including the impact of the PTC and other subsidies and mandates. It's part of a study I'm doing of other energy sources including solar, natural gas, and coal to determine how much each one actually cost us when all factors are considered.



As Warren Buffett has said, there wouldn't be a wind industry without the PTC. UCS, DOE, AWEA

Tallying the true costs of wind

Depending on which factors are included, estimates for the cost of wind power vary wildly. Lazard claims the cost of wind power ranges from $37 to $81 per megawatt-hour, while Michael Giberson at the Center for Energy Commerce at Texas Tech University suggests it's closer to $149. Our analysis in an upcoming report explores this wide gap in cost estimates, finding that most studies underestimate the genuine cost of wind because they overlook key factors.

All estimates for wind power include the cost of purchasing capital and paying for operations and maintenance (O&M) of wind turbines. For the studies we examined, capital costs ranged from $48 to $88 per megawatt-hour, while O&M costs ranged from $9.8 to $21 per megawatt-hour.

Many estimates, however, don't include costs related to the inherent unreliability of wind power and government subsidies and mandates. Since we can't ensure the wind always blows, or how strongly, coal and natural gas plants must be kept on as backup to compensate when it's calm. This is known as baseload cycling, and its cost ranges from $2 to $23 per megawatt-hour.

This also reduces the environmental friendliness of wind power. Because a coal-fired or natural gas power plant must be kept online in case there's no wind, two plants are running to do the job of one. These plants create carbon emissions, reducing the environmental benefits of wind. The amount by which emissions reductions are offset by baseload cycling ranges from 20% to 50%, according to a modeling study by two professors at Carnegie Mellon University.

While the backup plants are necessary to ensure the grid's reliability, their ability to operate is threatened by wind subsidies. The federal dollars encourage wind farm owners to produce power even when prices are low, flooding the market with cheap electricity. That pushes prices down even further and makes it harder for more reliable producers, such as nuclear plants, that don't get hefty subsidies to stay in business.

For example, the Kewaunee Nuclear Plant in Wisconsin and the Yankee Nuclear Plant in Vermont both switched off their reactors in 2013. Dominion Energy, which owned both plants, blamed the artificially low prices caused by the PTC as one of the reasons for the shutdown.

As more reliable sources drop off and wind power takes their place, consumers are left with an electrical infrastructure that is less reliable and less capable of meeting demand.

Lost in transmission

Another factor often overlooked is the extra cost of transmission. Many of America's wind-rich areas are remote and the turbines are often planted in open fields, far from major cities. That means new transmission lines must be built to carry electricity to consumers. The cost of building new transmission lines ranges from $15 to $27 per megawatt-hour.

In 2013, Texas completed its Competitive Renewable Energy Zone project, adding over 3,600 miles of transmission lines to remote wind farms, costing state taxpayers $7 billion.

Although transmission infrastructure may be considered a fixed cost that will reduce future transmission costs for wind power, these costs will likely remain important. Today's wind farms are built in areas with prime wind resources. If we continue to subsidize wind power,

producers will eventually expand to sub-prime locations that may be even further from population centers. This would feed demand for additional transmission projects to transport electricity from remote wind farms to cities.

The final bill comes to...

Finally, federal subsidies and state mandates also add significantly to the cost, even as many estimates claim these incentives actually reduce the cost of wind energy. In fact, they add to it as American taxpayers are forced to foot the bill. According to Giberson, federal and state policies add an average of $23 per megawatt-hour to the cost of wind power.

That includes the impact of state mandates, which end up increasing the cost of electricity on consumer power bills. California is one of the most aggressive in pushing so-called Renewable Portfolio Standards (RPS), requiring the state to consume 33% of its electricity from renewables by 2020. Overall electricity prices in states with RPS are 38% higher than those without, according to the Institute for Energy Research, a non-profit research group that promotes free markets.

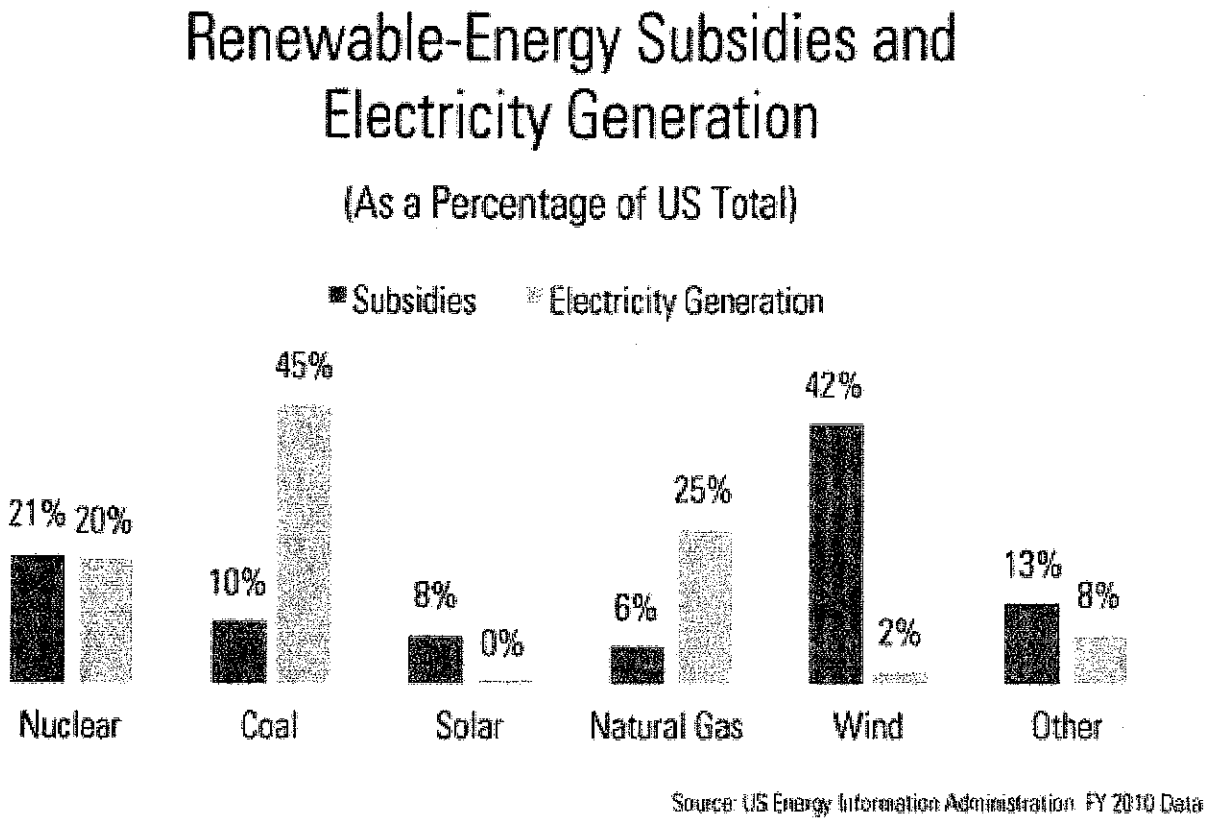
The best estimate available for the total cost of wind power is $149 per megawatt-hour, taken from Giberson's 2013 report.

It is difficult to quantify some factors of the cost of wind power, such as the cost of state policies. Giberson's estimate, however, includes the most relevant factors in attempting to measure the true cost of producing electricity from wind power. In future reports, Strata will explore the true cost of producing electricity from solar, coal, and natural gas. Until those reports are completed, it is difficult to accurately compare the true cost of wind to other technologies, as true cost studies have not yet been completed.

Blowing in the wind

The high costs of federal subsidies and state mandates for wind power have not paid off for the American public. According to the Mercatus Center at George Mason University, wind energy receives a higher percentage of federal subsidies than any other type of energy while generating a very small percentage of the nation's electricity.

In 2010 the wind energy sector received 42% of total federal subsidies while producing only 2% of the nation's total electricity. By comparison, coal receives 10% of all subsidies and generates 45% and nuclear is about even at about 20%.



Wind gobbles up the largest share of subsidies yet produces little power. EIA

But policymakers at the federal and state level, unfortunately, have decided that the American people will have renewable energy, no matter how high the costs. As a result, taxpayers will be stuck paying the cost of subsidies to wealthy wind producers.

Meanwhile, electricity consumers will be forced to purchase the more expensive power that results from state-level mandates for renewable energy production. Although such policies may be well intended, the real results will be limited freedom, reduced prosperity and an increasingly unreliable power supply.

Randy Simmons is professor of political economy at Utah State University. Megan Hansen, a Strata policy analyst, co-authored this article, which first appeared on The Conversation. Full disclosure: Randy Simmons receives funding from the U.S. Department of Energy (grant has been completed and there is no current funding) and Strata, a 501 (c)3 non-profit organization. Megan Hansen, a Strata policy analyst, co-authored this article.

PTC7

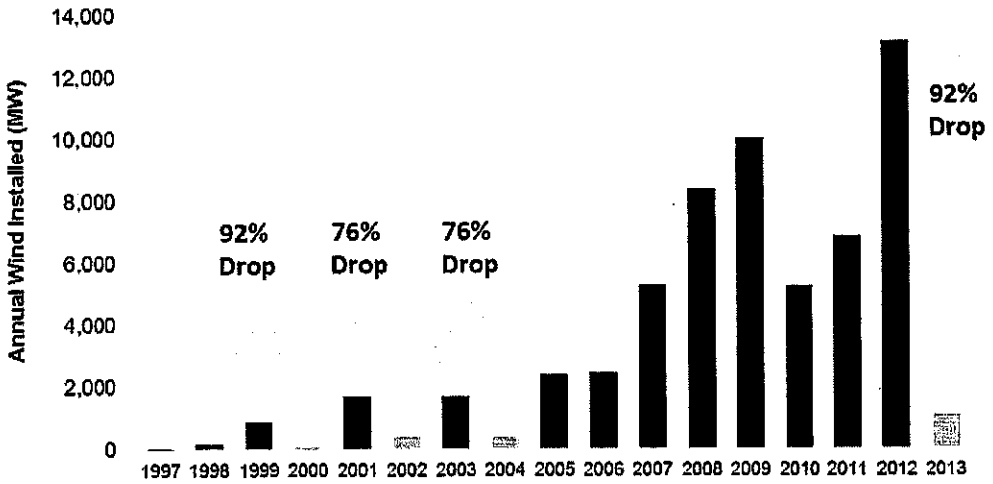
This article was originally published on The Conversation. Read the original article.

Newsweek *has published a response to this article which can be read here.*

Correction: This article has been updated with a corrected figure for wind power's current share of US electricity generation. It also clarifies the range of cost estimates from Lazard.

JOIN THE DISCUSSION

Historic Impact of Production Tax Credit (PTC) Expiration on Annual Wind Capacity Installation



The difference that stable policy can make is illustrated both through technical analysis and through actual developments. Take a look at the effects of uncertain federal tax policy on the wind industry over the past several years:

PTC in 2012: Threat of policy expiration halted wind development

In 2012, it was uncertain whether the PTC would expire at the end of the year, or be extended. Companies throughout the wind industry were **forced to put their development plans on hold, and manufacturers saw orders dry up.** Examples included:

- Wind turbine blade manufacturer LM Wind Power laid off 94 full-time employees and 140 temporary employees from its Little Rock, Ark., plant in August 2012. In September, it announced further layoffs of 200 full-time manufacturing employees, 15 administrative staff, and 130 temporary workers and contractors from its Grand Forks, N.D., plant.
- Wind turbine manufacturer Siemens laid off 615 employees in Iowa, Kansas and Florida.
- Wind project developer Juwi Wind closed its office in Cleveland, Ohio, and laid off the 14 staff members who worked there.
- Wind project developer Iberdrola Renewables laid off 50 U.S. employees, about half of whom were based in Oregon.

PTC study: Four-year PTC would mean 54,000 jobs

When the PTC was set to expire at the end of 2012, Navigant Consulting completed a study that demonstrated the value of stable PTC policy. The study found that a four-year PTC extension

PTC8

The Wind Power Industry Could Lose The Subsidy Tailwind At It's Back

For the two decades, investors in wind energy have been buoyed by nearly $9 billion in federal and state subsides and giveaways. The federal "production tax credit" gives corporations in the industry a 2.3-cent tax credit for every kilowatt-hour of electricity produced. Some states have padded the subsidies with their own generous financial support. Whenever we look at company or industry, however, it's critical to realize that we are not looking at a photograph, a snapshot in time, but rather more like a movie an evolving story that can sometimes take an unforeseen twist. In the case of the wind industry, it's looking like just such a twist is coming as the days of government support for the industry appear to coming to an end.

For this development we turn to first to Texas where the State Senate by a two-to-one margin effectively eliminated all support for wind power. Oklahoma's state House voted by a 78-3 margin to eliminate property tax exemptions for the wind power sector. In February, the West Virginia legislature repealed a requirement that

PTC 9

state entities generate a quarter of their power from alternative sources.

Now the federal government appears ready to sever to wind energy subsidy, a move that will test whether the upstart industry is prepared to stand on its own two feet without the crutch of government support. Wind energy companies have heavily relied upon a government construct known as the "Production Tax Credit" (PTC PMTC NaN%) to support their bottom lines. The PTC is a federal program that provides billions of dollars annually to subsidize renewable energy facilities such as wind farms. Generally speaking a clean technology facility receives a tax credit for 10 years after the date the facility is placed in service with the tax credit amount ranging from $0.23 per kilowatt-hour (kWh) for wind to $0.011 per kWh for qualified hydroelectric. Looking at theInternational Journal of Sustainable Manufacturing, researchers concluded that "in terms of cumulative energy payback, or the time to produce the amount of energy required of production and installation, a wind turbine with a working life of 20 years will offer a net benefit within five to eight months of being brought online."

Rep. Kenny Marchant (R-Tex) has just introduced legislation known as The PTC Elimination Act striking the statutory language for the primary federal handout for the wind industry from the U.S. tax code and provides

that the PTC should expire as of December 31, 2014 and not be extended in the future or retroactively.

This legislation includes a number of additional measures that reduce the subsidy for current beneficiaries, including tightening eligibility definitions and repealing the inflation adjustment for current PTC recipients. These changes will reduce the amount that American taxpayers are forced to subsidize wind companies by approximately 35 percent.

"If we want to build a healthier American economy, Congress must get rid of the deadweight in the tax code that is limiting our nation's potential," Marchant said. "That's why I have introduced legislation to eliminate the production tax credit." Marchant noted, "Since its creation in 1992, the PTC has ballooned from a temporary boost for energy innovation into a massive special interest handout for the now multibillion-dollar wind industry. Today the wind industry regularly produces more energy than the market demands while hardworking taxpayers shell out billions of dollars each year in PTC support. In fact, because the credit pays claimants for 10 years of energy produced, Americans are currently on the hook for a minimum of $6.4 billion over the next decade."

This has benefitted companies like NextEra Energy NEE -0.99%, which has received over $400 million in under the PTC. While that is one of the larger amounts, there is no shortage of other companies that have also benefitted. Duke Energy DUK -1.16%, received nearly $100 million in subsidies, while Sempra Energy SRE -1.3%, received an estimated $65 million and Xcel (XEL) received over $30 million. As noted in Sempra Energy's 2014 annual report, "For each of the years ended December 31, 2014, 2013 and 2012, PTCs represented a large portion of our wind farm earnings, often exceeding earnings from operations." Passage of the Marchant sponsored legislation would force Wall Street to cut earnings expectations for the above companies as well as those that serve the wind power industry, such as Siemens , Atlantic Power AT -2.55%, Emerson Electric EMR -1.14%, andABB .

Aside from the tax credit revenue side of the PTC, there is a darker side that is often ignored. The PTC has become a corporate tax shield to corporations like Berkshire Hathaway and Google GOOGL +0.42%. At one of his famous investor's summits, Warren Buffet once bragged that he would "do anything that is basically covered by the law to reduce Berkshire's tax rate. For example, on wind energy, we get a tax credit if we build a lot of wind farms. That's the only reason to build them. They don't make sense without the tax credit. Addressing this aspect of the PTC as well would

help close tax loopholes that would enable companies to minimize taxable income. One would think ending the handouts and closing tax loopholes would be enough for both sides of Congress to cross the aisle. If they do, wind power investors could see tailwinds become headwinds.

PTC 11

The Leaflet: Significant Declines in Wind Energy

Nathan Makla –
January 16, 2015
- Heartland Institute

Significant Declines in Wind Energy

Investment in renewable energy greatly relies on government regulations, tax benefits, and various subsidies. Throughout the nation, wind energy is losing steam. Even Warren Buffett admitted wind energy was a bad investment.

In an article by Senior Fellow James Taylor of The Heartland Institute, he discusses the costs associated with Ohio's renewable energy mandate. Taylor wrote, "Since 2008, U.S. electricity prices have risen by 3.2 percent, from 9.81 cents per kilowatt hour to 10.13 cents per kilowatt hour. In Ohio, by contrast, electricity prices have risen 8.7 percent since 2008, from 8.44 cents per kilowatt hour to 9.18 cents per kilowatt hour."

According to a Pew Charitable Trusts report, new capacity and investment in wind energy is declining. In 2012, Ohio was ranked 13th in the country for private investment in wind energy. However, after the Ohio legislature froze a requirement forcing utility companies to sell more electricity from renewable sources, the state's ranking fell significantly.

Investment in wind energy is expected to decline further in the next two years as the legislature studies the costs and benefits associated with the state's renewable energy mandate. Further hindering wind energy supporters, the legislature increased the distance that new wind turbines must be built from neighboring property lines.

State Sen. Bill Seitz (R-Cincinnati) says the legislature eliminated the mandate for wind and solar because it was costly and unconstitutional. Seitz suggests the cost of compliance threatens jobs for people working in the energy industry. The senator is pursuing a non-biased study examining the costs and benefits of the mandate to combat a current study using sources from left-leaning blog *Plunderbund*. Seitz said, "It is a fool's errand to examine only the benefits of the state mandates without also examining their cost."

Without substantial subsidies from federal taxpayers, it is unlikely wind energy will become profitable for private investors.

PTC 18

THE HILL

July 25, 2014, 10:00 am

Wind power production tax credit: Wall St. wolf in green clothing

By Curtis Ellis

The tax incentive for wind power expired last year, and the battle over its extension is now underway. Opponents say the wind power production tax credit, PTC, is a wasteful boondoggle while supporters say it's crucial for renewable energy and jobs. The Sierra Club calls it "one of the best bets we've made on clean, domestic energy."

But it's a misplaced bet. The PTC actually blocks the green energy technologies that hold the most promise. Rather than helping an infant industry, the PTC is a handout to Wall Street.

Congress created the PTC in 1992, a tax credit of roughly 2 cents per kilowatt-hour of wind electricity, to nurture the infant wind energy industry. Government incentives to promote crucial industries are time-honored. That's not the problem with the PTC.

What's important is that only big investors who want to offset tax liabilities on other investments need apply. The PTC can only be taken against "passive income" - income from other investments. Private equity firms put together investors who need a tax write-off courtesy of the PTC. Warren Buffett **admits** he uses the PTC to lower his Berkshire taxes: "we get a tax credit if we build a lot of wind farms. That's the only reason to build them."

The PTC doesn't help the average Joe who wants to put a small wind turbine on his ranch to generate electricity and reduce the taxes he pays on his farm income.

But while the PTC boosts Wall Street investment schemes in large-scale wind farms, the fact is small-scale, individually owned generation facilities hold the most promise for renewable energy.

Noted environmentalist Bill McKibben writes, "One of the great side effects of moving to renewable power is that we will replace vulnerable, brittle centralized systems that are too big to fail with spread out democratic energy sources." Unfortunately, the PTC only encourages more "brittle centralized systems."

California's Local Clean Energy Alliance (which includes the San Francisco Bay Area chapter of the Sierra Club) concurs. It's report, ***Community Power***, states "local, decentralized generation of electricity offers many benefits to California's communities relative to large central-station solar or wind power plants in remote areas."

The Institute for Local Self Reliance, a green energy cheerleader, says renewables work best "at small scales across the country," what's known as distributed generation, "a network of independently-owned and widely dispersed renewable energy generators" rather than "a 20th century grid dominated by large, centralized utilities."

In fact the Institute explicitly **says** the PTC is a significant barrier to greater investment in renewable energy. Removing this barrier "makes smaller projects more accessible to the local community, and draws local investors back into the process," says John Farrell of the Institute for Local Self-Reliance.

Utilities are also taking local-scale renewable energy seriously. A report by the Edison Electric Institute, **Disruptive Challenges** expects small-scale solar and wind "to challenge and transform the electric utility industry" with "adverse impacts on revenues, as well as on investor returns."

David Crane, CEO of **NRG Energy**, a wholesale power company that operates coal-fired plants, told **Blooomberg Businessweek** "the grid will become increasingly irrelevant as customers move toward decentralized homegrown green energy."

So, if local-scale wind and solar generated close to the end user makes the most sense, why do we have a PTC pushing large-scale wind farms? It's a Wall Street play.

Environmentalists supporting the PTC mean well, but they fail to see the wolf of Wall Street hiding beneath the green clothes. Ironically, the national green organizations are fighting for the kind of massive generating stations and power lines their local chapters often fight against.

The PTC is an anachronism and an obstacle to developing the decentralized, independently owned power generation system appropriate for wind, solar and other renewables.

Anyone who believes in renewable energy should be happy to see the PTC expire. It's time to replace this tax write-off for the financial services cabal with something that benefits everyone.

Ellis is executive director of the American Jobs Alliance.

PTC 13

6

Ex-Rep. Istook: Wind Energy a Crony Capitalist Gift

Wealthy investors in wind power are reaping profits from an expensive—and subsidized—form of green energy that is driving up the electricity bills of ordinary Americans, a former Oklahoma congressman told Newsmax TV on Thursday, October 23, 2014.

Under the guise of saving the planet from global warming, wind power has become a taxpayer ripoff and a boon to investors claiming massive federal subsidies for an industry that cannot compete on price with traditional energy sources, former Republican Rep. Ernest Istook told, "MidPoint" host Ed Berliner.

Of the $40 billion annually doled out to various green energy incentives, grants and loans, one of the biggest magnets for public funds in a wind energy tax credit first enacted in 1992, said Istook.

"For every megawatt hour that (producers) generate through wind energy, they get $23 from the U.S. Treasure," he said, "and of course you multiply that by the many thousands of megawatt hours that are generated—which is still a small fraction of what the country uses—and they're talking about an $18 billion renewal of this.

"Now, this was supposed to be a temporary tax credit back in 1992 to help the industry get on its feet," said Istook. "Well, the problem is wind power is such an expensive way to generate electricity, that even with these major subsidies—plus all sorts of subsidies from different states—it still is one of the costliest forms of power. And it makes people's electric bills skyrocket."

Istook said a new study from the Energy Information Administration—the U.S. Department of Energy's statistical service—finds electric rates rising four times faster in the states that use the most wind power.

He said the arrangement continues year in and year out thanks to a classic "vicious cycle," in which subsidy recipients use their profits to secure more subsidies.

"I want to give you a quote, though, from one individual who was a major wind energy investor and getting a lot of these tax benefits: Warren Buffett, "said Istook, citing the Nebraska-based billionaire investment guru.

"These are his words, not mine: 'We get a tax credit if we build a lot of wind farms. That's the only reason to build them. They don't make sense without the tax credit.' Those are Warren Buffett's words," said Istook.

"The people that are making this investment recognize that unless they can get these crony capitalism dollars, it's a bad investment," he said. "But government is paying them to do that. It's paying some people to get rich at our expense while our utility bills go up."

Istook said the public has a chance to put a stop to the tax credit, which expired last December, but is being pushed for retroactive renewal by the administration during the lame-duck congressional session that begins after the November 4 midterm elections.

"They've got the skids greased in the U.S. Senate to do it," said Istook.
And they will, too, he said, "unless people call their member of Congress and say, 'Don't vote for anything that renews this $18 billion giveaway, no matter what it's packaged with.

ptc14

THE WIND PRODUCTION TAX CREDIT AND THE CASE FOR ENDING ALL ENERGY SUBSIDIES

NICOLAS LORIS†

In a *New York Times* article entitled "A New Era for Windmill Power," journalist Matthew Wald writes,

> A new generation of windmills that Don Quixote could never tilt at is ready to take its place as an economical and important source of the nation's energy.
>
> Because of striking improvements in technology, the commercial use of these windmills, or wind turbines as the builders call them, has shown that in addition to being pollution free, they can now compete with fossil fuels in the cost of producing electricity.[1]

Although Wald's article reads like it could be found in this morning's *New York Times*, it was actually written in 1992—the same year Congress passed and President George Bush Sr. signed into law the Energy Policy Act of 1992, which provided a renewable-energy-production tax credit, which has largely benefited wind companies and is now more commonly known as the wind production tax credit (wind PTC).[2] The wind PTC was set to expire on December 31, 2012,[3] but was extended as part of the negotiations to avoid a combination of tax increases and government spending cuts.[4]

The discussion over the wind PTC extension serves as a useful microcosm of the debate over energy subsidies in general. Proponents of the wind PTC and other energy subsidies argue that government support is essential to spur innovation, compensate for decades of

---

† Nicolas Loris, an economist, focuses on energy, environmental and regulatory issues as the Herbert and Joyce Morgan fellow at The Heritage Foundation. The author would like to thank Katie Tubb, Romina Boccia, David Kreutzer, Jack Spencer, and Duncan Goodwyn for helpful suggestions and conversation.

1. Matthew L. Wald, *A New Era for Wind Power*, N.Y. TIMES. Sept. 8, 1992, at C2, *available at* http://www.nytimes.com/1992/09/08/business/a-new-era-for-windmill-power.html?pagewanted=all&src=pm.

2. Renewable Energy Production Incentive, Energy Policy Act of 1992, 42 U.S.C. § 13317a (current version at 42 U.S.C.A. § 13317 (West 2005)).

3. Producers that built windmills in 2012 would have continued to receive the subsidy until 2022 because a producer is eligible to receive the subsidy for ten years after installation.

4. American Taxpayer Relief Act of 2012, Pub. L. No. 112-240, 126 Stat. at 2314, § 407.

conventional-fuel subsidies, compete with other nations, prepare for replacement of fossil fuel resources we are rapidly exhausting, and reduce global warming.[5] Advocates argue that if the subsidy is not extended, the industry will atrophy and jobs would be lost.[6]

Opponents respond that extending the wind PTC will not save the planet, replace conventional fuels, or lead America to energy independence. Instead, opponents argue that an extension of the wind PTC will perpetuate subsidization in the American energy sector and encourage technological stagnation by shifting resources away from productive use.[7] This Article argues that Congress and the administration should work to remove all subsidies for all energy sources to transform our energy economy into a competitive, market-oriented system.

I. WHAT ARE SUBSIDIES?

The general economic rule of thumb is that if you want less of something, tax it, and if you want more of something, subsidize it. Subsidies come in many shapes and sizes and are thus often difficult to define comprehensively. Direct spending, targeted tax credits, loan guarantees, production mandates, and policies that artificially lower the risk of an activity are all part of the energy-subsidy world. However, this is certainly not an all-encompassing list. The definition of a subsidy as a direct transfer of money to a group or industry is underinclusive.

While this Article will mostly examine one type of subsidy—the wind PTC—it will use the following broader definition of subsidy: *Using the political process to support the production or consumption of one good over another.*

II. WHY SUBSIDIES ARE BAD ECONOMIC POLICY

Subsidies are bad economic policy because they misallocate resources and reward political connectedness as opposed to sound economic ideas. In general, there are two types of companies that

5. AM. WIND ENERGY ASS'N, THE AMERICAN WIND INDUSTRY URGES CONGRESS TO TAKE IMMEDIATE ACTION TO PASS AN EXTENSION OF THE PTC (2012), *available at* http://www.awea.org/issues/federal_policy/upload/PTC-Fact-Sheet.pdf.

6. *Id.*

7. DAVID E. DISMUKES, REMOVING BIG WIND'S "TRAINING WHEELS": THE CASE FOR ENDING THE FEDERAL PRODUCTION TAX CREDIT 5–6 (2012), *available at* http://www.americanenergyalliance.org/wp-content/uploads/2012/10/Dismukes-Removing-Big-Winds-Training-Wheels.pdf.

receive subsidies. First, there are companies that receive subsidies because their technologies need help from the government and cannot compete economically without taxpayer support. Second, there are companies that would, and often do, receive investment from the private sector because their technology is profitable or because investors find their technology promising. In this second case, the subsidy partially offsets private-sector investments that would have been made without the subsidy, and taxpayer dollars pad the company's bottom line.

Government support that targets one industry or technology over another encourages technological stagnation. A special endorsement from the government gives one technology an unfair price advantage over other technologies, which reduces competition. Further, subsidies reduce the incentive for an industry to make their technology cost-competitive by encouraging dependence on preferential treatment provided by the government.

The wind PTC is a perfect example of a technology's continued dependence on subsidies. Although the American Recovery and Reinvestment Act of 2009 (ARRA) set a clear end date for the wind PTC of December 31, 2012, the entire industry lobbied and successfully pushed through an extension.[8] In an April 2013 column in *The Wall Street Journal*, Patrick Jenevein, CEO of the clean energy firm Tang Energy Group, acknowledged the problems with his own industry's dependence on subsidies.[9] Specifically, Jenevein stated, "Government subsidies to new wind farms have only made the industry less focused on reducing costs. In turn, the industry produces a product that isn't as efficient or cheap as it might be if we focused less on working the political system and more on research and development."[10]

This is no special vice of the wind industry—the same has been true of the ethanol industry and many other industries, which have also benefited from favorable treatment by the government.

When the 2004 Volumetric Ethanol Excise Tax Credit was set to expire at the end of 2010, Congress extended the credit by another

---

8. Raju Chebium, *Wind Energy Has Small Slice of Energy Pie butBig Lobbying Push for Tax Credit*, COLORADOAN.COM (Dec. 7, 2012), http://www.coloradoan.com/article/20121207/NEWS01/312070013/Wind-energy-has-small-slice-energy-pie-big-lobbying-push-tax-credit.

9. Patrick Jenevein, *Wind-Power Subsidies? No Thanks.*, WALL ST. J., Apr. 1, 2013, at A13, *available at* http://online.wsj.com/article/SB10001424127887323501004578386501479255158.html?mod=WSJ_Opinion_LEADTop.

10. *Id.*

year after the corn lobby pushed hard for an extension.[11] Although the credit expired at the beginning of 2012, the corn lobby pushed and obtained tax credits for fueling infrastructure and advanced biofuels.[12] These special tax breaks benefit an industry that already has a guaranteed share of the fuel market. The Energy Policy Act of 2005 and the Energy Independence and Security Act extended a Renewable Fuel Standard that requires the United States to blend thirty-six billion gallons of ethanol into gasoline by 2022.[13] The industry's continual clinging to taxpayer-funded handouts is a result of receiving the initial tax credit, as evidenced by the boom and bust of the wind industry when the tax credit expired and then was reinstated.[14] Special carve-outs encourage industry complacency and dependence on government support.

Another destructive feature of subsidies is that they allow the federal government to direct the flow of private-sector investments. Direct expenditures, targeted tax breaks, loan guarantees, and other government subsidies allocate resources away from more competitive projects. For example, if the government gives a tax credit to banana producers only, it shifts labor and capital towards banana production and away from other economic activities, like strawberry or grape production.

In effect, by politically picking winners, subsidies crowd out investment and make it difficult for new technologies that do not receive a government handout to enter the market.[15] The market, and not politicians in Washington, is well-suited for determining how to allocate resources to meet consumer demand. When a firm minimizes costs, the firm maximizes profit by maximizing value to the consumer. Subsidies significantly distort that process.

---

11. Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010, H.R. 4853, 111th Cong. § 708(d) (2010), *available at* http://www.govtrack.us/congress/bills/111/hr4853.

12. Kirsten Korosec, *Why the Anti-Tax Lobby Saved Corn Ethanol—For Now*, CBSNEWS.COM (June 15, 2011, 7:53 AM), http://www.cbsnews.com/8301-505123_162-43045595/why-the-anti-tax-lobby-saved-corn-ethanol—for-now/.

13. Energy Policy Act of 2005, Pub. L. No. 109–58, 119 Stat. 594 (codified in scattered sections of 42 U.S.C.); Energy Independence and Security Act of 2007, Pub. L. No. 110–140, 121 Stat. 1492 (codified in scattered sections of 42 U.S.C.).

14. AM. WIND ENERGY ASS'N, *supra* note 5.

15. *See* Chung-Lei Yang, *Rent Seeking, Technology Commitment, and Economic Development*, 154 J. INSTITUTIONAL & THEORETICAL ECON. 640, 653–55 (1998) (discussing market inefficiencies resulting from subsidies).

Subsidies also make for poor economic policy because they politicize the economic process by allowing the federal government to highly influence decisions and investments. Industries that stand to benefit from subsidies concentrate more effort into lobbying for the subsidies and for preventing competitors from receiving similar handouts. Banana producers push for tax-credit extensions; in response, apple producers complain that they are at a disadvantage and lobby for their own handouts.

Companies and politicians both stand to profit from this perverse system. Taxpayer-funded subsidies create a system of cronyism between government and industry. The process can be (albeit simplistically) described as playing out in roughly three steps. First, Industry X hires lobbyists to meet with Congressman Smith and tell him that if he moves the subsidy legislation into law, Industry X will build the plant in Congressman Smith's district. Second, Congressman Smith says to his constituents and his state that his hard efforts brought jobs and economic growth, which certainly cannot hurt come re-election time. It also does not hurt that Industry X is contributing to Congressman Smith's campaign. Third, Congressman Smith wins re-election, and both he and Industry X clamor that the subsidy's expiration will hurt the local economy because Industry X will face layoffs. This process typically results in Industry X securing an extension of the subsidy and Congressman Smith holding onto his seat in Congress.

This tendency of the political process to continually pick winners and losers was first identified by economist Gordon Tullock[16] and later defined by economist Anne Krueger as "rent-seeking."[17] Its greatest costs result from distorting economic activity. The resources a banana producer used for lobbying for banana tariffs or an extension of the banana tax credit could have been spent actually growing and selling bananas. Rather than engaging in profit-seeking behavior in the marketplace, the producer is engaging in rent-seeking behavior in the political process. Thus, the more the government becomes involved in making economic decisions that are best left to the private sector, the higher the perverse incentive to lobby. While this does create a few lobbyist jobs, much consumer value is lost.

---

16. *See generally* Gordon Tullock, *The Welfare Costs of Tariffs, Monopolies, and Theft*, 5 W. ECON. J. 224 (1967).

17. Anne Krueger, *The Political Economy of the Rent-Seeking Society*, 64 AM. ECON. REV. 291 (1974).

Economist Russell Sobel of West Virginia University defines rent-seeking as unproductive entrepreneurship.[18] Political efforts made by rent-seeking companies could have been channeled toward productive uses instead of distorting economic activity.[19] Sobel found that states that provide more political preferences have higher levels of unproductive entrepreneurship and lower levels of productive entrepreneurship, and therefore have slower economic growth.[20]

Conversely, reducing government control of the energy economy reduces the incentive to use the political process for gain. While rent-seeking activity occurs in many sectors of the economy, the debate over the wind PTC extension provides an excellent example. Although clamoring from the wind industry for an extension of the subsidy occurred for all of 2012 until Congress passed an extension,[21] it is important to put much of this clamoring into context for future debates on energy subsidies.

III. REFUTING COMMON CLAIMS FOR JUSTIFICATION OF THE WIND PTC

Advocates for extending the wind PTC often argue that without an extension, the industry will lose jobs, America will move further away from energy diversity and towards dependence on foreign oil, and the planet will continue to warm.[22] However, such arguments are narrow and short-sighted, ignoring economic, energy-supply, and global-climate realities.

A. The Only Jobs Lost Are Those Propped Up by the Taxpayer

An enticing and attractive argument for the wind industry to make, especially in a recessionary economic environment, is that jobs will be lost with the subsidy's expiration. This argument, however, could apply to just about any sector of the economy. Take VHS or videotape producers, for example. Imagine the VHS industry writing this letter to Congress:

> VHS has been a staple of the American way of watching television and movies. VHS has supported countless manufacturing jobs, and even though there are better products out there, let's face it: we

18. Russell Sobel, *Testing Baumol: Institutional Quality and the Productivity of Entrepreneurship*, 23 J. BUS. VENTURING 641, 646 (2008).

19. *Id.*

20. *Id.* at 648.

21. Chebium, *supra* note 8.

22. *See, e.g.*, AM. WIND ENERGY ASS'N, *supra* note 5.

> need a variety of ways to watch our programs. The states and local economies that have VHS production facilities have experienced and benefited from VHS production, but without a little help from the taxpayers, jobs will be lost and the industry will atrophy. VHS production has bipartisan support, will be good for American manufacturing jobs, and will diversify our program-watching ability. America needs VHS, and VHS needs the taxpayers' help.

Windmills are no different than VHS tapes. The argument that, without extending the PTC, domestic energy production and American jobs will be lost is an equally flawed line of economic reasoning. The history of the wind PTC makes this point clear. Congress first passed the PTC in 1992 but allowed it to expire several times.[23] The PTC expired in 2000, 2002, and 2004, and annual wind installation decreased by 93 percent, 73 percent, and 77 percent, respectively.[24] Wind energy advocates call this a boom-and-bust cycle created by unstable policy,[25] but it is more likely a case of the wind PTC's oversupplying a market and artificially propping up a large portion of wind production. Predictably, in response to the looming expiration date, extending the wind PTC had bipartisan support. In fact, two Republican governors sent a letter similar to the hypothetical VHS letter to the House of Representatives and the Senate, urging them to pass the wind PTC extension.[26]

The Republican governors' letter cites a study by the economic consulting firm Navigant that estimates nearly half the wind jobs will be lost if Congress fails to act.[27] With enough taxpayer dollars, America can prop up just about any industry, even VHS, but that does not mean those jobs are adding value and growing the economy.

If Navigant's numbers are accurate, they indicate that the PTC subsidy has shifted labor and capital away from other, more productive sectors of the economy and towards wind.[28] Moreover, it shows that the entire wind industry will not disappear with the PTC,

---

23. Renewable Energy Production Incentive, Energy Policy Act of 1992, 42 U.S.C. § 13317a (current version at 42 U.S.C.A. § 13317 (West 2005)).

24. AM. WIND ENERGY ASS'N, *supra* note 5.

25. AM. WIND ENERGY ASS'N, PRODUCTION TAX CREDIT (2012), *available at* http://awea.org/issues/federal_policy/upload/PTC_April-2011.pdf.

26. Letter from Terry E. Brandstad, Governor, & Sam Brownback, Governor, to Conference Committee Members (Feb. 1, 2012), *available at* http://www.awea.org/newsroom/pressreleases/loader.cfm?csModule=security/getfile&pageid=13871.

27. *Id.* (citing NAVIGANT CONSULTING INC., IMPACT OF THE PRODUCTION TAX CREDIT ON THE U.S. WIND MARKET 24 (2011), *available at* http://www.awea.org/_cs_upload/learnabout/publications/reports/12538_3.pdf).

28. *See id.* (showing increased wind jobs during period of PTC).

indicating that some wind energy can compete in the electricity market without subsidies. The sector of the wind industry that does remain will be the healthier, robust part—the part that sells an economically viable product without the subsidy.

B. We Are Not Running Out of Fossil Fuels and Even if We Were, So What?

Another common justification for energy subsidies is that the United States has a limited amount of fossil-fuel resources and that domestically produced wind energy will put America on the track to energy independence. This is a shortsighted and unconvincing argument.

First, America has an abundance of domestic conventional-fuel resources. Coal is the single largest electricity source in America; for years, it is has been used for nearly half of all domestic electricity generation.[29] With 497 billion tons of recoverable domestic resources—enough to provide electricity in North America for 500 years at current consumption rates—coal has the potential to be a useful energy resource long into the future.[30]

Further, natural gas is taking on more of a role in the energy sector. North America has approximately 4.2 quadrillion (4244 trillion) cubic feet of recoverable natural gas, which would satisfy 175 years' worth of consumption at current rates.[31] The price of domestic natural gas is currently so low that companies have largely stopped drilling for dry-gas-only wells and instead are drilling where they can find wet gas or a combination of oil and gas.[32]

It is also useful to stress that these estimates are far from definitive. The history of global oil reserves, for example, provides a valuable lesson for believers of imminent resource exhaustion. Three decades ago, proven oil reserves were 645 billion barrels; five years ago, reserves were 1.28 trillion barrels; and in 2009, reserves increased

---

29. U.S. ENERGY INFO. ADMIN., ELECTRICITY IN THE UNITED STATES (2013), *available at* http://www.eia.gov/energyexplained/index.cfm?page=electricity_in_the_united_states.

30. INST. FOR ENERGY RESEARCH, NORTH AMERICAN ENERGY INVENTORY 16–17 (2011), *available at* http://www.energyforamerica.org/wp-content/uploads/2012/06/Energy-InventoryFINAL.pdf.

31. *Id.* at 9.

32. Mark Passwaters, *Massive Shift to Liquids Under Way, But Analysts Say It May Not Move Gas Prices*, SNL FIN. (Feb. 9, 2012), http://www2.snl.com/Interactivex/article.aspx?CdId=A-14173382-12848.

to 1.34 trillion barrels.[33] Even as the world consumes more oil than ever before, innovative technologies have helped discover and extract more crude oil. Meanwhile, the technological one-two punch of horizontal drilling and hydraulic fracturing has led to extraction of new reserves, tapping into areas where oil and gas recovery was previously thought to be uneconomical.[34]

Simply because the United States has these resources underneath its soil does not mean that they must be used. If another energy source is more affordable, then coal and natural gas can stay in the ground. If America were depleting its conventional fuels, it would be good news for wind proponents. Decreasing supplies of fossil fuels would drive up their price and make alternative power generation more economical. Price signals would trigger investments in competing technologies, and technologies that could provide lower-cost electricity would capture more of the market.

Additionally, there are competing uses for electricity-generating resources. For instance, not only does natural gas provide over thirty percent of America's electricity generation, but it also serves as feedstock for fertilizers, chemicals, and pharmaceuticals, and is used for waste treatment, food processing, fueling industrial boilers, and much more.[35] There is a profound complexity in producers' preference for selling their resources to those who are willing to pay more because they value the resource more. That complexity should not be manipulated or distorted by politicians; the market is a much better arbiter of how resources are best allocated.

Importantly, the demand for electricity is, for the most part, stable. Although businesses and consumers may use less electricity during a recession, overall demand persists.[36] The global market for electricity is a multi-trillion dollar market that continues to grow.[37]

---

33. *Energy Solutions for America–The Heritage Foundation*, THE LIBRE INITIATIVE, http://www.thelibreinitiative.com/public/energy-solutions-for-america-the-heritage-foundation-373.html (last visited Mar. 28, 2013).

34. Scott Tong, *The Oil Man Who Figured Out Fracking*, MARKETPLACE (Dec. 7, 2012), *available at* http://www.marketplace.org/topics/sustainability/oil-man-who-figured-out-fracking.

35. *Uses in Industry*, NATURALGAS.ORG, http://www.naturalgas.org/overview/uses_industry.asp (last visited Mar. 25, 2012).

36. NORTH AMERICAN ELECTRIC RELIABILITY CORP., 2009 SUMMER RELIABILITY ASSESSMENT 1 (2009), *available at* http://www.nerc.com/files/summer2009.pdf.

37. *See* FATIH BIROL, INT'L ATOMIC ENERGY AGENCY, POWER TO THE PEOPLE: THE WORLD OUTLOOK FOR ELECTRICITY INVESTMENT (2004), *available at* http://www.iaea.org/Publications/Magazines/Bulletin/Bull461/power_to_the_people.html (explaining that world electricity demand is projected to double between 2000 and 2030).

The resource that can provide the most value to the consumer will certainly have its place in it.

C. The Futility of Politicized Energy Independence

Eliminating American dependence on foreign oil—making the United States "energy independent"—is a popular notion that politicians on both sides of the aisle love to invoke. Yet, campaigning for more renewable energy such as wind and solar to replace foreign oil is a non sequitur. Wind and solar energy are used for electricity generation. Since oil generates less than one percent of America's electricity,[38] it is misleading to suggest that wind and solar generation would affect oil consumption.

U.S. electricity is largely supplied by domestic sources, and those energy resources that the United States does import come from a diversity of suppliers, many of which are friendly allies. In 2011, 42 percent of U.S. electricity generation came from coal, 19 percent from nuclear, 25 percent from natural gas, and 13 percent from renewable sources, the majority of which come from hydroelectric power.[39] Most of the coal that the United States does import (only one percent of total consumption) comes from Colombia,[40] and 90 percent of the imported natural gas comes from Canada, with much of the rest coming from Trinidad.[41] Out of the 2,472 billion cubic feet of natural gas consumed in December 2012 in the United States, only 3.7 percent came from net imports.[42] The United States also imports most of its uranium from Canada and Australia.[43] Oil is a different story. The country's three single biggest oil suppliers are Canada, Saudi Arabia, and Mexico.[44]

---

38. U.S. ENERGY INFO. ADMIN., HOW MUCH OF OUR ELECTRICITY IS GENERATED FROM RENEWABLE ENERGY? (2012), *available at* http://www.eia.gov/energy_in_brief/article/renewable_electricity.cfm.

39. *Id.*

40. U.S. ENERGY INFO. ADMIN., COAL EXPLAINED, COAL IMPORTS AND EXPORTS (2012), *available at* http://www.eia.gov/energyexplained/index.cfm?page=coal_imports.

41. *Id.*; U.S. ENERGY INFO. ADMIN., U.S. NATURAL GAS IMPORTS BY COUNTRY (2012), *available at* http://www.eia.gov/dnav/ng/ng_move_impc_s1_m.htm.

42. U.S. ENERGY INFO. ADMIN., U.S. NATURAL GAS: MONTHLY SUPPLY AND DISPOSITION BALANCE (2013), *available at* http://www.eia.gov/dnav/ng/ng_sum_sndm_s1_m.htm.

43. U.S. ENERGY INFO. ADMIN., URANIUM MARKETING ANNUAL REPORT (2012), *available at* http://www.eia.gov/uranium/marketing/.

44. U.S. ENERGY INFO. ADMIN., PETROLEUM & OTHER LIQUIDS: WEEKLY PRELIMINARY CRUDE IMPORTS BY COUNTRY OF ORIGIN (2013), *available at* hhttp://www.eia.gov/dnav/pet/pet_move_wimpc_s1_w.htm.

Nevertheless, energy independence is not an appropriate policy goal. Oil is a global commodity, and whether the United States is a net importer or net exporter has little bearing on insulating Americans from price volatility. For comparison, even though the United States is self-sufficient in food production, domestic prices are affected by supply problems in other parts of the world.[45]

Energy independence makes for a catchy sound-bite, but it should not be the goal of energy policy. The biggest threat to America's reliable and affordable energy comes in the form of domestic government interventions that artificially raise or lower prices and distort market investments through unnecessary regulations, subsidies, preferential tax treatment, and other market-distorting policies.

America's largely market-based energy policies have historically provided the nation with abundant and affordable energy resources.[46] When prices have spiked, government solutions more often than not made things worse. Unfortunately, an upward trajectory of government intervention through regulations, subsidies, mandates, and protections is threatening previous success. Americans will continue to be best served by energy markets that are free, competitive, and open. Ensuring that such energy markets are free, competitive, and open should be the main focus of American energy policy.

D. No Impact on Climate Change

If the United States has a robust, diverse energy supply, why subsidize a number of energy technologies? One ostensible reason is to reduce the nation's carbon footprint. Reducing global warming is much of the motivation behind subsidizing carbon-free sources of energy or establishing a price on greenhouse-gas emissions, either by means of a carbon tax or through a cap-and-trade system that creates a cap on greenhouse-gas emissions and allows emitters to sell permits they accumulate if they are under the cap.[47]

---

45. *See, e.g.*, U.S. DEP'T OF AGRIC., ECON. RESEARCH SERV., GLOBAL AGRICULTURAL SUPPLY AND DEMAND: FACTORS CONTRIBUTING TO THE RECENT INCREASE IN FOOD COMMODITY PRICES 5 (2008), *available at* http://www1.eere.energy.gov/biomass/pdfs/global_agricultural_supply_and_demand.pdf.

46. *See The History of Regulation*, NATURALGAS.ORG, http://www.naturalgas.org/regulation/history.asp (last visited April 9, 2013) (deregulating natural gas and ending federal price controls helped encourage economic development).

47. *What is EPA Doing About Climate Change?*, ENVTL. PROT. AGENCY, http://www.epa.gov/climatechange/EPAactivities.html (last updated Apr. 22, 2013).

However, the problem with discussing climate change begins with the way politicians and the media on both sides of the aisle talk about the issue and sensationalize it to energize and motivate their respective supporters. Arguments that human activity has nothing to do with climate change or that the planet is experiencing catastrophic warming are neither truthful nor useful to the debate.

But not long ago, scientists thought that global *cooling* was a threat to the planet. As recently as 1975, *Newsweek* ran an article titled, "The Cooling World."[48] Some proposals mentioned by climatologists in the *Newsweek* article included covering the polar ice caps with black soot to melt them.[49]

Almost all climatologists and respected scientists in the climate-change community agree that carbon dioxide (CO_2) and other greenhouse gases are warming agents.[50] That agreement, however, does not come close to settling the scientific debate about the magnitude of climate change, the driving forces behind climate change, and the amount of warming projected from increased greenhouse-gas emissions. For instance, Harvard astrophysicist, Sallie Baliunus, and astronomer, Willie Soon, identify solar activity as the driving force behind climate change.[51] Richard Lindzen, professor of meteorology at the Massachusetts Institute of Technology, notes that mainstream climate models fail to take into account naturally occurring cycles such as El Niño, the Pacific decadal oscillation, or the Atlantic multidecadal oscillation.[52]

Nor does this general agreement that greenhouse gases are a warming agent tell us how much increasing greenhouse-gas emissions will contribute to sea-level rise. Even the Intergovernmental Panel on Climate Change's projection of sea-level rise over the next century is

48. Peter Gwynne, *The Cooling World*, NEWSWEEK, Apr. 28, 1975, at 64.

49. *Id.* ("[Scientists] concede that some of the more spectacular solutions proposed, such as melting the arctic ice cap by covering it with black soot or diverting arctic rivers, might create problems far greater than those they solve.")

50. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS: TECHNICAL SUMMARY 21 (Susan Solomon et al. eds., 2007), *available at* http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4_wg1_full_report.pdf.

51. SALLIE BALIUNAS & WILLIE SOON, CLIMATE HISTORY AND THE SUN 11 (2001).

52. Richard S. Lindzen, Op-Ed, *The Climate Science Isn't Settled*, WALL ST. J. (Nov. 30, 2009), *available at* http://online.wsj.com/article/SB10001424052748703939404574567423917025400.html.

a modest seven to twenty-three inches, with the lower end of that projection more likely to occur by the end of the century.[53]

Moreover, universal agreement that CO_2 is a warming agent does not imply that the United States or the entire planet is going to experience more extreme droughts, heat waves, or other natural disasters. University of Alabama climatologist John Christy's recent testimony on this issue emphasizes that climate extremes, like the recent drought, will continue to occur with or without anthropogenic warming.[54]

When discussing CO_2, it is important to first remember that CO_2 is a colorless, odorless gas that does not have direct adverse health effects unless inhaled at extremely high concentrations.[55] In other words, unlike black carbon or soot, it is a misnomer to label CO_2 as a pollutant. Policymakers typically only discuss the social cost of CO_2. They hardly ever discuss whether more CO_2 in the atmosphere could also create a positive externality or whether the benefits from living in a warmer world could outweigh the costs of CO_2 as a negative externality. A plethora of peer-reviewed literature explains that there are benefits from more CO_2 in our atmosphere, such as plant growth, human longevity, seed enrichment, and decreased soil erosion as a result of more robust tree root growth.[56]

If the scientific community unanimously agreed that the Earth is warming at an unsustainable rate, policymakers and climatologists would need to act quickly and thoughtfully together. Yet the current proposed and implemented solutions, whether they involve building more wind turbines with renewable-energy subsidies, biofuel

---

53. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, SUMMARY FOR POLICYMAKERS 13–14 (Susan Solomon et al. eds., 2007), *available at* http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf.

54. *The American Energy Initiative: A Focus on H.R. 6172: Hearing on H.R. 6172 Before the H. Subcomm. on Energy & Power*, 112th Cong. 1 (2012) (statement of John R. Christy, Professor of Atmospheric Science, The University of Alabama in Huntsville), *available at* http://energycommerce.house.gov/sites/republicans.energycommerce.house.gov/files/Hearings/EP/20120920/HHRG-112-IF03-WState-ChristyJ-20120920.pdf.

55. CTR. FOR DISEASE CONTROL & PREVENTION, DOCUMENTATION FOR IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONCENTRATIONS (IDLHS) (1994), *available at* http://www.cdc.gov/niosh/idlh/124389.html.

56. *See, e.g.*, *Enhanced or Impaired?*, CTR. FOR THE STUDY OF CARBON DIOXIDE & GLOBAL CHANGE, http://www.co2science.org/education/reports/health/ch3.php (last visited Feb. 4, 2013) (discussing CO_2's positive effect on food quantity and quality); SCI. & PUB. POLICY INST., THE MANY BENEFITS OF ATMOSPHERIC CO_2 ENRICHMENT (2011), *available at* http://scienceandpublicpolicy.org/images/stories/papers/other/55_benefits_of_co2_pamphlet.pdf (discussing CO_2's positive effect on air pollution, food production, biodiversity, and other issues).

mandates, cap-and-trade systems, or carbon taxes, will have a negligible impact on the climate while imposing certain significant costs on quality of life and the economy.

E. Unilateral Emissions Reductions Fail To Reduce Global Warming

Some countries' unilateral reduction of their greenhouse-gas emissions will do next to nothing to reduce global temperatures. So, whether one believes that the Earth is headed toward climate catastrophe or that the Earth is gradually warming, there is nearly universal agreement that an all-out carbon-cutting policy in the United States would do very little to moderate global warming.[57] Even if the United States were to curb carbon emissions eighty-three percent below 2005 levels by 2050 (what cap-and-trade legislation called for), it would only reduce global temperatures by two-tenths of a degree Celsius by the close of the century.[58] Subsidizing wind production with the PTC and other carbon-free sources of energy would have even less of an effect, as those policies would not be enough to reach the U.S. cap-and-trade emissions target.

However, a common argument for unilateral reduction of greenhouse-gas emissions is that if the United States leads, the rest of the world will follow. Although future CO_2 emissions will likely come overwhelmingly from the developing world, these countries show little appetite for squeezing economic growth for uncertain climate outcomes.[59] Despite actions taken by the Environmental Protection Agency (EPA) to regulate CO_2 emissions in the United States, the developing world has yet to follow suit and it plans for massive expansion of coal consumption.[60] China surpassed the United States as the largest CO_2 emitter in 2006.[61] By 2009 (the most recent year for

---

57. Press Release, U.S. Senate Comm. on Envtl. & Pub. Works, Jackson Confirms EPA Chart Showing No Effect on Climate Without China, India (July 9, 2009), *available at* http://www.epw.senate.gov/public/index.cfm?FuseAction=Minority.PressReleases&ContentRecord_id=564ed42f-802a-23ad-4570-3399477b1393.

58. Chip Knappenberger, *Climate Impacts of Waxman-Markey (Part II)*, MASTER RES. (May 7, 2009), http://www.masterresource.org/2009/05/part-ii-a-climate-analysis-of-the-waxman-markey-climate-bill%e2%80%94what-if-the-world-played-along.

59. Alex Morales & Kim Chipman, *China, EU Comments Show Reduced Scope of UN Climate Talks*, BLOOMBERG (Nov. 28, 2012), http://www.bloomberg.com/news/2012-11-28/china-joins-eu-to-scale-back-outlook-for-un-climate-talks.html.

60. Ailun Yang & Yiyum Cui, *Global Coal Risk Assessment: Data Analysis and Market Research* 7–9 (World Res. Inst., Working Paper, Nov. 2012), *available at* http://pdf.wri.org/global_coal_risk_assessment.pdf.

61. *China Overtakes U.S. in Greenhouse Gas Emissions,* N.Y. TIMES (June 20, 2007), http://www.nytimes.com/2007/06/20/business/worldbusiness/20iht-emit.1.6227564.html?_r=0.

which information is available), China's emissions were forty-five percent higher than America's.[62] Other developing countries are also rapidly increasing their emissions as they develop their economies and expand their power base. According to a recent report from the World Resources Institute, 59 different countries plan to build nearly 1200 coal-fired power plants, totaling over 1.4 million megawatts.[63] China and India alone account for 76 percent of the proposals.[64]

Developing countries not only want access to cheap, reliable electricity, but they also have other, more urgent concerns than global warming. It is simply naïve to assume that these countries will follow the United States' lead and curb economic growth to reduce greenhouse-gas emissions. Demanding CO_2 emissions reductions from developing countries is immoral, and developing countries have much more pressing environmental concerns that should rightly take priority, such as gaining access to clean air and clean drinking water. China has a serious smog problem that is not a result of CO_2 and is now even affecting Japan.[65] Nearly thirty-eight million Indians suffer from a water-borne disease annually.[66] Furthermore, millions of people in these countries are without electricity, and yet the West wants them to curb their energy use or demands that they build expensive, intermittent energy capacity.[67] In July of 2012, India made headlines for the largest blackout in history, which left over 300 million without electricity.[68] Initial reports suggested that the blackout affected over 600 million people but omitted one key fact: many of India's residents never had access to electricity in the first place.[69]

---

62. *See Millennium Development Goals Indicators*, UNITED NATIONS STATISTICS DIV., http://mdgs.un.org/unsd/mdg/SeriesDetail.aspx?srid=749 (last updated July 2, 2012).

63. Yang & Cui, *supra* note 60, at 5.

64. *Id.*

65. *See Suffocating Smog from China Reaches Regions of Japan*, TAIPEI TIMES (Feb. 5, 2013), http://www.taipeitimes.com/News/front/archives/2013/02/05/2003554261 (discussing air pollution's carry-over effect on Japan).

66. INDIRA KHURANA & ROMIT SEN, WATERAID, DRINKING WATER QUALITY IN RURAL INDIA: ISSUES AND APPROACHES 4 (2009), *available at* http://www.wateraid.org/~/media/Publications/drinking-water-quality-rural-india.pdf.

67. *See* DAVID JACOBS ET AL., WORLD FUTURE COUNCIL, UNLEASHING RENEWABLE ENERGY POWER IN DEVELOPING COUNTRIES 5 (2009), *available at* http://www.worldfuturecouncil.org/fileadmin/user_upload/_Media/REPfund_DEC_09.pdf (explaining how difficult it is to get financing for renewable energy technologies in developing countries because of the very small profit margins).

68. Tripti Lahiri, *How Many People Actually Lost Power?*, WALL ST. J. (Aug. 1, 2012, 5:06 PM), http://blogs.wsj.com/indiarealtime/2012/08/01/how-many-people-actually-lost-power-in-india.

69. *Id.*

These countries are not going to restrict their energy use to reduce greenhouse-gas emissions when they are still struggling towards providing the basic amenities of modern life for their people. Nor should they.

F. The Seen and the Unseen Market Distortions

Proponents of the wind PTC only take into account the visible effects of this policy. They highlight the jobs of manufacturers assembling windmills and pouring cement for the platforms.[70] They emphasize the increasing role of wind in America's electricity portfolio which reduces the amount of coal America burns.[71] What proponents routinely ignore is the fact that the billions of dollars provided in subsidies do not fall freely from the sky; the federal government either borrows money from the American public or taxes the American public to pay for the subsidies. Simply put, taxpayer-funded programs do not create jobs; they shift them from one sector of the economy to another. The opportunity costs, or the unseen effects of government spending, are the lost labor and capital extracted from other sectors of the economy to artificially support the politically preferred ones.[72] In this case, the people and components needed to sell wind electricity cannot simultaneously be used to build automobiles, washing machines, or sidewalks. By distorting economic activity, wind subsidies are actually a net drain on the economy.

One common claim touted by wind lobbyists is that wind energy creates more jobs per kilowatt hour than do conventional sources of energy.[73] By that reasoning, we could replace all of the world's mechanized agriculture equipment and give farmers shovels, hoes, and picks. That would certainly create jobs, but it would also significantly reduce productivity. If we can produce more energy with less labor, that frees up human resources to be productive elsewhere in the economy.

French economist Frédéric Bastiat often discussed the seen and unseen effects of decisions in the marketplace. In an 1850 essay, Bastiat wrote:

---

70. *See* AM. WIND ENERGY ASS'N, *supra* note 5 (emphasizing the jobs that are created or saved by the wind PTC).

71. *Wind Works*, SIERRA CLUB, http://www.sierraclub.org/windworks/ (last visited Apr. 9, 2013).

72. *See supra* Part II.

73. *Electricity from the Wind . . . Economic Development for Rural Communities*, NEB. ENERGY Q. (Apr. 2004), http://www.neo.ne.gov/neq_online/april2004/apr2004.01.htm.

> In the department of economy, an act, a habit, an institution, a law, gives birth not only to an effect, but to a series of effects. Of these effects, the first only is immediate; it manifests itself simultaneously with its cause—it is seen. The others unfold in succession—they are not seen: it is well for us, if they are foreseen. Between a good and a bad economist this constitutes the whole difference—the one takes account of the visible effect; the other takes account both of the effects which are seen, and also of those which it is necessary to foresee.[74]

The wind PTC has had both seen and unseen effects on the economy. Unfortunately, too many people have not noticed the unseen effects.

Wind subsidies impose a number of costs on the economy. Not only do the subsidies have direct costs in terms of billions of spent taxpayer dollars,[75] but the PTC has distorting effects on the wholesale electricity market. Setting aside the fact that wind fails to be prevalent when electricity demand is most needed (when was the last time the wind was blowing consistently hard during a heat wave?),[76] wind producers can actually bid to sell their energy for less than what it costs to produce and still earn a profit because the PTC is so generous.[77] In effect, wind producers can bid negatively to supply their power because of the subsidy.

Power producers compete against one another to sell electricity to the grid. When selling electricity to grid operators, wind suppliers can underbid other electricity producers in times of excess supply, pay utilities to take their power, and still collect the $22 per megawatt hour generated from the tax credit.[78] This is a perfect example of rent-seeking, in which the rent is so profitable that it makes more sense for wind producers to lobby for the subsidy rather than attempt to sell their product for earned profit.

---

74. FRÉDÉRIC BASTIAT, *That Which Is Seen, and That Which Is Not Seen*, *in* THE BASTIAT COLLECTION 1 (Ludwig von Mises Inst. ed., 2007), *available at* https://mises.org/books/bastiat1.pdf.

75. *See* J. COMM. ON TAXATION, 112TH CONG., ESTIMATED REVENUE EFFECTS OF THE CHAIRMAN'S MARK AS MODIFIED TO THE PROVISIONS OF THE "FAMILY AND BUSINESS TAX CUT CERTAINTY ACT OF 2012," SCHEDULED FOR MARK UP BY THE SENATE COMMITTEE ON FINANCE ON AUG. 2, 2012, JCX-70-12 (Comm. Print 2012), *available at* http://www.finance.senate.gov/imo/media/doc/JCX.pdf.

76. *See* Jonathan A. Lesser, *Wind Intermittency and the Production Tax Credit: A High Cost Subsidy for Low Value Power*, CONT'L ECON. at EX-1 (Oct. 2012), http://www.continentalecon.com/publications/cebp/Lesser_PTC_Report_Final_October-2012.pdf ("In all three regions, over 84% of the installed wind generation infrastructure fails to produce electricity when electric demand is greatest.").

77. *Id.* at 2.

78. *Id.*

Although wind companies selling their power more cheaply to the grid sounds attractive to electricity consumers, these sales have short- and long-term adverse implications on the electricity market. In the short run, integrating an intermittent, low-value source, such as wind, into the power grid in place of a more reliable energy source makes life difficult for grid operators who are constantly trying to balance supply and demand.[79] To compensate for the irregularity and uncertainty of wind-powered electricity, wholesale operators must increase the amount of readily available backup power from conventional sources.[80] The operational costs are spread among the ratepayers.[81]

If wind generation were competitive in the marketplace without subsidies, then the market would adjust to wind energy's particular operating conditions. Wind's intermittency and the fact that more wind production may displace other types of electricity generation are not reasons to prevent the construction of wind turbines. The cause for concern is instead the government's intervention into electricity generation, which inevitably causes market distortions. If, after accounting for all the costs (such as backup generation and the transmission lines necessary to bring wind energy from remote locations to where the power is needed), wind is price competitive, then it will have its place in the electricity sector.

A good or service belongs in the marketplace when the value of the output is greater than the value of the input and when the output satisfies a consumer need. Subsidies reverse this by artificially reducing the costs of inputs to make the output value of wind more competitive, thus disguising the real cost and value of wind. If ratepayers value and demand wind energy, and if enough ratepayers are willing to pay a premium for that electricity, then the market will respond and provide it. Or, if the cost of wind technology decreases and the price of conventional energy increases, more wind electricity may enter the energy sector. The signals of profits and losses determine what adds economic value and should determine the extent of wind's role in our country's energy mix.

---

79. *See id.* at Ex-2, Ex-3 (explaining how wind blows the least when electricity is needed most in the summer and how the most efficient energy resources produce electricity when they are called on).

80. *Id.* at 18–19.

81. *Id.*

IV. THE PATH FORWARD TO REMOVING MARKET DISTORTIONS

The debate over the wind PTC extension provides a timely look into the economically destructive nature of energy subsidies. Energy subsidies extend far beyond the wind PTC. Coal, natural gas, oil, and renewable energy sources all enjoy preferential treatment at the taxpayer's expense. Congress should make it a priority to prevent any new subsidization of energy sources and technologies. Congress should also peel back the subsidies that are currently in place. Forcing sunsets on preferential tax credits and offsetting the tax increases with lower tax rates for all businesses (such as a lower corporate income tax rate) would improve the tax code and lead to better energy policy.

A. Prevent and Remove Direct Spending

Direct energy expenditures in the United States have grown, largely because of the over $40 billion awarded to the Department of Energy (DOE) from the ARRA, also known as the stimulus bill.[82] Of that amount, $16.8 billion went to the Office of Energy Efficiency and Renewable Energy.[83] Additionally, the DOE spends billions of dollars to fund applied-research programs through its yearly budget process. Another DOE program that the Energy Information Administration (EIA) lists as a direct expenditure is the Low Income Home Energy Assistance Program (LIHEAP).[84] To prevent more direct government market distortions in the energy sector and to thus prevent wasting taxpayer dollars, Congress should prohibit funding for new subsidies, eliminate government programs that commercialize technologies, and eliminate federal programs for low-income energy assistance.

1. Prohibit any new funding

Congress should ensure that no taxpayer dollars go directly to energy production, storage, efficiency, infrastructure, or transportation for non-government consumers. While these types of projects may be important, they are better financed through the

82. *Agency Profile: Department of Energy*, RECOVERY.GOV, http://www.recovery.gov/Transparency/RecoveryData/Pages/AgencyProfile.aspx?agency_code=89 (last visited Mar. 25, 2013).

83. *American Recovery and Reinvestment Act Allots $16.8 Billion for EERE*, U.S. DEP'T OF ENERGY (Feb. 17, 2009), http://apps1.eere.energy.gov/news/daily.cfm/hp_news_id=156.

84. U.S. ENERGY INFO. ADMIN., DIRECT FEDERAL FINANCIAL INTERVENTIONS AND SUBSIDIES IN ENERGY IN FISCAL YEAR 2010 25–26 (2011), *available at* http://www.eia.gov/analysis/requests/subsidy/pdf/subsidy.pdf.

private sector, which is better positioned to make efficient investments that meet consumers' needs.

2. Eliminate government programs to commercialize technologies

The DOE has spent billions of research dollars to reduce CO_2. Research dollars have gone towards energy-efficiency technologies, renewable energy sources, carbon capture and sequestration, clean-coal technologies, nuclear energy, and alternative-energy vehicles.[85] All of these energy sources and technologies are available today, but they are not economical, whether due to burdensome regulations or simply because they are still prohibitively expensive. It is not the government's role to force these technologies into the marketplace; thus, Congress should eliminate all DOE-funded commercial activities and focus on removing the onerous regulatory barriers that prevent energy technologies from reaching the market.[86] Congress should focus on creating a more efficient system in which the private sector can use government resources, such as national laboratories. Congress should also create a structure that ensures government research meets national objectives, and is accessible to the private sector for application to economically viable endeavors.

3. Eliminate LIHEAP

LIHEAP is meant to help low-income households with energy costs, energy crises, and home weatherization,[87] but it has rapidly expanded, is duplicative, and has been riddled with fraud and abuse. A 2010 Government Accountability Office (GAO) study found that the Department of Health and Human Services distributed funds to thousands of deceased and incarcerated people and claimed that LIHEAP application processors awarded funds to GAO officials using fake addresses and fake energy bills.[88] Eliminating LIHEAP certainly does not mean that there will be no money to help low-income households pay for energy costs. The federal government runs

85. Nicolas Loris, *Department of Energy Budget Cuts: Time To End the Hidden Green Stimulus*, THE HERITAGE FOUND. (Mar. 23, 2012), http://www.heritage.org/research/reports/2012/03/department-of-energy-budget-cuts-time-to-end-the-hidden-green-stimulus.

86. *Id.*

87. *About LIHEAP*, OFFICE OF CMTY. SERV., U.S. DEPT. OF HEALTH & HUMAN SERV., http://www.acf.hhs.gov/programs/ocs/programs/liheap/about (last visited April 9, 2013).

88. U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-10-621, LOW-INCOME HOME ENERGY ASSISTANCE PROGRAM: GREATER FRAUD PREVENTION CONTROLS ARE NEEDED 5–6 (2010), *available at* http://www.gao.gov/new.items/d10621.pdf.

more than seventy means-tested aid programs that provide cash for food, housing, medical care, and social services.[89] Total federal and state spending on means-tested assistance to low-income persons exceeded $900 billion in 2011.[90] Furthermore, cash, food, housing, and energy aid are highly fungible when they reach the household level, so households are in the best position to determine which good they need most. Congress should eliminate LIHEAP funding entirely.

B. Tax Credits

By uniquely favoring one industry, special tax treatment can serve the same purpose as a subsidy, and it has been an increasingly attractive way for the government to award preferential treatment to certain energy industries. The number of energy tax programs expanded from eleven in 1999 to thirty-eight in President George W. Bush's 2007 budget.[91] According to the EIA, tax expenditures comprise almost two-thirds of electricity subsidies.[92] Ideally, Congress should immediately remove all distortionary energy tax policy—meaning any tax policy that singles out an industry—and offset those repeals with a broad tax cut. In order to wean industries off preferential treatment and to not pull the rug out from companies that built their business around the expectation of receiving a tax credit, Congress should create a three-year window for expiration of all energy tax expenditures. This should not include broadly available tax deductions that apply across multiple sectors.[93] Congress should not provide new targeted tax credits, should not extend sun-setting credits, should shorten the timeframe for which all targeted tax

89. Katherine Bradley & Robert Rector, *Confronting the Unsustainable Growth of Welfare Entitlements: Principles of Reform and Next Steps*, THE HERITAGE FOUND. (June 24, 2010), http://www.heritage.org/research/reports/2010/06/confronting-the-unsustainable-growth-of-welfare-entitlements-principles-of-reform-and-the-next-steps.

90. *Id.*

91. MOLLY SHERLOCK, CONG. RESEARCH SERV., R41227, ENERGY TAX POLICY: HISTORICAL PERSPECTIVES ON AND CURRENT STATUS OF ENERGY TAX EXPENDITURES 8–9 (2011).

92. ENERGY INFO. ADMIN., FEDERAL FINANCIAL INTERVENTIONS AND SUBSIDIES IN ENERGY MARKETS 2007 xi (2008), *available at* http://www.eia.doe.gov/oiaf/servicerpt/subsidy2/pdf/subsidy08.pdf.

93. For instance, some policymakers want to remove the manufacturer's tax deduction for the oil and gas industry under section 199 of the Internal Revenue Code, which applies to all domestic manufacturers, including windmill and solar-panel manufacturers. For more information, see Nicolas Loris & Curtis Dubay, *What's an Oil Subsidy*, THE HERITAGE FOUND. (May 12, 2011), http://www.heritage.org/research/reports/2011/05/whats-an-oil-subsidy.

credits are available, and should broadly lower the corporate income tax rate to prevent a tax increase.

1. No new tax credits

Congress should not implement any new tax credits for energy production, energy infrastructure, transportation (production and consumption), or energy-efficiency initiatives. This will prevent the federal government from continuing to pick winners and losers, and it will also ensure that Congress cannot use the tax code to direct investments.

2. Force sun-setting tax credits to sunset

One of the larger problems with targeted tax credits is that upon expiration, industry groups will lobby members of Congress to expand the credits for another year, or for multiple years. Congress should specify that any tax credit set to expire on December 31, 2013 cannot be extended and should be accompanied with an offsetting tax reduction.

3. Expedite sunsetting

Congress should create a three-year window for all other tax credits that extend over multiple years or do not expire, and it should reduce the write-off percentage by one-third after each year. Any tax credit tied to production should follow the same schedule. This time frame will give industries a predictable window to lower costs and adjust to competition without federal aid. Congress should then reduce other taxes, such as the corporate income tax, by the amount of revenue that expediting the elimination of these unsound policies would raise.

C. Make Immediate Expensing Available for Everyone

Another way in which certain industries benefit over others relates to how companies can expense capital costs. For instance, oil and gas companies receive more generous treatment than other industries through expensing of intangible drilling costs.[94] A simple solution is to allow all companies, including oil and gas companies, to be able to expense their full capital costs immediately.

94. *See* INTERNAL REVENUE SERV., BUSINESS EXPENSES FOR USE IN PREPARING 2012 RETURNS (2013), *available at* http://www.irs.gov/publications/p535/ch07.html#en_US_2012_publink1000208883 (outlining deduction procedures for intangible drilling costs).

Immediate expensing allows companies to deduct the cost of capital purchases at the time they occur rather than deducting the costs over many years based on cumbersome depreciation schedules.[95] For instance, the Section 179 deduction in the Internal Revenue Code allows for immediate expensing of eligible property.[96] Immediate expensing for all new plant and equipment costs—for any industry or type of equipment—would allow newer equipment to come online faster, which would improve energy efficiency and overall economic efficiency.

D. Prevent and Remove Other Market Distortions

The government distorts the energy market in several other ways—through loan guarantees, insurance programs, mandates, tariffs on imported energy, and energy sales at below-market costs. To eliminate these distortions, Congress should remove loan guarantee programs, privatize public power administrations, and restructure insurance for energy projects.

1. Prohibit any new loan guarantees or other capital subsidy programs

The Energy Policy Act of 2005 (EPAct 2005) included loan guarantees for nuclear power, and section 1705 of the ARRA amended EPAct to include loans for renewable energy, biofuel projects, and electric power transmission systems that began construction before October 1, 2011.[97] Congress appropriated $6 billion for the credit subsidy costs of the section 1705 loans.[98] A new capital subsidy program gaining some traction in Congress is to create a Clean Energy Deployment Administration within DOE, which would act as a "green bank," providing loans, loan guarantees, and clean-energy-backed bonds to carbon-free technologies that

95. NAT'L FED'N OF INDEP. BUS., SMALL BUSINESS TAX RATES AND TAX COMPLEXITY (2013), *available at* http://www.nfib.com/Portals/0/PDF/AllUsers/research/cribsheets/small-business-tax-rates-cribsheet.pdf.

96. *See* INTERNAL REVENUE SERV., ELECTING THE SECTION 179 DEDUCTION (2013), *available at* http://www.irs.gov/publications/p946/ch02.html#en_US_2012_publink1000107394 (listing eligible property for deduction).

97. Energy Policy Act of 2005, Pub. L. No. 109–58, 119 Stat. 594 (codified in scattered sections of 42 U.S.C.).

98. U.S. DEP'T OF ENERGY, INNOVATIVE TECHNOLOGY LOAN PROGRAM 2 (2011), *available at* http://energy.gov/sites/prod/files/edg/recovery/documents/Innovative_Technology_Loan_Guarantee_Program.pdf.

commercial lenders believe are too risky.[99] But the DOE has no role to play as a banker.[100] By subsidizing a portion of the actual cost of a project through a loan guarantee, the government is allocating resources away from more-valued uses to less-valued uses. In essence, these guarantees and loans direct labor and capital away from more competitive projects. This reduces the incentive for the energy investor or business to manage risk, innovate, and to increase efficiency, and it crowds out other innovative energy projects that do not receive loans. Venture capitalists are perfectly capable of making these investments and reaping the rewards from risk or suffering the losses from bad investments. Whether a company that receives a loan guarantee is profitable or insolvent, the program is a failure of a policy. No loan guarantee program should be expanded, nor should the government implement any new capital subsidy programs.

2. Restructure public power

Federal utilities, known as Power Marketing Administrations (PMAs), were set up to provide cheap electricity to rural areas.[101] PMAs can sell electricity at below-market rates because of favorable financing terms—they receive federal tax exemptions and receive loans at below-market interest rates.[102] Construction, rehabilitation, operation, and maintenance of PMAs are financed through the main DOE budget, offset collections, alternative financing, and a reimbursable agreement with the Bureau of Reclamation.[103] Furthermore, rural electric cooperatives (RECs) are private organizations, in many cases non-profits, that provide about twelve percent of the nation's electricity sales.[104] RECs receive special tax

99. Nicolas Loris & Jack Spencer, *The Department of Energy Should Not Be the Green Banker*, THE HERITAGE FOUND. (Oct. 6, 2011), http://www.heritage.org/research/reports/2011/10/the-department-of-energy-should-not-be-the-green-banker.

100. *Id.*

101. The DOE Power Marketing Administration is made up of the Southeastern Power Administration, the Southwestern Power Administration, the Western Area Power Administration, and Bonneville Power Administration. Department of Energy Offices. *See Offices*, DEP'T OF ENERGY, http://energy.gov/offices (last visited May 6, 2013) (listing the offices of members of the Power Marketing Administration).

102. U.S. ENERGY INFO. ADMIN., FEDERAL ENERGY MARKET INTERVENTIONS 1999: ENERGY TRANSFORMATION AND END USE 19, 22 (2000), *available at* http://www.eia.gov/oiaf/servicerpt/subsidy1/pdf/sroiaf%282000%2902.pdf.

103. *Id.* at 20.

104. NAT'L RURAL ELEC. COOP. ASS'N, CO-OP FACTS & FIGURES (2012), *available at* http://www.nreca.coop/members/Co-opFacts/Documents/AnnualMeetingFactSheet.pdf.

exemptions and low-interest loans from the government.[105] Congress should remove privileges for federal utilities, municipal power companies, and electricity cooperatives and, ultimately, sell off PMAs to private buyers.

3. Restructure insurance and risk mitigation

Several government programs offer liability-insurance schemes for specific industries. While some of these programs may have been justifiable in the past to protect private entities that engaged in high-risk operations in support of vital national interests, they now often serve to subsidize insurance costs for private, profit-seeking industries.[106] Two examples are the $75 million liability cap for offshore oil and gas operations and the Price-Anderson Act of 1957, which provides a liability structure for the nuclear industry that extends through 2025.[107] Given the high probability of at least some frivolous lawsuits in pursuit of unlimited damages, removing the cap entirely without implementing a new system would subject covered industries to punitively high costs. Instead, Congress should reform liability caps, including reforming the Price-Anderson Act when it expires, in a way that accurately assigns risk and liability to those engaged in covered activities.[108]

4. Eliminate production mandates

When the federal tax credit for blending ethanol into gasoline and the fifty-four-cent-per-gallon tariff on imported ethanol expired, a diverse group of fiscal watchdogs, environmentalists, and free-trade proponents all hailed this as a major victory.[109] Though this was a move in the right direction, the real burden on consumers and the environment is that producers will continue to blend ethanol into

105. U.S. ENERGY INFO. ADMIN., *supra* note 84, at 22, 25.

106. Anthony Heyes, *Determining the Price of Price-Anderson*, 25 REGULATION 26, 30 (Winter 2002–03), *available at* http://www.cato.org/sites/cato.org/files/serials/files/regulation/2002/10/v25n4-8.pdf.

107. *See* Oil Pollution Act of 1990, 33 U.S.C. § 2704 (2006); Atomic Energy Act of 1954, 42 U.S.C. § 2210 (2006).

108. For a comprehensive solution to offshore oil-spill liability, see Nicolas Loris, Jack Spencer & James Carafano, *Oil Spill Liability: A Plan for Reform*, THE HERITAGE FOUND. (Aug. 2, 2010), http://www.heritage.org/research/reports/2010/08/oil-spill-liability-a-plan-for-reform.

109. Nicolas Loris, *Two Cheers for Ethanol Subsidies Expiring—But Costly Mandate Remains*, THE HERITAGE FOUND. (Jan. 17, 2012), http://www.heritage.org/research/reports/2012/01/ethanol-subsidies-expiring-but-the-costly-mandate-remains.

gasoline—because they are federally required to do so. EPAct 2005 contained the first-ever requirement that renewable fuels be mixed into the gasoline supply.[110]

The 2007 Energy Independence and Security Act (EISA) substantially increased the mandated amount of renewable fuel required to be blended into transportation fuel to 36 billion gallons by 2022. EISA mandated that 250 million gallons of cellulosic ethanol be blended into gasoline in 2011 and 500 million gallons be blended in 2012.[111] Thus far, zero gallons have been produced, because no companies have been able to produce commercially viable cellulosic ethanol.[112] As a result, refiners had to pay more than $6 million in waiver credits or surcharges to comply with the EPA's minimum volume requirements.[113] Undoubtedly, refiners then pass these costs to the consumers. The EPA ratcheted down its goal for cellulosic biofuel production in 2012 to 8.65 million gallons—less than 2 percent of the original goal.[114] The fact that cellulosic ethanol production is nowhere near providing industrial-scale quantities of fuel demonstrates the government's inability to determine what is commercially viable and beneficial for consumers.

V. THE CURIOUS TASK

Austrian economist Friedrich Hayek wrote in *The Fatal Conceit* that "[t]he curious task of economics is to demonstrate to men how little they really know about what they imagine they can design."[115] For far too long, politicians have unsuccessfully attempted to demonstrate their ability to design and control the energy economy. The direct consequences, the unintended consequences, and the harmful effects on taxpayers, consumers, and the economy broadly

---

110. *See* Energy Policy Act of 2005, Pub. L. No. 109–58, 119 Stat. 594 (codified in scattered sections of 42 U.S.C.).

111. Energy Independence and Security Act of 2007, Pub. L. No. 110–140, 121 Stat. 1492 (codified in scattered sections of 42 U.S.C.).

112. Matthew Wald, *A Fine for Not Using a Biofuel That Doesn't Exist,* N.Y. TIMES (Jan. 9, 2012), http://www.nytimes.com/2012/01/10/business/energy-environment/companies-face-fines-for-not-using-unavailable-biofuel.html?_r=0.

113. *Fuels and Fuel Additives 2012 RFS2 Data*, ENVTL. PROT. AGENCY, http://www.epa.gov/otaq/fuels/rfsdata/2012emts.htm (last updated Apr. 7, 2013); Jenny Mandel, *Refiners Protest EPA's "Ridiculous" Cellulosic Targets*, GREENWIRE (June 22, 2011), http://www.eenews.net/public/Greenwire/2011/06/22/5.

114. Regulation of Fuels and Fuel Additives: 2012 Renewable Fuel Standards, 77 Fed. Reg. 1320, 1320–1358 (Jan. 9, 2012) (to be codified at 40 C.F.R. pt. 80).

115. FRIEDRICH HAYEK, *The Fatal Conceit, in* THE COLLECTED WORKS OF F.A. HAYEK 76 (W.W. Bartley III ed., 1988).

should serve as a wake-up call to free the market from distortions created by privileged treatment from the government. The discussion over the wind PTC extension provides valuable context to the larger energy-subsidy debate, and the same logic applied in this Article applies not only to the energy sector but to most sectors of the American economy. The task of preventing and removing subsidies from the energy economy is extremely difficult, but it is necessary.

Pulse


Wind Farms: The Worst Idea Since Cash for...
Jamin Hübner


There's Only One Guaranteed Way to Be Mor...
Jeff Haden


It's OK If You Don't
James Altucher


How Successful Entrepreneurs Stay Calm
Brian de Haaff


How to Delight Any Audience
Bruce Kasanoff

Why Big Data Matters To Every Business
Bernard Marr


The World's Super-Wealthy in 5 Stats
Ian Bremmer


3 Things You Should Never Say to Your Boss
Brian de Haaff


That Sound You Hear is the Comcast Deal Collapsing:...
John C Abell


Step One: Read The Job Brief
James Caan CBE


To Succeed, Don't Just Plan —Plan Right
Daniel Burrus

Jamin Hübner
Director of Institutional Effectiveness at John Witherspoon College

Wind Farms: The Worst Idea Since Cash for Clunkers

Apr 21, 2015 | 299 0 0

Remember "cash for clunkers"? That 2009 government program that spent 6 billion dollars to save 1 billion? Just imagine walking up to somebody and saying, "hey, I want to save some money, so I'll give you six dollars if you give me one dollar back." Genius! Leave it to none other than the US Congress to devise (and enact!) such brilliant plans.

But there are dozens of government programs like these - all of them failures. The reason why is easy to understand: the government (whether federal, state, or otherwise) has no money of its own. It can only take from others and "give" some of it back. A full return is impossible since this process of organized theft costs money itself. Politicians need to get paid, as well as IRS workers, police, prison guards, and whatever buildings and processes are needed to keep the theft going. *The end result is a net loss* - regardless of how many temporary "jobs" were created in the moment.

This is one of the many reasons why every single country on the World Debt Clock

every one. Thus, communist and socialist countries are the quickest to decline and become poor, while democracies take a bit longer because more property lay in the hands of private individuals. Sometimes the progress of the private sector can even outpace the damage being done by the government (as with the US immediately following WWII). But in any case, the general direction for the government and, to whatever extent, its related society and economy that is controlled by the government, is (all things considered and given adequate time) *down.* Governments cannot pull a rabbit out of a hat.

But bad magic shows come at a high cost. Every person in each of these debt-ridden countries is further enslaved by such debt, and they feel the ongoing impact of this debt every time they pay higher taxes each Spring, pay higher inflated prices at the grocery store, lose their job, can't find a new one, etc. Indeed, despite popular belief, the government has no "magic" to do things that we (the people) can't do ourselves; instead, whatever the government "produces" comes at a greater cost, so the end result is wide-spread over-consumption - a large scale case of eliminating thirst by drinking salt water.

It may surprise you, but wind farms is another failed government program that continues to generate a loss and chug seawater. For many years, it wasn't always this clear, at least to me.

I used to think wind farms were about generating electricity...until I realized:

1. Almost every wind farm puts electricity into an already electricity-rich area. Few, if any, wind farms in America brings electricity to an area that does not already have it. That's because it is too much work and money to build an entire electrical grid from the ground up. Wealth is therefore not created; standards of living did not rise in the local area of wind farms (in fact, living standards *decreased*; see below). At best, electricity from wind farms is "supplemental."

2. Every wind farm is subsidized by the government precisely because they are naturally unprofitable. Wind farms have to be *paid* just to keep going. This also means that people - free and uncoerced and unbribed - obviously do not want wind farms, because if they did, they would go ahead to build and use such turbines on their own. How much, you ask? Billions...

> *"Over the past seven years, the PTC has cost taxpayers $7.3 billion. It is expected to pay out $2.4 billion more in 2015 alone." - Tim Philips, Wall Street Journal*

3. Every wind farm functions as a tax deduction for the wealthy, and that is the main reason they are built in the first place. Nobody says it better than Warren Buffet, the owner of a 2 billion dollar wind farm in Iowa:

> *"I will do anything that is basically covered by the law to reduce Berkshire's tax rate. For example, on wind energy, we get a tax credit if we build a lot of wind farms. That's the only reason to build them. They don't make sense without the tax credit."*

credit," (PTC) the whole project would be too ugly for anyone to be seriously involved. But because of crony-capitalism and the bribes our Congressional "leaders" accept, the wealthier get wealthier (such PTC's are only available for those entities that accumulate income in the hundreds of thousands of dollars) - all at the expense of the masses. **Wind farms are ultimately built to offset taxes and put "federal" money into the pockets of politicians and corporate investors. They have virtually nothing to do with electricity** (but this narrative is a great cover, and appears to work well in public perception).

Proof of this is that wind farm production *nearly stops* every time the wind energy production credit gets suspended or canceled by Congress. Even those who make parts of turbines unwittingly borrow from the Austrian economists by calling this stop-go of production a mini "boom bust cycle"! Perhaps we should take seriously the advice of one Washington Times article on the subject:

> *"Let the [wind] industry rise, fall or spin its rotors based on its own merits, without the crony capitalism government giveaways." - Ernest Istook, Washington Times*

I use to think wind farms were "green energy"...until I realized:

Wind energy is the most non-green green energy one could possibly imagine! Where to begin...

1. Hundreds of thousands of birds die each year from wind turbines, and that number only continues to grow.

2. Even more bats die each year from wind turbines, and it is arguable that this is more significant ecologically. (If you thought the mosquitoes were bad on Minnesota farms ten years ago, just wait...)

3. At 450 to 500ft tall across miles of land, wind farms are a pilot's nightmare (plenty of crashes have already been documented, and they will increase since the size of wind turbines increases with each updated generation of technology). Crop dusters (whether using evil or safe chemicals) refuse to even service surrounding fields, thus decreasing property values and complicating agricultural planning and production.

4. Wind turbines are made of heavy gauge metal and concrete, all of which are transported across the nation with the heaviest gas-guzzlers of machinery. While not as bad as Al Gore's private jet, the carbon footprint is obviously anything but "green."

5. More true for large turbines (>1 megawatt), local soils are depleted/disrupted because of underground vibrations, audible and inaudible low-frequency noise ("infrasound"), seismic waves, and electromagnetic radiation from underground power cables and their irritation towards earthworms, spiders, snakes, snails, and other local organisms. Seismic waves alone are detectable from over 20km. The ecological impact of wind farms is wind energy's greatest kept secret (who is going

don't like wind farms any more than people do.

6. Wind energy cannot be stored (e.g., batteries), nor can they operate at all wind speeds, nor (obviously) do they function when it is not windy, and as such cannot be used/manipulated like other energies to operate efficiently. To put it briefly, there are very, very strict logistics involved, and there is no overcoming many of these because of the nature of wind energy.

7. Chances are, there will be *no incentive to remove* the massive turbines once the temporary government funds shrivel up. It's not hard to understand that massive steel towers rusting and deteriorating in agricultural fields over decades, possibly centuries, are not healthy for the nearby environment.

I used to think wind farms supported "local" energy...until I realized:

1. A substantial percentage of wind farms are owned by overseas investors/corporations (nobody knows exactly how many; in my own research, it could be the majority). This is not evident until the initial developers literally "sell the farm" after having built it. By then, if you (as a land owner) sold your wind rights to the developer, it's too late to change your mind, and whatever happens over the next half-century of your contract will simply happen. (So much for helping your local community!)

2. Wind turbines are typically not built by local construction workers; and as noted above, materials are trucked across the country to their desired location, rarely originating anywhere remotely close to the wind farm.

3. Because of noise, adverse health effects (see below), visual pollution (bright red lights at night and massive shadows during the evening, especially during the fall), and all other related liabilities (e.g., 30 and 65-year wind-right contracts - which are often not contingent on the temporary subsidies that keep them alive, nor inflation adjusted), properties within 1 mile of a standard 3 megawatt wind tower can lose anywhere from 20 to 80% of their value overnight. Further, for the same reasons, the desire to live in wind-farm rich communities is low; people will simply move away from wind turbines and into the cities if necessary. Living among or near a wind farm is simply not preferable. (Realtors and real estate organizations are beginning to consider requiring putting "near wind turbine" on property disclosures. Hopefully such real estate agencies will wake up on this one, because it is a whole lot more serious than "encroaching tree branches"!) *The best way to depreciate your land is to build a wind farm on and around it.*

4. Small communities are *divided,* not united, over wind farm developing projects. The local, rural communities are at war with each other because of wind farms. One only has to read the editorials of a local newspaper where a wind farm is being developed (see for example, the activity of Prevailing Winds LLC in Bon Homme County, South Dakota, here; I've personally talked with nearly all of the authors of these editorials, since it is my hometown). Farmers and locals, young and old, voice their dissent while other farmers, school boards and other locals voice their support - all in a fight for federal funds, easy money, or just a peaceful way of life. Along the

their 30 years contracts were, and how their "partners" turned out to be snake-oil salesman offering contracts that no lawyer in the country would ever, *ever* recommend signing.

The same is true for other countries. Do a simple google web or image search of "wind farm protest," and you'll get the idea.

I used to think wind farms would be nice to listen to at night and help a person fall asleep...until I realized:

1. Wind turbines produce low frequency noise and vibrations that leave (*many*, but not *all*) people as far as 2 miles away with headaches, dizziness, lack of sleep, and nausea. I wish this was an exaggeration, but it already has several clinical and mainstream labels: "sick building syndrome," "wind turbine syndrom," "vibroacoustic disease," etc. In addition to numerous peer review studies and documentaries (see bottom of this article), my own conversations with real people verify this experience with remarkable clarity. (Of course, common sense tells a person as much; I don't enjoy breathing under water, I don't enjoy walking outside in winter without clothes on, and I don't enjoy living near a dozen 450 ft wind turbines. Why is this so surprising?)

The following is a private email from a Nebraska physician I recently read, which addresses the *audible* noise:

> *"It took me about 2 years to adjust to the noise. Personal opinion, but I think the setback for a 3 MW tower should be close to a mile...Closest tower to our house is 5/8 mile, and when wind direction is right with high humidity, we can hear the wosh noise with windows closed and the TV on."*

I suppose I could say, "Sorry Dr., your ears are fooling you. There is no noise - the government tells me so." But, I don't have any good reason to suspect this person is lying. In fact, I know he's telling the truth - because I've stood by 2.5 and 3MW turbines myself. (But who knows, maybe I should trust the feds instead of my own ears?)

Regarding the inaudible noise, consider the publication *Wind Turbine Syndrom*, a report written by a Johns Hopkins Medical school physician and Princeton biologist, Nina Pierpont. The back cover endorsement(s) indicate the nature of the study:

> *"Dr. Pierpont has written a superb and powerful book. Truly first-rate in its presentation of hard data, and with remarkable clarity. I devoutly hope that her findings, pinned as they are to unassailable research and rigorously peer-reviewed by ranking scientists, come to the attention of movers and shakers who can broaden the research base and shape the politics of dealing with Wind Turbine Syndrom." - Jack Goellner, Director Emeritus, The Johns Hopkins University Press*

Thus, "In 2011, a doctor at Harvard Medical School diagnosed Hobart with wind turbine syndrome, which is not recognized by the Centers for Disease Control and

As expected, critics of wind criticism point to this particular book's self-published status and anecdotal evidence, dismissing it as unreliable. Entire MIT studies have been conducted with the ultimate goal of undermining all claims of negative effects of nearby wind turbines (aka, don't pay attention to the man behind the curtain!).

Yet, John Etherington, a Thomas Huxley Medalist at the Royal College of Science and a former co-editor of the *International Journal of Ecology,* comes to the same basic conclusions about the negative effects of wind farms in *The Wind Farm Scam*. Countless other publications could be listed on this particular issue (for two articles with substantial bibliographical information, especially as it relates to the medical field and the harmful health effects of wind farms, click here). This concern has grown to epic proportions so that just a few days ago, even a Republican candidate for the US Presidency announced that he wants to spend $250,000 just to study wind turbine syndrome in Wisconsin.

The most recent study from February 2015 (from the Australian National Health and Medical Research Council) noted the following regarding sleep:

> *The association of wind farm noise with self-reported sleep quality was assessed in nine studies.7-11,13-16,19,21 Eight studies reported poorer sleep (mostly disturbed sleep and poor sleep quality) among people exposed to higher estimated levels of wind farm noise7,9,10,13,19 or living closer to wind farms.8,14-16,21 One of these studies asked participants whether they slept better when they were away from wind farms and most participants said they did sleep better.16*

2. Wind turbines stand at 450-500 ft tall with bright flashing red lights to prevent air-collisions. However, these lights - *designed precisely so that they cannot be ignored* - can be seen from the ground as well - and for over 20 miles away. For those within a few miles of the farms, it is nearly impossible to escape the red glow reflected on buildings and even surrounding window shades from the inside of rooms. Is this a peaceful, "natural" environment? No, it is visual pollution at its best.

Worse, are the massive shadows cast during the evening fall sun - stretching over miles. A delightful flicker during evening games on the lawn - and during every supper indoors, if you care to have and use windows! (Who doesn't like to cook, eat, nap, and work in the home office to the rhythm of a slow strobe light?)

Yes, there are a handful of locals who are not bothered by the lights, the sound, the vibrations, the shadows, etc. That's fine; if no person's rights are violated, then there is no problem. The problem is when other people's rights *are* violated.

Conclusion

Wind towers represent a classic case of the infringement of private property rights. For whatever substantially takes away from my ability to enjoy my own property, there is grounds for some kind of legal action. As noted by Surpreme Court Justice Andrew Napolitano Andrew Napolitano

preventing you from blaring extraordinarily loud music at midnight, or at least requiring you to pay 'damages' to your neighbors for doing so? Certainly, by playing obnoxious music, you are diminishing your neighbors' natural right to the use and enjoyment of their property. And over time, if you were habitually noisy, then most likely would decrease the market value of their property. Thus, although the government could not criminalize this kind of expression, it would be more than justified in making it actionable, or in other words, the basis for lawsuit." - Andrew Napolitano, It's Dangerous to be Right When the Government is Wrong, 48

For more documentation, see National Wind-Watch and The Society for Wind Vigilance. For interesting video documentaries about the development of wind farms and health concerns, see here (Canada), here, and here.

(Cover image credit to: https://againstlakelandturbines.wordpress.com/)

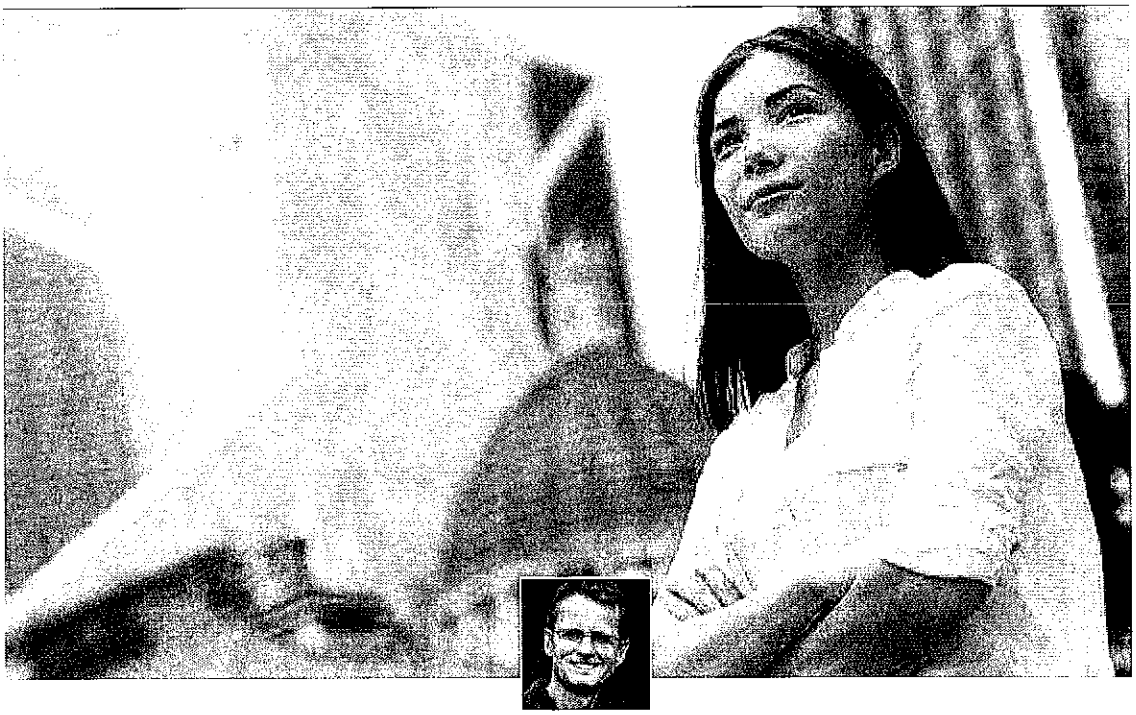
wind power | wind energy | wind turbines

Written by

Jamin Hübner
2 posts

Follow

Be the first to comment and start the conversation!



Jeff Haden

FROM OTHER COUNTRIES

Europe's Green Energy Suicide

By Rael Jean Isaac

As austerity bites into European living standards, sparking revolt at the polls, "growth" has become the politician's mantra. But to be competitive, European countries require a secure, plentiful and competitively priced energy supply. Unless Europe radically rethinks its obsession with carbon-dioxide emissions and the anti-fossil fuel energy policies that flow from it, growth is likely to remain elusive.

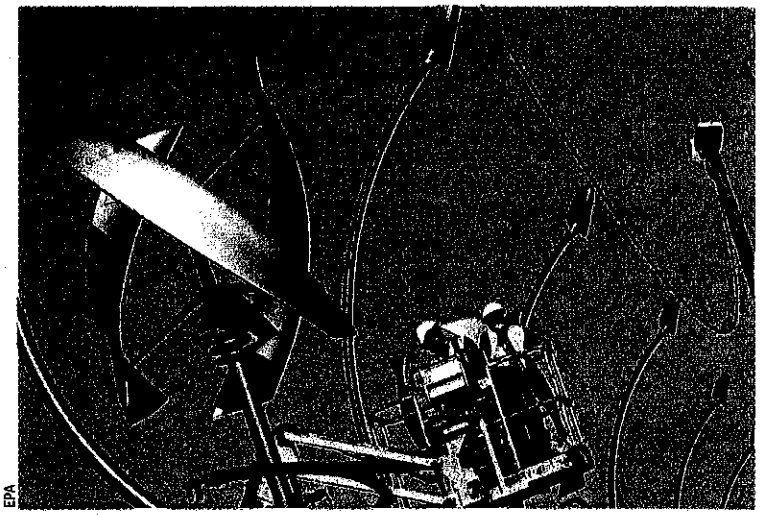
If it's cheap and plentiful—even low in carbon-dioxide emissions—much of the continent wants no part of it.

European Union law mandates that the 27 member countries on average cut their CO_2 emissions 20% by 2020, compared to 1990 levels. The goal after that is to cut emissions by between 80% and 95% by 2050. In May 2010, a study by the European Commission's energy department estimated the 20% cut would cost 48 billion euros ($66.3 billion) a year. The Commission's draft Energy Roadmap for 2050 is frank: "There is a trade-off between climate change policies and competitiveness."

There is indeed. The consultancy Ve[illegible] Economics has calculated the opportunity cost of the United Kingdom's subsidy system for renewables to be 10,000 jobs between 2009 and 2010 alone. A report by the Energy Intensive Users Group (which represents energy-intensive British businesses) and the Trades Union Congress cited steel making, ceramics, paper, cement and lime manufacture, aluminum and basic inorganic chemicals as industries facing up to 141% in additional energy costs by 2020 as a result of CO_2 emissions-reduction schemes. EIUG Director Jeremy Nicholson notes that "the current policies do seem to be angled towards creating a market for overseas competitors."

Emissions-free solar and wind energy, on which the U.K. plans increasingly to rely, are expensive. The government estimates that a planned offshore wind farm project ringing the coast will cost £140 billion, or £5,600 ($8,972) for every household in the country. Conventional energy could provide the same amount of energy at 5% of the cost.

The U.K.'s Department of Energy and Climate Change commissioned a report (led by Prof. John Hills of the London School of Economics) to examine the issue of "fuel poverty," defined as when fuel bills take up more than 10% of household income. It found four million of England's 21.5 million households fall in this category and the number could rise to 9.2 million by 2016, equivalent to 43% of all homes in England. One of the key factors are green taxes and levies expected to add up to £200 ($306) to bills by 2020.



EPA

Wind-powered street lights in Spain

Spain's experience with subsidizing renewables has been painful. A 2009 study at Universidad Rey Juan Carlos found subsidies required 3.45% of all of Spain's household income tax revenues and had led to a loss of 110,500 jobs. An April 2010 internal assessment by the former Zapatero government was equally bleak. It noted that the price of electricity determined the competitiveness of Spanish industry, and the price had risen to 17% above the European average. The chief reason: government subsidies for renewables, which had increased fivefold between 2004 and 2010.

While Spain has sought to lance its solar investment bubble, others are proceeding with poorly conceived schemes. Denmark already has the highest energy prices in Europe. Yet the recently elected Danish government raised its CO_2 reduction target to 40% by 2020 and has set a goal of completely phasing out fossil fuels by 2050.

Italy's subsidy system sets the price floor for wind energy at three times the market level. A study at Italy's Instituto Bruno Leoni found the capital necessary to create one green job could have created 6.9 jobs if invested in industry.

Even Germany, Europe's healthiest economy, may be in for some rude surprises. Germany's Renewable Energy Feed-in Act of 2000 requires electric utilities to buy renewables from all producers at fixed, exorbitant rates and feed it into the power grid for 20 years. A German utility executive has observed that solar energy in Germany makes as much sense as growing pineapples in Alaska. Despite this, Germany now has half the world's solar photovoltaic capacity.

Fritz Vahrenholt, the departing head of the renewable energy arm of RWE Innogy and a former hero of the German environmental movement, now says: "We're destroying the foundations of our prosperity. In the end what we are doing is putting the German automotive sector at risk, the steel, copper and chemical sectors, silicon, you name it."

France, because of its heavy reliance on nuclear power, has no emissions problem. But new President Francois Hollande has promised to cut nuclear energy by a third. His defeated Socialist rival, Maxine Aubry, had promised to eliminate nuclear altogether.

If the energy source is cheap and plentiful—even low in CO_2 emissions—much of Europe wants no part of it. Although Europe has huge shale gas resources, Germany has imposed a moratorium on shale-gas exploration, which France already forbids by law.

Evidence mounts daily that man-made global warming is a phony apocalypse, but its effect in depressing living standards is all too real.

Ms. Isaac's most recent book is "Roosters of the Apocalypse: How the Junk Science of Global Warming Almost Bankrupted the Western World" (Heartland Institute, 2012).

THE WALL STREET JOURNAL.

Published since 1889 by DOW JONES & COMPANY

Lex Fenwick, *Chief Executive Officer* — **Rupert Murdoch**, *Chairman* — **Robert Thomson**, *Editor in Chief*

Gerard Baker, *Deputy Editor in Chief*

DEPUTY MANAGING EDITORS:
Michael W. Miller; Alan Murray, *Senior Deputies;* **Rebecca Blumenstein; Deborah Brewster; Alex Martin; Matthew J. Murray; Raju Narisetti; F. James Pensiero; Ann Podd; Elyse Tanouye**

Neal Lipschutz, *Newswires Managing Editor*

Paul A. Gigot, *Editor of the Editorial Page*
Daniel Henninger, *Deputy Editor, Editorial Page*

WALL STREET JOURNAL MANAGEMENT:
Michael F. Rooney, *Chief Revenue Officer;* **Lynne K. Brennen**, *Circulation;* **Joseph B. Vincent**, *Operations;* **Sandra Baez**, *Advertising Operations;* **Daniel J. Bernard**, *Digital Product Chief;* **Chris Collins**, *Advertising;* **Larry L. Hoffman**, *Production;* **Jim Richardson**, *Brand & Research;* **Andrew Sippel**, *Marketing*

DOW JONES MANAGEMENT:
Todd Larsen, *President*
Kevin P. Halpin, *Chief Financial Officer*
Mark H. Jackson, *General Counsel*

OPERATING EXECUTIVES:
Alisa Bowen, *Digital*
Christine Brendle, *Asia*
Edwin A. Finn, Jr., *Barron's*
Joe Lanza, *Financial Markets*
Scott D. Schulman, *Corporate Markets*

VICE PRESIDENTS:
Dean A. Del Vecchio, *Chief Information Officer*
Jennifer Jehn, *Senior Vice President, Marketing*
Kelly Leach, *Senior Vice President, Strategy*
Bethany Sherman, *Chief Communications Officer*
Ian Weston, *Senior Vice President, Special Projects*
Joseph J. Cantamessa, *Security*
Howard Hoffman, *Communications*

EDITORIAL AND CORPORATE HEADQUARTERS:
1211 Avenue of the Americas, New York, N.Y., 10036, Telephone (212) 416-2000.
Subscription Services: Call 1-800-JOURNAL, http://customercenter.wsj.com

A NEWS CORPORATION COMPANY DOWJONES

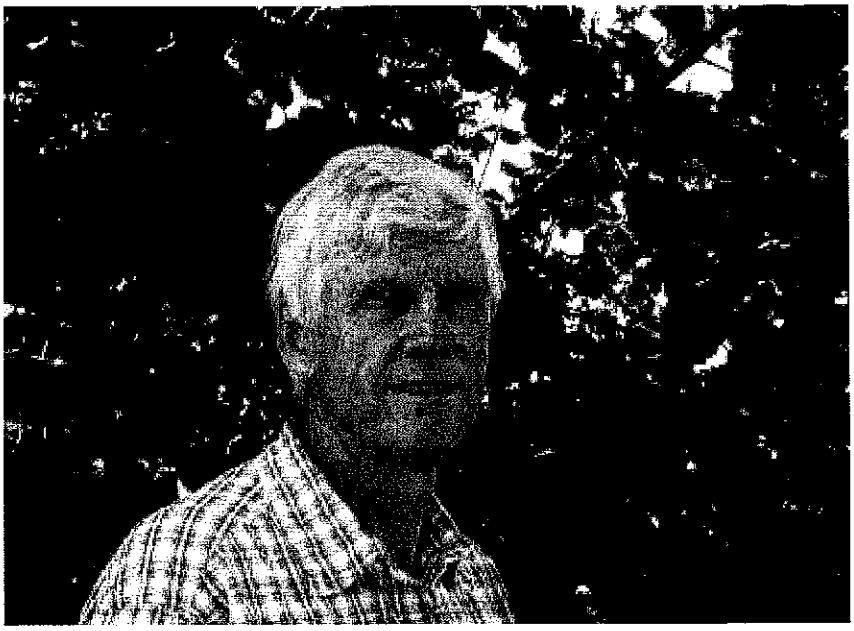
Germany Buckling Under the Weight of the Wind Scam!

AY 6, 2015 / 1957CHEV

German Climate Physicist says: Time for Germans to Sober Up, kill their Wind Power Debacle & Save Millions of REAL Jobs

May 6, 2015 by stopthesethings (http://stopthesethings.com/author/stopthesethings/)

FC 1



(https://stopthesethings.files.wordpress.com/2015/05/horst_ludecke-567x410.jpg)

****

The Germans went into wind power harder and faster than anyone else – and the cost of doing so is catching up with a vengeance. The subsidies have been colossal, the impacts on the electricity market chaotic and – contrary to the environmental purpose of the policy – CO2 emissions are rising fast: if "saving" the planet is – as we are repeatedly told – all about reducing man-made emissions of an odourless, colourless, naturally occurring trace gas, essential for all life on earth – then German energy/environmental policy has manifestly failed (see our post here (http://stopthesethings.com/2014/08/03/lessons-from-germanys-wind-power-disaster/)).

Some 800,000 German homes (http://stopthesethings.com/2014/04/20/german-wind-power-policy-an-economic-suicide-pact/) have been disconnected from the grid – victims of what is euphemistically called "fuel poverty". In response, Germans have picked up their axes and have headed to their forests in order to improve their sense of energy security – although foresters apparently take the view that this self-help measure is nothing more than blatant timber theft (see our post here (http://stopthesethings.com/2014/04/22/wind-power-costs-send-germans-back-to-the-stone-age/)).

German manufacturers – and other energy intensive industries – faced with escalating power bills are packing up and heading to the USA – where power prices are 1/3 of Germany's (see our posts here (http://stopthesethings.com/2013/05/28/german-industry-set-to-flee-renewable-power-price-punishment/) and here (http://stopthesethings.com/2014/01/25/german-wind-power-does-what-the-dambusters-couldnt-do/)and here (http://stopthesethings.com/2014/04/20/german-wind-power-policy-an-economic-suicide-pact/)). And the "green" dream of creating thousands of jobs in the wind industry has to turned out to be just that: a dream (see our post here (http://stopthesethings.com/2014/08/10/germanys-unsustainable-green-jobs-miracle-collapses/)).

Now, with Germany's wind powered energy debacle clearly running completely out of control, a few sober individuals – like German physicist, climate scientist and spokesman for the European Institute for Climate and Energy (EIKE), Prof. Dr. Horst-Joachim Lüdecke – have weighed in. Prof Lüdecke has ripped into his country's insane renewables policy; in an effort to get his compatriots to sober up, before they're all left without a job, living on welfare and sitting freezing, in the dark.

German Climate Physicist: Alternative Energy, Climate Are A "Religious Creed"… "Miles Away" From Openness
NoTricksZone
P Gosselin
26 April 2015

(https://stopthesethings.files.wordpress.com/2015/05/german-miners-protest.jpg)

****

Yesterday approximately 15,000 coal miners turned out to protest the German government's energy policy.

FC2

German Economics Minister Sigmar Gabriel announced earlier he intended to levy a CO2 surcharge on older coal power plants with the aim of shutting them down.

Before yesterday's demonstration, German physicist and climate scientist and spokesman for the European Institute for Climate and Energy (EIKE), Prof. Dr. Horst-Joachim Lüdecke, published a sharply-worded commentary here (http://www.eike-klima-energie.eu/news-cache/mitmachen-demonstration-der-gewerkschaft-bergbau-chemie-energie-gegen-die-energiewende-der-anfang-vom-ende-der-energiewende/) on the government's anti-fossil fuel/nuclear power policy. As the introduction Lüdecke wrote:

"Climate protection and the switch over to renewable energies were instilled in German citizens by state propaganda, green brainwashing and with the help of all of Germany's mainstream media. The unconditional necessity to advance into alternative energies has become a religious creed. By historical and global comparison, such a thing happens the most easily here, time after time. The logic used by the politically interested parties every time appears to be infallible. [..]

The argument goes as follows: The rescue of the planet from a death by heat and the immediate shutdown of the irresponsible German nuclear power plants are essential. The question of whether this is really true is not to be asked, let alone discussed."

Lüdecke says, however, that public awareness over the madness of Germany's energy policy is beginning to dawn and that he believes "now is the phase of sobering up, but unfortunately not yet one of reason." Leading print media are beginning to soften their support for the so-called Energiewende as it now stands, he writes. As angry coal miners take to the street, and thousands of industrial jobs become threatened, it is becoming increasingly apparent something has gone awry.

Lüdecke thinks that the sobering-up process will take time because every political party has made green issues part of its platform. "Green is a very difficult color to wash away," the German physicist writes.

Lüdecke then explains the primary disadvantage of renewable energy: their low energy density, i.e. meaning they require vast areas and that the major ones are weather-dependent. The

German EIKE professor does not know how long the sobering-up process will take, citing the immense power of an array of lobbies behind the green movement.

Lüdecke also aims harsh words at Germany's pompous and one-sided media:

"Finally a word for the German media, here especially for the public TV and radio networks. They are rightly being compared by the current contemporaries to the conditions of former East Germany or even earlier times."

At the political level, Lüdecke blasts the atmosphere of intimidation against people who have alternative views, who often are threatened with physical violence from radical leftists groups.

When it comes to openness, such as that proclaimed by French philosopher Voltaire, the German climatologist writes "in the dark media of Germany, we are miles away." He adds:

"Factual discourse, connected with polite listening and taking the arguments from opponents seriously, is definitely not in fashion."

Lüdecke describes Germany as a desert when it comes to independent reporting and expression of opinions.
NoTricksZone

There, as here, a gullible and pliant media has aided and abetted the greatest environmental and economic fraud of all time. Whether it's bone laziness, or intellectual dishonesty, modern journos have a lot to answer for.

(https://stopthesethings.files.wordpress.com/2015/01/sherlock-holmes-e1422335698728.jpg)

FCJ

****

Once upon a time, the ambitious young hack was inquisitive, suspicious and had the kind of forensic zeal that would have teamed up well with Sherlock Holmes and his side-kick, Watson. Not any more.

Sadly, save for a few remarkable examples – like Graham Lloyd (http://stopthesethings.com/2015/02/23/for-pacific-hydros-liability-to-its-wind-farm-victims-its-too-late-she-cried-the-horse-has-already-bolted/), Alan Jone (http://stopthesethings.com/2014/12/04/alan-jones-interviews-david-leyonhjelm-on-the-senates-inquiry-into-the-great-wind-power-fraud-cross-bench-lret-plan/)s, James Delingpole (http://stopthesethings.com/2014/10/10/james-delingpole-ten-reasons-why-people-who-support-wind-farms-are-deluded-criminal-or-insane/), Emily Godsen (http://stopthesethings.com/2015/01/10/tumbling-turbine-terror-continues-another-one-bites-the-dust-this-time-its-irelands-turn/), Christopher Booker (http://stopthesethings.com/2015/04/18/uk-election-brits-insane-wind-power-policy-the-elephant-in-the-room/) and Rodney Lohse (http://stopthesethings.com/2015/04/13/today-tonight-reports-on-senate-inquiry-into-the-great-wind-power-fraud/) – the press-pack simply parrot the drivel tossed out as "media releases" by the Clean Energy Council (http://stopthesethings.com/2013/12/20/who-put-the-clean-in-clean-energy-council/), and its wind industry funded equivalents around the globe.

But, thanks to the likes of NoTricksZone, and a few other dedicated bloggers, the unassailable facts are seeing the light of day; much to the horror and annoyance of the wind industry, its parasites and spruikers.

As the scale and scope of the fraud is steadily being revealed – despite the wind industry's best efforts to keep a lid on it – those who are in a position to have called it a long time ago – and failed or refused to do so – are going to end up looking like either gullible dupes; or willing worshippers, in an insidious, quasi-religious cult (http://stopthesethings.com/2014/05/15/ontarios-progressive-conservatives-leader-tim-hudak-didnt-drink-the-kool-aid/).

Lessons from Abroad?

from an NRECA Report on Distributed Generation Issues

As the United States wades through policies and regulations regarding the nation's energy resources, one study looks across the Atlantic Ocean to see what lessons could be learned from other nations' forays into energy production.

In Germany, a system of subsidies built into the electricity rates paid by residential, commercial and industrial electricity consumers has encouraged the rapid expansion of renewable energy production. The German subsidies – relatively modest for wind and other renewable energy sources compared with those for distributed solar power – have been touted as a model for encouraging renewable energy deployment in the U.S., and as a standard against which to measure and hence, to criticize, the slower U.S. adoption of renewable energy.

Christensen Associates Energy Consulting of Madison, Wis., undertook a study contracted by the National Rural Electric Cooperative Association to understand the outcomes of Germany's energy policies.

The study found that the German policies have actually resulted in:

- current residential electricity rates of 39.5¢ (US) per kilowatt hour – more than three times the average residential rate in the U.S.;
- rising electricity and energy costs that threaten both the German economy and international competitiveness of core German industries;
- increasing threats to grid reliability;
- and, in an ironic twist, increases in greenhouse gases precipitated by greater reliance on coal-fired generation.

From the perspective of their implication for U.S. policies and regulations regarding renewable energy, more important lessons learned from an examination of the German renewable energy experience includes, but is not limited to:

PCV

• The decision to achieve environmental and jobs objectives by making utilities and their customers pay renewable resource subsidies sufficient to make those resources cost-effective has proved economically unsustainable. These subsidies – amounting to $31 billion (US) in 2013 alone – currently add an 8.7 cent per KWH surcharge to electric rates for most residential, industrial and commercial consumers in Germany. This subsidy, by itself, is 2 cents higher than the average industrial electric rate in the U.S. – 6.7 cents per KWH.

• The German Legislature greatly underestimated the enormous subsidies needed to reach the very high renewable penetration targets they established in law. For example, in 2010, rooftop solar owners received nearly 52 cent per KWh produced that had a market value of 5.2 cents, and under the feed-in-tariff law, they would receive that 52 cents until 2030. To date, this program has cost German consumers more than $460 billion in higher electric rates and recent estimates forecast the total cost will reach $910 billion by 2022.

• Germany's system of guaranteed renewable subsidies has made attaining its social objective of CO_2 mitigation extraordinarily costly. According to a recent Massachusetts Institute of Technology study, in Germany CO_2 mitigation runs as high as $685 per ton of CO_2 reduction via solar and $60 per ton of reduction via wind, whereas CO_2 emissions credits in Europe could have been attained for less than $5 per ton in recent years.

The study found that the German policies have actually resulted in current residential electricity rates of 39.5¢ (US) per kilowatt hour – more than three times the average residential rate in the U.S.

• The enormous size of renewable subsidies and their impact on electric rates have impacted both the German economy and Germany's economic competitiveness abroad. An article in *Der Spiegel* described it this way: "Germany's Energy Poverty: How Electricity Became a Luxury Good in Germany," and cited the impact of those high electric rates on consumers and particularly the poor. Further, recent analyses by the IEA and others sight significant German losses in net exports due to "high energy prices and costly domestic subsidies for renewable energy."

• While the renewable subsidies have led to a significant increase in both solar and wind installed capacity, the production of energy from such capacity has continued to be quite modest, supplying less than 13 percent of Germany's energy requirements – while ironically German use of coal is at its highest level since 1990 and several new coal plants are under construction to keep the lights on.

• The rapid increase in wind and solar production has succeeded in driving down wholesale electric market prices and has created a widening gap between the low wholesale market prices that utilities receive for the renewable energy produced and the high price utilities must pay for that renewable energy. This widening gap has resulted in further yearly increases in the retail rates.

• The rate impacts and transmission grid operational difficulties experienced in Germany resulting from inefficient and costly promotion of renewable energy teaches that sustainable renewable promotion requires long-range planning and strategic collaboration among stakeholders to enable renewable resources to provide full value to consumers and power system operations. This is described in detail in the Electric Power Research Institute's report "The Integrated Grid: Realizing the Full Value of Central and Distributed Energy Resources."

• The problems caused by the enormous renewable subsidies and their effect on electricity rates have recently led the German government to drastically revise those policies by capping the enormous subsidies in 2014 and limiting annual increases thereafter to 2.5 percent.

• The German government has also finally realized that all users connected to the electric grid must help pay for it, and have recently approved implementation of a grid usage charge for new renewable owners. Germany thus became the first in Europe to charge consumers for access to the grid for their renewable generators. New renewable generators greater than 10kw are required to pay a 6 cents (US) per KWh grid access tax.

The above two changes to the original German "Energiewende" laws will not reduce German retail rates for a long time, but will reduce the rate of growth of the incredibly high retail rates in Germany.

Growing Demand in China

When looking at the international energy field, an eye must be kept on China's growing economy and energy needs.

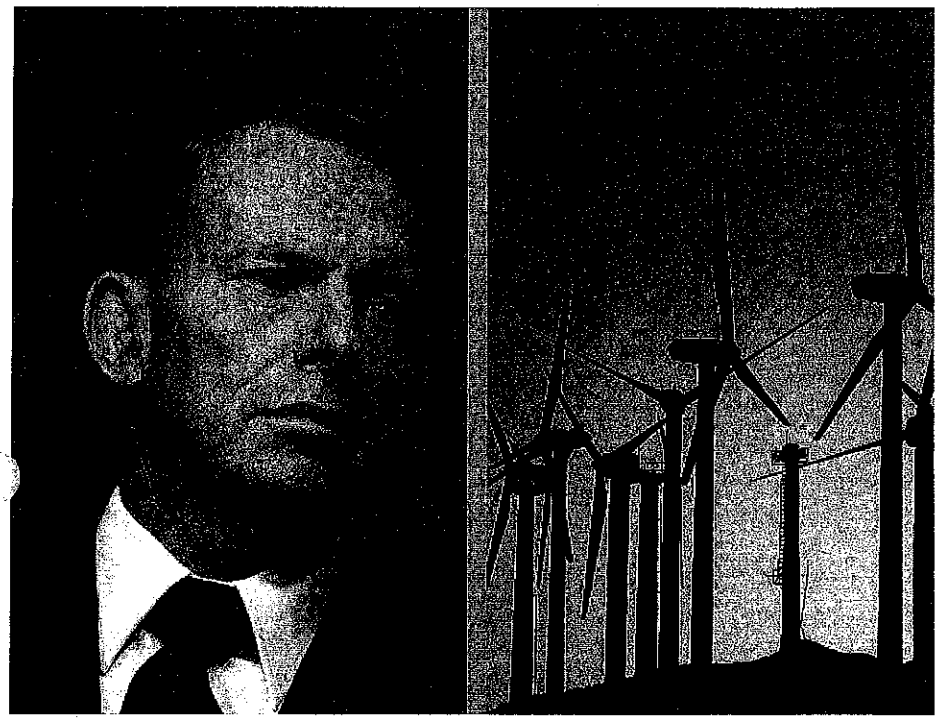
China is scheduled to build 21,000 MW of new coal-fired electrical generation units annually for the next 10 years (210,000 MW total). U.S. baseload generation is expected to increase a mere 29,000 MW in total over the same 10-year period (29,000 MW total).

However, if the Environmental Protection Agency's plan for new coal-based generation is enacted, no U.S. new baseload generation will be from new coal-fired units.

As a result, China's new unit coal-fired CO_2 emissions will grow by approximately 6.23 billion tons, while new unit natural gas U.S. emissions will increase by about 559 million tons. Even assuming all U.S. new baseload demand would be met by coal over the next 10 years, total U.S. growth in the electric utility sector would be about 914 million tons.

Assuming the EPA proposal does what NRECA anticipates and eliminates all new coal, the maximum possible CO_2 reductions under this proposal are about 355 million tons or five percent of China's growth over the next 10 years.

AUSSIE PM TONY ABBOTT CANCELS ALL GOVERNMENT WIND FARM SUBSIDIES



by SIMON KENT | 12 Jul 2015 | 674

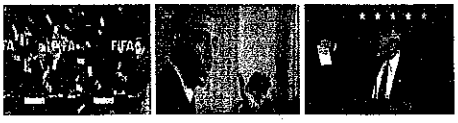
Australia has slammed the door shut on any new government-funded investment in renewable energy schemes as Prime Minister Tony Abbott extends his "war on wind power".

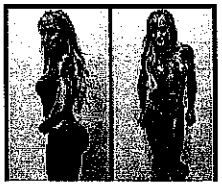
In doing so Mr Abbott has sent a clear message to the mendicant green renewable energy sector that there will be no more cheap state-supplied financing for its projects.

Fairfax Media reports Mr Abbott's conservative coalition government has ordered the taxpayer-funded $10 billion Clean Energy Finance Corporation (CEFC) to immediately cease any new investments in wind power projects. Treasurer Joe Hockey and Finance Minister Mathias Cormann issued the so-called green bank with a directive to change its investment strategy.

The funding ban is just the latest salvo in the government's attacks on the renewable energy sector which also includes small-scale solar projects.

Mr Hockey started the Abbott government's campaign against wind farms in 2014 when he told Sydney radio host Alan Jones he found the massive turbines "utterly offensive". Prime Minister Abbott reignited the debate last month, telling Jones he finds turbines





"visually awful". He said he wanted to reduce the growth rate of the sector as much as possible.

The decision will please anti-wind government members but wind industry insiders, who declined to comment on the record, told Fairfax Media the decision is a "big blow". One said that while it will not sink the industry altogether, it will make things harder.

Head of Australia at Bloomberg New Energy Finance Kobad Bhavnagri said the decision would have a "significant" impact on the industry.

As Breitbart London reported last month, the UK-born Mr Abbott (his family moved to Australia from London when he was aged three), who once famously dismissed the argument behind anthropogenic climate change as "absolute crap", has never carried his disdain for wind farms lightly.

In June he told a radio interviewer a cycling trip to an island off the Western Australia state capital Perth had rammed home his personal dislike for wind generators. He added that he wants "fewer" wind farms in Australia and is keen for an inquiry into their health impacts.

"When I've been up close to these things, not only are they visually awful, but they make a lot of noise," Mr Abbott told Sydney broadcaster Alan Jones. "Up close, they're ugly, they're noisy and they may have all sorts of other impacts.

"It's right and proper that we're having an inquiry into the health impacts of these things."

Wind power is not the only part of the Australian alternative energy industry to be targeted by Mr Abbott.

The *Guardian Australia* reports that the new directive banning the CEFC from investing in existing wind technology will also apply to small-scale solar projects.

FOLLOW SIMON KENT ON TWITTER: Follow @SunSimonKent *OR E-MAIL TO: SKENT@BREITBART.COM*

READ MORE STORIES ABOUT:

Big Government, Breitbart London, Environment, Australia, green energy, Prime Minister Tony Abbott, green levies

We Recommend

MOST POPULAR

New Video Shows Another Planned Parenthood Doctor Haggling Price of Baby Body Parts
6711 comments · 14 hours ago

Donald Trump Launches Hotline for Veterans, Calls for American Flag to be at Half-Mast for Tennessee Shooting Victims
2718 comments · 10 hours ago

Mother of Son Murdered by Illegal Alien Slams Sanctuary Cities, Politicians: 'Your Silence Speaks Volumes'
2402 comments · 9 hours ago

Obama's ICE Director: No Immigration Enforcement Until Amnesty Is Passed
836 comments · 3 hours ago

Donald Trump Releases Lindsey Graham's Cell Phone Number
1684 comments · 9 hours ago

Ben Shapiro Files Police Report Against Transgender Reporter Zoey Tur
6210 comments · 1 day ago

Fox Island Wind Neighbors

The truth about living near Vinalhaven wind turbines

Cautionary Tale for Wind Power Enthusiasts: "Europe's Renewable Romance Fades"

Note: On Vinalhaven, the bumper stickers "Spin, baby, spin" with an image of wind turbines sends a tired message. The bumper sticker is as empty of meaning as the FIEC production numbers that appear on ratepayer bills; a monthly reminder to the neighbors of the Fox Islands wind turbines that "spin" is pretty much all that emerges from the closed-loop feedback that suppressed community discussion — unlike places like Falmouth, MA — about the true costs and questions of wind power.

The "spinning" of wind turbines can be measured by kilowatt hours produced but it is meaningless without an analysis of the impact on the electricity grid. A new Wall Street Journal OPED gets to the heart of the matter.

Is wind power helpful to reduction of carbon emissions — as claimed by its advocates — or does it hurt? Because if it hurts, then paying twice as much for electricity — as Vinalhaven ratepayers do — than they would if the turbines had never been built, really hurts. Wind turbine enthusiasts are convinced they have the answer to this question: paying more for electricity through "sustainable" wind shows they are planting the American flag on energy independence. Really? Utility economists know the answer is much more complicated than "spin".

Through one set of lenses, the neighbors of the Vinalhaven wind turbines are guinea pigs for the experiment of turbine placement where no state authority prevails over local, patriarchal practices of governance. It has turned out to be an extraordinarily costly experiment for neighbors, who are self-funding litigation against the state of Maine; litigation that is vehemently supported by Fox Island Wind and the local electric cooperative.

Through another set of lenses, the wind turbine neighbors are also paying — because they are subject to the miscalculations by the local enthusiasts on placement of the turbines too close to residences — for very important questions related to the stability of the New England electricity grid.

That the answers to those questions are gradually coming into focus — concerning the stop-start nature of wind and absence of technologies to store electricity on a municipal scale — is bitter news to neighbors whose property values, through no fault of their own, is impacted by wind

turbines.

Wall Street Journal OPINION
July 29, 2013, 6:52 p.m. ET
Europe's Renewable Romance Fades

High energy bills and threats of blackouts ended the honeymoon. America, take note.

By DAVID GARMAN AND SAMUEL THERNSTROM

Europe has bet big on wind and solar energy, and many environmental advocates would like America to follow. Wind and solar have a role in the U.S. energy economy, but we would be wise to see the cautionary tale in the European experience and adjust our plans accordingly.
Wind and solar generate 3.5% of America's electricity today, but Denmark gets 30% of its electricity from wind and hopes to produce 50% by 2020. Germany, Europe's largest national economy, produces roughly 12% of its electricity from wind and solar today, and it wants renewable energy to account for 35% of electricity generation by 2020.

Clean energy powered by renewable resources is understandably attractive. But the honeymoon with renewables is ending for some Europeans as the practical challenges of the relationship become clear.

The first challenge is cost. Germany has reportedly invested more than $250 billion in renewable energy deployment, and its households pay the highest power costs in Europe—except for the Danish. On average, Germans and Danes pay roughly 300% more for residential electricity than Americans do.

Another challenge of Europe's growing dependence on renewable energy is far more serious: the potential loss of reliable electrical supply. It's one thing to ask consumers to pay more for cleaner energy; it's another to force them to endure blackouts.

Since large amounts of electricity cannot be easily or inexpensively stored, it must be generated and delivered ("dispatched") to meet the constantly changing demand for power. As millions of consumers turn electric lights and appliances on and off, power generators and grid operators must match supply to demand to ensure that current is moving across wires at the proper frequency to avoid power failures, brownouts and other problems.

Normally, this is fairly straightforward. Grid operators generally rely on coal and nuclear plants to meet baseload demand while modifying gas and hydroelectric power output to meet shifting demand. But electricity from wind and solar is variable and intermittent. Nature determines when and how much power will be generated from available capacity, so it is not necessarily "dispatchable" when needed.

When intermittent renewables are small players in the grid, they can be easily absorbed. P as they reach European levels of penetration, the strain begins to show. There are increasing reports of management challenges resulting from wind and solar across the European grid,

including frequency fluctuations, voltage support issues, and inadvertent power flows. Anxious operators are concerned about potential blackouts.

In an April 17, 2012, letter to EU Commissioner for Energy Gunter Oettinger, for example, Daniel Dobbeni, the European Network of Transmission System Operators president, said grid operators are "deeply concerned about the difference in speed between the connection of very large capacities of renewable energy resources and the realization in due time of the grid investments needed to support the massive increase of power flows these new resources bring." He also expressed great concern "about the potential destabilizing effect of outdated connection conditions for distributed generation that are not being retrofitted anywhere fast enough."

There are solutions for these problems—upgrades to electricity transmission and distribution and expansions of "dispatchable" generation capabilities, coupled with "demand-response" and other efficiency measures. But the additional cost will be significant. The International Energy Agency has warned that Germany will need to invest between €47.5 billion ($62.9 billion) and €72.5 billion ($96 billion) in transmission and distribution over the next 10 years.

For now, the American picture is different. Unlike Europe, the U.S. has excess generating capacity and generally adequate transmission and distribution systems, so variability in the small amount of electricity produced by wind and solar in most markets is not a significant problem. But renewables are growing quickly. As older nuclear plants are decommissioned and new Environmental Protection Agency regulations shut down coal-fired plants, states such California that are increasing renewable requirements will start to look more like Europe, with its cost structure and grid-management challenges.

There is also an important lesson in the European experience with energy subsidies: Focus incentives so they reward the right behavior. Lavish subsidies for wind and solar have changed Europe's generation mix, but the costs have been high because the subsidy structure prioritized mass deployment rather than efficiency, reliability and innovation. Even in the U.S., the wind-production tax credit has occasionally produced "negative pricing"—that is, turbine operators pay grid operators to take their power even though it isn't needed, just so the wind generators can collect tax credits.

If Congress insists on subsidizing renewable energy (and to be fair, Washington subsidizes all forms of energy), it should reform subsidies to incentivize innovations that would improve the efficiency and reliability of wind and solar, as well as the development of improved energy-storage technologies.

It is not surprising that many Americans share the European passion for wind and solar. But, as with any relationship, once the initial infatuation fades and difficult issues start to emerge, thoughtful action is needed before the relationship sours. Careful reform of our policies, informed by lessons learned from Europe, could avoid an ugly divorce down the road and help renewables find their place in America's energy economy.

FC 7

Mr. Garman, an assistant secretary and under secretary at the U.S. Department of Energy (2001-07), is on the board of directors of the Energy Innovation Reform Project. Mr. Thernstrom is executive director of EIRP.

This entry was posted on August 1, 2013 at 12:24 pm and is filed under Uncategorized. You can follow any responses to this entry through the RSS 2.0 feed. You can leave a response, or trackback from your own site.

FROM OTHER STATES

Backlash against big wind: Booing Sierra Clubbers in Pennsylvania

If you need another example of the growing backlash against the encroachment of the wind industry, consider this: residents of Penn Forest Township, Pennsylvania, are booing the Sierra Clubbers.

On June 23, residents of Penn Forest Township, which sits near the heart of the Pocono Mountains, turned out for a zoning hearing on a 37-turbine wind project proposed to be built on land owned by the Bethlehem Authority, the financial arm of the City of Bethlehem's water system. The next day, Nicole Radzievich, a reporter for the Morning Call , (based in Allentown) published an article on the hearing, held at a local fire station, which she reported was "packed to capacity with mainly critics."

Radzievich added that "nearly 300 opponents" of the proposed wind project "hurled boos" at Pennsylvania Sierra Club's Donald Miles for supporting the wind project, "and applauded verbal jabs against the wind energy company, Iberdrola Renewables."

Of course, the backlash in Penn Forest Township and dozens of other towns, counties, and villages against the encroachment of wind energy doesn't fit the popular-media narrative. Wind energy, we are constantly told, is "green" or "clean." That same narrative, which is endlessly pushed by the Green/Left claims that we'll have to install forests of wind turbines all across the countryside (and we'll have to put thousands of them offshore, too) if we are to avoid catastrophic climate change.

Those may be the claims, but the opposition in Penn Forest Township provides a vivid example of how the land-grabbing subsidy-fueled energy sprawl of the wind industry is being met by a burgeoning backlash that can be seen from Maine to California and New York to Loch Ness. Over the past 18 months, according to published media stories, more than 100 governmental entities in about two dozen US states have moved to reject or restrict the development of wind-energy projects. (To see a spreadsheet with a listing of the entities, click here.)

In 2015, more than 60 governmental entities in 22 states moved to reject or restrict wind-energy developments with a total capacity of some 3,100 megawatts. During the first six months of 2016, more than 40 governmental entities in 18 states have rejected or moved to restrict the installation of wind energy facilities having a total capacity of more than 2,400 megawatts.

Backlash against big wind: Booing Sierra Clubbers in Pennsylvania

Among the recent rejections: last month the Lehighton Water Authority rejected Iberdrola's proposal to build three wind turbines on its property. Those turbines were to be part of the same 100-megawatt wind project Iberdrola wants to build on the Bethlehem Authority's land. (As I reported a few weeks ago, Spain-based Iberdrola, which has a seat on the board of the American Wind Energy Association, has received some $2.2 billion in state and federal subsidies.)

The backlash against the wind industry is not being covered by the New York Times or other national media outlets. But reporters like Radzievich who work for newspapers and TV stations in small towns are covering the rural backlash against Big Wind. And that coverage -- of zoning hearings, city council meetings, and court rulings – shows how policies being pushed by 350.org, Sierra Club, Natural Resources Defense Council, Greenpeace, and other Big Green groups are in direct conflict with the interests of rural residents who don't want their neighborhoods filled with 500 foot-high wind turbines.

Hank Orlandini, and his wife, Heather, live in Albrightsville, in a house that would be less than half a mile from Iberdrola's proposed wind project. He was at the June 23 zoning hearing. During a phone interview, I asked him about the statements made by the Sierra Club representative at the hearing. Orlandini chuckled and replied "We booed him out of the place." He went on about the Sierra Club, saying, "They claim to represent the environment, but to me they represent big wind, big government, and big business."

Wealthy urbanites and climate-change activists may like the idea of wind turbines, but a growing number of rural residents like the Orlandinis don't. They don't want the noise, property-value depreciation, and visual blight that accompanies modern wind-energy projects. Here are few more examples of the backlash:

- Last July, the Los Angeles County Board of Supervisors voted unanimously in favor of an ordinance banning large wind turbines in the county's unincorporated areas. During a hearing on the measure, Supervisor Michael D. Antonovich said "Wind turbines create visual blight." In addition, he said the skyscraper-sized turbines would "contradict the county's rural dark skies ordinance which aims to protect dark skies in areas like Antelope Valley and the Santa Monica Mountains."
- In January, two members of the Vermont State Senate (both Democrats) introduced a bill that would ban wind projects in that state. State Senator John Rodgers, the author of the bill, told me he's trying to save his state's tourism

industry. He said "Destroying the natural environment in the name of climate change is moronic."

- In New York, where Gov. Andrew Cuomo is pushing a 50-percent renewable mandate, a 200-megawatt project called Lighthouse Wind, is being formally opposed by three New York counties -- Erie, Orleans, and Niagara -- as well as the towns of Yates and Somerset.
- In April, a wind project near Scotland's famous Loch Ness was rejected by local authorities because of its potential impact on tourism. After the ruling, Jim Treasurer of the Friends of the Great Glen, which had worked to halt all wind-energy development within a 22-mile radius of the loch, told a reporter for The Press and Journal, (a newspaper based in Aberdeen) that the Scottish Highlands had "reached saturation point" with wind energy projects. "It's perverse to call these developments 'green' when they could destroy the core attraction of the lifeline Highland visitor economy."

The ramifications of the growing backlash against the wind business are obvious. Under the Clean Power Plan, the Obama administration expects domestic wind capacity to nearly triple by 2030. The most powerful Democrats in Washington, as well as Hillary Clinton, the presumptive Democratic nominee for the White House, are pushing a climate agenda that hinges on widespread deployment of wind energy. That same agenda is being pushed by the biggest and richest environmental groups in the US. Indeed, climate change was the rationale being pushed by the Sierra Club's Mills at the Penn Forest zoning hearing on June 23. If all rural residents reject wind energy projects, Mills claimed, "climate disruption is guaranteed for our grandchildren."

Furthermore, the backlash is growing at the same time that nearly every wind-energy company is racing to get as many projects permitted and launched before the end of this year as possible. They're in a hurry because the wind industry's lucrative subsidy, the $23 per-megawatt-hour production tax credit, will be reduced by 20 percent next year and in ensuing years until it expires in 2019. Several wind-industry executives have recently admitted that any reduction in the subsidy gravy train could result in little or no new wind capacity being built after this year. A few weeks ago, Patrick Woodson, chairman of E.On North America, a subsidiary of German energy company E.On, told Recharge News that "It's going to be enormously challenging to build projects, beyond this [six-month] window." (According to Good Jobs First, E.On has collected some $785 million in state and federal subsidies.)

Another obvious point needs to be made: the backlash against the wind industry is occurring without any help from the Big Green groups, who, instead of protecting rural landscapes and viewsheds from the sprawl of wind energy, are,

instead, solely focused on demonizing the oil and gas industry and the process of hydraulic fracturing.

According to a report by the National Center for Policy Analysis, about 470 communities in 24 states have banned fracking or practices associated with the process. Nearly half of those communities are in one state, New York. But those bans have come about over the course of several years. Furthermore, they have been actively coordinated by national environmental groups with multi-million-dollar annual budgets who raise money by continually attacking hydrocarbons and nuclear energy.

For instance, Food & Water Watch, which has an annual budget of about $13 million, actively promotes bans on hydraulic fracturing. With 17 offices in states across the country, it organizes "for bans on the state level, working in partnership with local and statewide organizations." The Natural Resources Defense Council, which has an annual budget of about $84 million, does similar work. It has a Community Fracking Defense Campaign, that uses a policy and legal team to "craft effective local laws on fracking, defending those laws in court when challenged, and working at all levels to preserve and protect community rights and local control."

By contrast, the rural organizations fighting wind projects are invariably run by volunteers working on shoestring budgets. For instance, last December, the Partnership for the Preservation of the Downeast Lakes Watershed, a tiny group which had been fighting a $100 million 40-megawatt project known as Bowers Wind, won a major victory when the Maine Judicial Supreme Court upheld a ruling by the state's Board of Environmental Protection, which had previously rejected the project.

Gary Campbell, the president of PPDLW, told me that his group got no help from national environmental groups even though the wind project -- which was being pushed by the now-bankrupt alt-energy outfit, SunEdison -- was to be built adjacent to some of Maine's most scenic lakes. "Every time we approached Maine Audubon, they slammed the door in our face," Campbell told me. Campbell's group fought the project for six years with no paid staff and no attorneys. Their total spending: about $15,000. Why did he fight so hard? The wind industry, Campbell said is "destroying the tourism economy of Maine."

What does the wind lobby have to say about the rural backlash? A few months ago, I put that question, and several others, to the American Wind Energy Association, which spends more than $20 million per year promoting wind energy. I emailed Tom Ward, the group's deputy director of strategic

communications, as well as the association's CEO, Tom Kiernan. Both Ward and Kiernan refused to answer any questions.

Perhaps that's not surprising. If the wind lobby acknowledges the widespread rural opposition to the landscape-destroying energy sprawl that fuels their business, it could put a major dent in the industry's social marketing efforts.

While the wind lobby can attempt to ignore the opposition, it will have to contend with anti-wind groups like Save Our Allegheny Ridges, which is headed by a firebrand named Laura Jackson, who lives in Everett, Pennsylvania. In an email, Jackson told me that the site of Iberdrola's proposed wind project is "a healthy forest with rare plants and animals in a beautiful area of the Poconos…it is a spectacular area." Jackson also said that shortly after locals heard about the Iberdrola wind project, Jackson's group helped create a local chapter of SOAR in Penn Forest Township. Local residents then launched a private Facebook page which now has about 1,100 members.

Orlandini, who works in the service department of a Ford dealership in Lansdale, is one of those members. Over the past few months, he has studied Iberdrola and the wind industry. Does he think wind energy is "green"? Orlandini quickly replied, "It's not green energy. It's all about money so a company can build turbines and be subsidized by our government."

The next zoning hearing on the Iberdrola wind project will be held on July 14 at Penn Forest Township's Volunteer Fire Company #1, in Jim Thorpe, at 7 pm.

Robert Bryce is a senior fellow at the Manhattan Institute. His latest book is "Power Hungry: The Myths of "Green" Energy and the Real Fuels of the Future

Study shows Alabama dodged financial bullet by rejecting wind farms

- WRITTEN BY ELIZABETH BESHEARS
- ON JULY 8, 2015 AT 11:56 AM CDT

Brazos Wind Farm in the plains of West Texas

MONTGOMERY, Ala. — A new study from Utah-based public policy research organization Strata shows that Alabama might have dodged a significant fiscal bullet by effectively driving out a 2,000 acre wind farm in North Alabama.

The study found the "true cost" of wind produced energy to be much higher than is claimed by proponents of the green alternative—as much as 48 percent higher.

Did Alabama dodge a bullet?

In the 2014 Alabama Legislative Session a bill was proposed by Sen. Phil Williams (R-Rainbow City) that would have held renewable energy developers to the same standards as traditional energy providers. Though the bill ultimately died late in the session, it sparked local legislation in many areas of the state holding wind turbine companies accountable, even causing an Obama-linked company to halt its plans to build a huge wind farm in Cherokee and Etowah Counties.
he true cost of wind power, Strata explains, is "what consumers and society as a whole pay both to purchase wind-generated electricity and also to subsidize the wind energy industry through taxes and government debt. The true cost includes both traditional cost accounting and the seen and unseen

FS 1

costs of policies that seek to artificially bolster renewable energy development and production. When examined more closely, many claims about wind energy are found to be indefensible."

Wind power has been the fastest growing form of energy in recent years, representing 43 percent of all new electricity-generating capacity in 2012—but not without significant help from the federal government.

Subsidies

In fiscal year 2010 42 percent of direct federal subsidies for energy, more than any other type of electricity generation, despite this producing only 2 percent of the nation's total electricity.

The role of subsidies in wind farms is so large that billionaire investor Warren Buffett has said, "[w]e get a tax credit if we build a lot of wind farms. That's the only reason to build them. They don't make sense without the tax credit."

Data collected by the U.S. Energy Information Administration show that federal wind energy subsidies have grown by an average of 32 percent each year since 2000, and in 2010 the federal government spent nearly $5 billion on subsidies for wind energy.

"Federal policies… enable producers to sell wind power at prices well below what the market would otherwise dictate," the Strata study discovered. "Even with these incentives in place, wind has been slow to take hold as a viable energy source. By 2013 it accounted only for 4 percent of annual energy consumption. 22 If these policies did not exist at all, wind power would be economically unsustainable—it would be prohibitively expensive to construct wind energy facilities and too expensive for consumers to use the resulting electricity."

Opportunity costs

Another hidden cost of the United States' wind energy policy, according to the study, is the "opportunity cost" of the billions spend in subsidies. That taxpayer money could have been used for any number of initiatives with higher value propositions: education, paying down the national debt, or healthcare reform.

"In a free energy market, consumers would be free to make decisions about energy consumption based on preferences about price, environmental impact, and other factors such as reliability," the study states.

"Through such policies, U.S. policymakers have essentially decided that electricity consumers will have wind power, even if it is more expensive," Strata concludes. "The cost of this decision has fallen to U.S. taxpayers and consumers of electricity. When weighing the costs and benefits of wind power, not including all of the hidden costs makes wind power appear to be a more attractive option than it actually is. Energy policy decisions, however, should be based on a more complete estimate of the cost of wind energy."

(H/T Breitbart News)

FS 3

States Are Unplugging Their Renewable-Energy Mandates

CROSS COUNTRY

By Donald Bryson And Jeff Glendening

When it comes to state energy policies, the wind is finally blowing in the right direction. Take our home states of Kansas and North Carolina, both of which have begun to look at their renewable-energy mandates with new skepticism.

In May, Kansas effectively repealed its Renewable Portfolio Standard—which required 20% renewable electricity by 2020—by making the target voluntary. "This allows some free-market forces to go to work," the chairman of the House Energy and Environment Committee declared. North Carolina is on track to freeze its RPS law this year. The House has passed two bills that would hold the mandate at 6% renewables and prevent it from rising to 12.5% by 2021 as originally planned. There is powerful support in the state Senate for passing similar language before the end of the legislative session, likely in September.

Our states aren't the only ones having second thoughts. In 2014 Ohio froze its RPS law at 2.5% for two years, pushing the final target of 12.5% back to 2026. West Virginia eliminated its mandate outright in February. The other 25 states with renewable portfolio standards would be wise to follow suit. These laws were in vogue from the late 1990s to the late 2000s as lawmakers sought to demonstrate their green credentials.

Most state RPS laws require that between 10% and 25% of electricity come from renewables. The figure is higher in some states: In New York the mandate is 30% by the end of this year, and in California it is 33% by the end of the decade.

These laws force states to increase renewable electricity generation, regardless of whether it makes sense for the local economy. New solar and wind farms cost substantial sums, which are then passed on to individuals and businesses through higher energy bills. Even once they are up and running, the electricity they generate costs a pretty penny.

A June study by the Institute for Energy Research shows that electricity generated from new wind farms is between two and four times more expensive than electricity from existing coal, natural gas and nuclear plants. Compared with new fossil-fuel plants, electricity from new wind farms is between 15% and 54% more expensive. As for solar, EIA data show it will continue to be significantly more expensive than competitors for at least the rest of the decade, and likely far beyond.

Electricity prices in most states with RPS laws are "starkly higher," according to a 2012 Manhattan Institute report. The difference was especially striking in coal-dependent states: "Seven such states with RPS mandates saw their rates soar by an average of 54.2 percent between 2001 and 2010, more than twice the average increase experienced by seven other coal-dependent states without mandates."

Nationally, federal data from the Energy Information Administration (EIA) show that electricity is, on average, 22.9% more costly—24.2% for residential customers and 21.4% for industrial—where RPS mandates are in effect.

North Carolina and Kansas are the latest to suffer sticker shock from the price of politicians' green dreams.

Our home states bear this out. EIA data show that over the past half-decade North Carolinians' electricity rates rose twice as fast as they did in neighboring states, none of which have RPS laws. Today, our rates are nearly 2% higher than our neighbors', and prices would increase further if targets for wind and solar, which now account for only about 3% of generation, are ratcheted up. In Kansas, where 19% of electricity came from wind in 2013, electric rates are on average 16% higher than in neighboring states.

No matter where you live, higher electric prices are harmful. When consumers pay higher electric bills, they have less to spend on everything else. When overhead costs for businesses and manufacturers increase, they have to divert money from increasing wages and creating jobs. Sometimes they even have to raise prices, which hits consumers every time they go to the store.

A report released in February by the Institute of Political Economy at Utah State University and Strata Policy quantifies these losses. North Carolinians lose a potential $14.4 billion in real personal income a year, while Kansans could be missing out on $4.85 billion a year, the report states. This money should be in families' wallets. Instead, it is going to subsidize wind turbines and the like. The report further suggests that "RPS is correlated with an increase of 10 percent in a state's unemployment rate." That equates to 5,500 jobs for Kansas and 24,000 in North Carolina.

We're fortunate that elected officials in our states are taking steps to undo this damage. But half of America's states still suffer under the burden of Renewable Portfolio Standards. State lawmakers who want to help their constituents and boost their economies would be wise to let these green energy mandates flutter away into the wind.

Mr. Bryson and Mr. Glendening are, respectively, the North Carolina state director and Kansas state director for Americans for Prosperity.

F53

Tipton County Indiana Commissioner voted for "wind farms", now lives with regrets

Credit: Huntington County Concerned Citizens | www.huntingtonccc.org ~~

Dear Howard County Commissioners and Council Members;

I am writing to you all as a former commissioner colleague who aided in the negotiations and agreements with E.ON Climate Renewables with Tipton County in 2011. From the onset, I was open to windfarm development in a small section of Tipton County because the commissioners had received no opposition and I felt that the landowners wanted it. My own family was offered an opportunity to lease land to E.ON and we declined because my husband did not care to farm around the towers, and I just didn't want to look at them. I set my own personal views aside and made decisions based on what I felt the majority of the public wanted. I was outspoken enough, however, to say that I would never support a plan to cover a large portion of the county with wind turbines. As it turned out, the problem was that when the decisions were being made to build "Wildcat I", the commissioners were not hearing from the "majority". People really did not know this was happening, or if they did, they did not perceive it to be as "invasive" as it was. As you know, public notices are small and often overlooked in the newspaper, so not much resistance was present.....until the towers went up, and people saw how enormous and intrusive they were. The red blinking lights even disturb my own summer evenings and my home is 6 miles from the closest tower..... !;!!! You don't have the time to read what all I could tell you, so in a nutshell I just want to say that I wish I had the knowledge then that I have now. However, what I can do, is to try to pass some of what I know onto the elected officials in the neighboring county so that perhaps you can gain some wisdom from what I learned in the school of hard knocks.

In Tipton County.....my 83 year old mother is mad at me (since I signed the agreements) because she no longer has colorful birds coming to her feeders.....my brother's view from his family dining room table used to be a vast expanse of crops and natural habitat.....now that pristine 'vista' is forever marred by giant metal structures.....neighbors hate each other.....back and forth letters to the editor have been selling papers for over a year now.....families are torn apart,,,,, and because the physical presence of the towers will be there for 30 years, these relationships will never be repaired. In short. . . . this has become an issue that has divided our community like no other.

It has torn our county apart. The May, 2014 primary election is evidence that the majority of the voters supported candidates openly opposed to wind farm development and an incumbent commissioner was voted out of office due to his unwillingness to listen to the majority on any issue, including wind.

If I had this to do over, I would NEVER enter into an agreement with any wind company now that I know what it has done to my home community. I am not proud that my name is on those documents. The wind company has breached many parts of the agreement, but insist that their failures are "minor". Their field representative is arrogant and cavalier in his attitude toward the people who are suffering with the effects of the noise and flicker. You can't lose something you never had.....so you are not "losing" the supposed 'windfall' of money that the project purportedly brings in. What you WILL lose however, cannot be measured in dollars. You will lose the rural landscape as you know it and you will lose the closeness of "community spirit" because people will hate each other over

this and the presence of the towers will always be a constant reminder of the rift.....thus the wounds will never heal.

Please consider this: What do you think of a company that KNOWS it has fierce opposition from a segment of the Howard County citizenry, but would STILL want to build in your county? It is akin to forcing themselves onto you when they KNOW they are not wanted by those in the project area who would be affected by their presence and are receiving no compensation for the change in their environment. How much of a "community partner" would they be when they really don't care about the wishes of the people?

I don't know anything about which "facts" are true and which "facts" are false with regard to property values and personal health issues. But what I DO know as fact is this: Any issue that has become so contentious that it has caused large groups of people to assemble and vehemently oppose it. . . . and which has caused so much heartache and angst among the citizenry . . . . just cannot be good for the whole. I do not feel that Tipton County will ever wholly heal from the deep personal wounds incurred by many from the placement of wind turbines in our county.

I will leave you with this last piece of wisdom from someone who has "been there, done that".

As an elected official/public servant. . . . . if you must go forward with approvals that allow wind farm development . . . and thus you become the reason a wind farm was built in Howard County. . . it will be a decision you will regret the rest of your life.

You will join me.

Jane Harper

Tipton County Commissioner 2009-2012

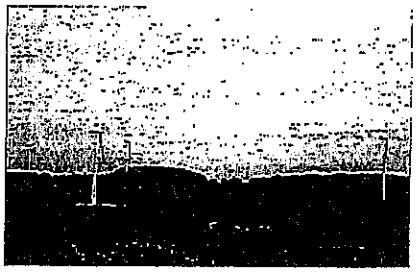
Source: Huntington County Concerned Citizens | www.huntingtonccc.org

6

Court Backs Finding Of Wind Turbine Noise Problem

Lake Winds energy plant in Mason County now has to mitigate noise of its windmills

By Jack Spencer | June 28, 2014



The Lake Winds Energy Plant in Mason County.

Michigan's 51st Circuit Court has ruled that Mason County was justified in determining that wind turbines at the Lake Winds Industrial Wind Plant near Ludington are too noisy.

In his June 16 decision, Judge Richard Cooper denied Consumer Energy's appeal to have the court overturn the county's finding that the wind plant was exceeding the county's established decibel level limits.

In a highly technical explanation, Judge Cooper said it was reasonable for the county to take into account the impact of maximum wind speeds that are not outside the norm. He also rejected the argument that excessive noise levels occurring only during certain periods of time should be allowed.

Lake Winds is a 56-turbine facility located south of Ludington. It was the utility company's first wind plant project in Michigan. Residents who live near the $255 million plant began complaining of health problems shortly after the turbines began operating. They filed a lawsuit on April 1, 2013, arguing that noise, vibrations and flickering lights emanating from the wind plant were adversely affecting their health. Among the symptoms noted in the lawsuit were dizziness, sleeplessness and headaches.

In September 2013, the Mason County Planning Commission determined that the wind plant was not in compliance with safety guidelines. CMS Energy, which is the parent company of Consumers Energy, then appealed that decision to the Mason County Zoning Board of Appeals and lost. In January, CMS took the case to court and it has now lost again.

CMS spokesman Dennis Marvin said the utility has yet to decide whether it will appeal Judge Cooper's decision to the Michigan Court of Appeals.

"Obviously, we were disappointed by the decision," Marvin said. "We are still evaluating whether or not to appeal. In accordance with the court's ruling we are cooperating with Mason County on our mitigation plan."

FSS

Mason County has hired experts to continue tests at the wind plant. However, because wind speeds are generally low in the summer the testing isn't likely to resume until September, at the earliest. Under the mitigation plan, affected wind turbines are now operating at reduced power levels to lower the sound level.

"CMS energy has no one to blame but themselves," said Kevon Martis, director of the Interstate Informed Citizens Coalition, a non-profit organization that is concerned about the construction of wind turbines in the region. "The citizens living inside Lake Winds wind plant paid for independent noise studies of the project before it was built. Independent analysis demonstrated that the turbines would not only exceed the noise ordinance as proposed by CMS and adopted by Mason County but that the turbine noise would create widespread complaints and result in legal action by those subjected to this industrial development in a rural environment."

Lake Winds is part of the utility's effort to meet Michigan's renewable energy mandate, which requires that 10 percent of the state's energy be produced by in-state renewable sources by 2015. Though the mandate was ostensibly aimed at reducing carbon emissions, the 2008 law did not require that emissions be monitored to measure the mandate's actual impact.

"This should be a warning that there is a price to be paid for ignoring the clear acoustical science that predicted this social disaster long before the first shovel of dirt was ever turned," Martis said.

7

PRINT THIS · CLOSE WINDOW

12/30/14

SHARE

Minwind declares bankruptcy; local losses roughly $5.5 million

By Lori Sorenson

Bankruptcy proceedings are underway for Minwind and its shareholders following last week's emergency meeting.

"Members voted to go forward with bankruptcy, and we're not happy about it at all," said Minwind CEO Mark Willers. "Now where we're at is the board is just doing what the attorneys tell us to do."

And that includes not making statements to the press.

Willers apologized and said he'd like to provide more background, but legal proceedings prevent him from doing so.

In a Dec. 15 interview with the Star Herald, Willers pointed to federal regulations requiring expensive compliance filing and costly structural damage from the April 2013 ice storm.

"There are some new federal regulations for the operation of all energy generation," Willers said. "And the fee is in the millions."

The changes are coming from the Federal Energy Regulatory Commission, an agency set up to protect consumers from unfair energy policies.

Further driving discussion is Alliant Energy's proposed sale of its southern Minnesota transmission lines, which carry Minwind power.

Alliant has the current power contract for energy produced by Minwind's Hills towers, but that contract expires in 18 months and the buyers of Alliant's transmission lines won't be obligated to contract for energy from Minwind.

So, Willers said, it's difficult to run a company not knowing what the rules will be or who the players in the game will be.

"How do we make decisions amid the unknowns?" Willers said.

He said Minwind Companies have enjoyed relative prosperity in recent years, but the April ice storm last year took a toll on equipment — and on the budget.

"We were 200 to 300 percent over budget to make those repairs," Willers said.

The turbines themselves have long-term contracts with energy companies, so Willers said the blades will likely continue spinning, regardless of the outcome of Wednesday's meeting.

Those with the most at stake are the 300-some shareholders with financial interest in the company.

Since the Dec. 17 meeting, some of those shareholders are now questioning the management of Minwind Energy, which manages the projects.

Some wonder if the turbines were insured for damages caused by the ice storm, and where the profits from their investments have gone.

It's estimated that 300 local shareholders stand to lose as much as $5.5 million in the Minwind bankruptcy.

On the public side, losses to tax payers may be measured in terms of grants and loans.

A USDA Rural Business-Cooperative Service grant provided $180,000 per turbine under the Renewable Energy/Energy Efficiency Program. With the seven turbines, they total $1.25 million in government grants — nearly 10 percent of the project startup costs.

FS 6

Owners of two Minnesota wind farms file for bankruptcy court protection

- Article by: DAVID SHAFFER , Star Tribune
- Updated: January 7, 2015 - 9:21 PM

The filing raises questions about whether small-scale projects can survive in the industry.

Power to people on the prairie — it's the idea, born in Minnesota, that farmers should own some of the wind turbines spinning above their fields.

But that idea has turned into a financial loser for about 360 farmers and other landowners who invested in two small wind farms more than a decade ago near Luverne, Minn., in the windy southwest corner of the state.

The companies that collectively own the two Minwind Energy projects filed for reorganization this week in U.S. Bankruptcy Court in Minnesota. The owners stand to lose their investment, and the wind farms eventually may have to shut down, according to regulatory filings.

It is the first of the state's approximately 100 operating wind power projects to seek bankruptcy protection, and the case is raising questions about whether the small-scale wind farm model still works in an era of ever-larger wind-generating projects.

"The wind business is not for the faint of heart," Beth Soholt, director of the St. Paul-based trade group Wind on the Wires, said in an interview. "These are big energy facilities ... It is a long-term contract with utilities that expect you to produce. A lot of things can go wrong."

The Minwind wind farms, with 11 turbines that went on line in 2002 and 2004, made a profit until 2012, and are still operating, according to its financial reports. The electricity is sold to Minneapolis-based Xcel Energy and Cedar Rapids, Iowa-based Alliant Energy under long-term deals. Some of Minwind's power is fed into a giant battery built by Xcel near Luverne to store electricity for when the wind doesn't blow.

Minwind has told federal regulators that the turbines have needed extensive repairs, including main bearings, and the company no longer can afford the upkeep. To make things worse, Minwind got into a jam with the Federal Energy Regulatory Commission for not filing certain paperwork since 2006. The result is a $1.9 million regulatory liability that has left a potential buyer uneasy about signing a deal to acquire the wind farms.

Minwind's attorneys have told the government that the owners were "unsophisticated" in regulatory matters, and should be excused from the filing lapse. Some of the owners also had invested in the former Agri-Energy ethanol plant in Luverne, which was sold in 2010 to another biofuel company.

"None of the owners has had any experience in the power sector, except through ownership and operation of the facilities," the company's Washington-based legal team led by Margaret Moore said in a regulatory filing.

But federal regulators didn't buy the lack-of-sophistication argument. Indeed, the company led by President Mark Willers, Luverne businessman and farmer, has long been credited with creating an innovative business structure with nine separate limited-liability companies allowing investors to take advantage of federal wind energy tax credits, a now-discontinued state assistance program for small wind projects and USDA grants.

Willers declined to comment in detail, but acknowledged that the company was tripped up by a rule change that FERC made eight years ago — a time when the company didn't have a Washington attorney on retainer to watch for such things.

/E PULSE: WEST VIRGINIA

'irginia State Del. Joshua Nelson (R-Boone) is serv-in West Virginia's House of Delegates. Nelson serves rnment Organization, Industry and Labor, and Vet-ittee.

:d House Bill 2004 s Department of , commonly called :e implementation vith the U.S. Envi-ncy's Clean Power :ed to the legisla-vas the motivation

clean power plant overreach of the ecting West Virgin-is a top priority of nd livelihoods mat-be able to legislate oversight.

y protection in our Vest Virginia DEP without our input. o Congress as well. lowe legislate. ob of legislative

lso recently enacted 's renewable power s Board of Educa-her states allowing oth sides of the cli-at do you think of

/ debate should be n one side starts to usually an ulterior

state's renewable free market should e use for energy. current] U.S. Sena-ocrat, was trying to ministration on this ieve his intentions a potential decline mix, dropping by at y you look at it, this ners ld lose jobs.

ıvironmental issues rel are you tracking?

"Whenever and wherever we can fight for free-market principles, you will find me and other like-minded West Virginia legislators doing so."

Nelson: We are always tracking new legislation coming out of Washington, DC as well as bills from anti-free market legislators coming out of Charleston. Wherever we can fight for free-market principles, you will find me and other like-minded West Virginia legislators doing so.

H. Sterling Burnett **(hsburnett@heartland.org)** *is managing editor of* Environment & Climate News.

Under Fire for Huge Costs

Continued from page 1

freeze its RPS in 2014, and West Virginia repealed its mandates altogether earlier in 2015.

"This is a bad time to be in the renewable energy industry," said Marita Noon, executive director of Energy Makes America Great. "In addition to laws enacted in Ohio and West Virginia trimming renewable power's legislated advantage, ethanol mandates have also fallen from favor at the federal level, and biofuel companies, according to *The Economist,* are starting to give up."

In 2007, North Carolina became the first state in its region to enact an RPS. Under that law, investor-owned utilities in the state must provide up to 12.5 percent of their energy through renewable resources or energy efficiency measures by 2021.

A March study from the Institute for Political Economy at Utah State University found North Carolinians received an estimated $14.4 billion less in real personal income in 2013 than they would have without the renewable energy mandates. Because real personal income has fallen an average of nearly 4 percent cumulatively in states with renewable power mandates, a family in North Carolina made $3,870 less in 2013 alone, the study says.

"In addition, RPS states have seen a drop in industrial electricity sales of almost 14 percent and have experienced an overall increase of almost 10 percent to their state's unemployment rate," the study states. "This means that there were 23,769 fewer jobs in North Carolina at the end of 2014 than there would have been without government mandates for renewable electricity."

Kansas also adopted renewable power mandates that have proven to be harmful. Kansas's 2009 RPS requires at least 10 percent of electricity-generating capacity in the state come from renewable sources, with the percentage slated to rise to 15 percent in 2016 and 20 percent in 2020.

The same Utah State University team of researchers analyzed the effects of Kansas's RPS and found negative impacts similar to those in North Carolina. The study reports, "Kansas electricity rate payers will face $171 million in elevated electricity costs beyond what they would have paid in the absence of an RPS. In addition, RPS will cause ... the loss of 795 jobs, a decrease in investment of $14 million, and a decrease in personal disposable income of $72 million in 2020 alone."

"These recent studies, using sophisticated economic techniques, provide further evidence our basic intuition on RPS is correct. [They force] people to use expensive, unreliable sources of electricity like wind and solar [that increase] the cost of power," said Dan Simmons, vice president for policy at the Institute for Energy Research. "These studies should erase all doubt about how harmful RPS mandates are."

Bonner R. Cohen, Ph.D. **(bcohen@nationalcenter.org)** *is a senior fellow at the National Center for Public Policy Research.*

INTERNET INFO

Randy Simmons, *et al.*, "Renewable Portfolio Standards: Kansas," March 10, 2015: **https://www.heartland.org/policy-documents/renewable-portfolio-standards-kansas**

Randy Simmons, *et al.*, "Renewable Portfolio Standards: North Carolina," March 10, 2015: **https://www.heartland.org/policy-documents/renewable-portfolio-standards-north-carolina**

FS7

Michigan wind developer faces lawsuit over U.P. project

Posted on 01/26/2015 by Andy Balaskovitz

In a small community on the southern coast of Michigan's Upper Peninsula, a 28 MW wind farm remains a focus of dispute among landowners, some of whom are bringing the developer into yet another lawsuit over claims about noise.

Traverse City-based Heritage Sustainable Energy's wind project in Garden Township, along with the U.S. Fish and Wildlife Service, is the subject of a lawsuit filed this month in federal court in Marquette. It's the second suit against the company in a year.

Heritage settled a case out of court over six months ago when residents near its Stoney Corners Wind Farm in the Lower Peninsula alleged it was causing health problems.

The 14-turbine Garden Wind Farm, located west of Escanaba, became operational in September 2012 and was the first wind project in the U.P.

A company official, who claimed he first heard of the lawsuit when contacted by the Associated Press last week, said Heritage has been working with local residents over noise concerns. In an interview, he disputed claims made in the lawsuit over the project's threat to migratory and endangered bird species, based on studies to be released in the coming months. He said that the company had not been served with any legal documents pertaining to the suit as of Thursday night.

"We're trying to work through issues with those who have some annoyance with sound and shadow flicker," said Rick Wilson, Heritage's vice president of operations. "We think we can work with them to resolve the issues."

However, the lawsuit claims that nearby residents have endured disruptive noise and decreased property values since the project became operational, contrary to what the company had told them initially.

"Heritage, through the construction and operation of the Heritage Wind Farm, will continue to unreasonably harm the Individual Plaintiffs, their lessees and guests by subjecting them to disturbing and incessant noise, vibrations, shadow flicker/strobe lighting, and flashing red lights which has caused nausea, headaches, sleep deprivation, vertigo, dizziness, anxiety, and diminution of property values," the suit says. Building near the citizens' properties was "intentional and unreasonable, negligent, and reckless," the suit claims.

Further development at the site, the suit adds, will cause increased "takes" of species like the Kirtland's Warbler, piping plover, Northern long-eared bat and bald eagle.

"Hence, Heritage's activities and (U.S. Fish and Wildlife Service's) failure to properly regulate those activities will make it more difficult for plaintiffs to observe and enjoy these species and to enjoy the benefits of the species," the suit says. Landowners are being represented by Topp Law in Gaylord, which specializes in energy and environmental litigation.

The citizens also allege that Heritage's activities are violating the Michigan Environmental Protection Act. The plaintiffs are seeking a temporary restraining order or injunction against Heritage's expanding, as well as compensation for legal and other fees.

Wilson said the company has been working with the U.S. Fish and Wildlife Service since 2007 over concerns the department raised over bird species, some of which are endangered. He said results from the latest scientific studies over bird deaths will be released to the public "within the next several months."

FS 8

"There is no correlation between the relationship with the wind farm and the shoreline and any potential increase in fatalities," he said. "Our 14 turbines kill no more birds than a single feral cat. We're looking to be somewhere in the range of three to four birds per turbine, per year."

The development in question is known as phase I of Garden Wind Farm, and the company had tentative plans for two more phases.

"We have what we think are opportunities to build more but we don't have immediate plans to expand that project at this moment," Wilson said. "It's a matter of a power purchase agreement and the current economic climate right now."

'Very controversial. Very controversial.'

Since its beginning, the project has divided the small community of roughly 1,000, according to Garden Township Supervisor Raymond Young. It's a picturesque landscape on Big Bay De Noc in northern Lake Michigan, with the turbines situated mostly on an area of flat farmland.

"Very controversial. Very controversial," Young repeated by phone last week. "I don't care how you look at it, they're noisy. That's where the whole complaint comes from — people can't get a good night's sleep. I'm not taking a side, but the complaints I get, which are numerous, are all about noise."

Recent research has failed to find direct link between human health and wind turbines, though there are connections between exposure to noise and annoyance. The American Wind Energy Association says "allegations of health-related impacts are not supported by science."

Researchers have also found no statistical evidence that wind turbines impact property values in general, but the lawsuit says county officials have already lowered assessed values on some properties because of "proximity to [a] wind energy device."

"It's important to keep in mind that there are no free rides," said John Anderson, director of environmental affairs and permitting policy for the AWEA, referring to the trend of litigation nationwide challenging turbines' affect on lifestyles. "Our society is power hungry and requires a huge amount of energy to operate as a modern society. No form of energy is free of impact, and wind power is no exception, but studies show wind power impacts to be the lowest.

"There is always going to be someone who feels negatively affected. We can't have a society dictated by a few loud opponents."

Heritage is also playing offense in the courtroom, having filed suit against nearby Schoolcraft County this month over what it claims is an overly restrictive zoning ordinance against wind development.

Young took office shortly after the project began operations. "I can say that (Heritage) made promises they didn't keep, according to the people I get complaints from," he said. The township recently passed an ordinance that would use police powers to limit the noise between 10 p.m. and 6 a.m., Young added.

The project has been so controversial — in a familiar case of pitting those benefitting from leasing land to those with aesthetic and other concerns — that local sheriff's deputies had to start coming to public meetings, he said.

"Relatives aren't speaking to each other. People I've known 40 years won't talk to me," Young said. "We have divided this community between those who are leasing and those that aren't and don't like the noise."

Ohio Sen. Bill Seitz, seen in this 2011 file photo, has tried for several years to weaken the state's renewable energy laws. (Associated Press)

State lawmaker part of effort to stop Ohio wind project

Kathiann M. Kowalski | 04/27/2015

An effort by opponents to stop a proposed Ohio wind farm, which includes a legally questionable maneuver to prevent property owners from granting variances, has the support of the state legislature's most outspoken critic of renewable energy.

Greenwich Windpark, one of the few wind energy projects moving forward in Ohio, was approved by the state Power Siting Board in August. However, opponents, along with state Sen. William Seitz, have requested a rehearing and want to apply stricter rules than those that were in effect when the Siting Board ruled last summer.

Earlier this month, Seitz provided *Midwest Energy News* with materials from Greenwich Neighbors United (GNU) in Huron County as an example of "the efforts of local folks...to fight 'Big Green Wind.'"

The 60-page packet, consisting of a memorandum and numerous newspaper clippings, was also filed (https://dis.puc.state.oh.us/CaseRecord.aspx?Caseno=13-0990&link=COM) last week in a case in which the group wants the Ohio Power Siting Board to reverse its approval of a 25-turbine wind farm (http://www.windlab.com/projects/greenwich) in Huron County.

The Greenwich project is "one of the smaller wind farms that have been approved by the Power Siting Board," said Sally Bloomfield, counsel for the project's owner, 6011 Greenwich Windpark, LLC.

Seitz (http://e67ti2w9ws71al8xmnhsozd3.wpengine.netdna-cdn.com/files/2015/04/BigWindSeitzEmailToOPSB082014.pdf), as well as other (http://e67ti2w9ws71al8xmnhsozd3.wpengine.netdna-cdn.com/files/2015/04/BigWindSkindellReferencingSeitzEmail.pdf) lawmakers (http://e67ti2w9ws71al8xmnhsozd3.wpengine.netdna-cdn.com/files/2015/04/BigWndBooseToOPSB0814.pdf), contacted (http://e67ti2w9ws71al8xmnhsozd3.wpengine.netdna-cdn.com/files/2015/04/BigWindSeitzEmailToOPSB082014.pdf) the Siting Board by email last August in support of a new public hearing in the case.

FS 10

Seitz claimed that one of the earlier evening hearings in May was inconvenient for farmers. "In addition, the neighbors need to understand the ramifications of recently-enacted legislation such as SB 310 (http://www.midwestenergynews.com/2014/06/05/ohio-legislature-and-lawsuit-raise-doubts-for-the-future/) and the wind farm setback changes" in HB 483 (http://www.midwestenergynews.com/2014/06/19/industry-setback-changes-will-end-new-wind-farms-in-ohio/), Seitz wrote.

While both laws were passed earlier in the year, neither was in effect yet when the Siting Board issued its ruling in August granting the 2013 application from Greenwich Windpark.

SB 310 (http://www.midwestenergynews.com/2015/01/22/drops-in-ohio-clean-energy-investment-could-hurt-jobs-growth/), co-sponsored by Seitz, scaled back Ohio's renewable energy and energy efficiency standards and froze any increases in their benchmarks for two years. The law also established the Energy Mandates Study Committee (http://www.midwestenergynews.com/2015/04/14/advocates-hope-ohio-energy-committee-will-broaden-focus/), on which Seitz sits.

HB 483 (http://www.midwestenergynews.com/2014/06/19/industry-setback-changes-will-end-new-wind-farms-in-ohio/) tripled property line setbacks for turbines on commercial farms that did not already have permits. Seitz spoke passionately against wind energy in the few minutes of public debate before that last-minute provision passed last year.

The day after Seitz's email, a "late-filed (https://dis.puc.state.oh.us/CaseRecord.aspx?Caseno=13-0990&link=DI)" motion to intervene with a request for new hearing was filed by attorney Sam Randazzo on behalf of Omega Crop Co. Omega's owners, Gerald and Connie Oney, are GNU members, according to the materials filed last week.

Some points in Randazzo's brief for Omega are similar to those in Seitz's email. Randazzo is general counsel for Industrial Energy Users—Ohio (http://www.ieu-ohio.org/about_us.aspx). Like Seitz, he has advocated (http://e67ti2w9ws71al8xmnhsozd3.wpengine.netdna-cdn.com/files/2015/04/randazzotestimonySB58.pdf) scaling back (http://www.midwestenergynews.com/2014/04/02/ohio-renewable-energy-and-energy-efficiency-standards-face-multi-front-attacks/) the state's renewable energy and energy efficiency standards.

Greenwich Windpark opposed (https://dis.puc.state.oh.us/CaseRecord.aspx?Caseno=13-0990&link=DI) the motion, noting that the record had been closed and the Siting Board was already scheduled to rule on the case in less than two days.

Moreover, the brief noted, Greenwich Windpark had mailed out notices to Omega and various other property owners several months earlier. Several hearings had been held in the community as well.

The case record also includes multiple comments from Oney and Kevin Ledet, chairperson of GNU. Those comments became part of the case file for consideration by the Siting Board.

"We got on board sometime around June of 2014," Ledet explained. "It was even after [the Siting Board] had their public meeting in Greenwich," Ohio.

"Originally most of the opposition thought these turbines were just small unimposing things," Ledet said. It "didn't register" how big the turbines would be.

Nonetheless, a sign-in sheet for a May 22, 2013 community meeting shows that Omega owner Gerald Oney attended.

Also, Bloomfield noted, the Ohio Farm Bureau Federation was a party in the case. That organization often intervenes in wind energy cases to represent farmers' interests, she said. "They bring matters to our attention that we might not have known about but for them."

On August 25, the Siting Board denied the late-filed motion and ruled in favor of Greenwich Windpark's application.

Randazzo filed a motion for rehearing on September 23. On October 22, administrative law judge Greta See issued an order "to afford the Board additional time to consider the issues."

'Our property rights'

That ruling was not a decision on the merits, explained Bloomfield. Rather, it was for the "limited purpose" of giving the Siting Board more time for the motion.

Although the case remains open, Bloomfield stressed that the Siting Board granted Greenwich Windpark a certificate. The company has begun to comply with some of its conditions, she added.

Meanwhile, in a pending rulemaking proceeding, GNU is urging the Siting Board to change its rules so that any adjacent property owner could prevent a waiver by another property owner, even if the waiver would not affect the person objecting to it.

"I believe it says all adjacent property owners to that wind farm have to sign waivers" for a setback or any other variance, maintained Ledet. "I think that's something that's going to have to be battled out in court."

"We want to make sure the Ohio Power Siting Board is doing what the Ohio Power Siting Board should be doing for the citizens of Ohio," Ledet also said. "Are they concerned about our safety and our welfare and our property rights?"

Ledet added that while his land does border a property where wind turbines will be, the closest would be "roughly half a mile" to the south. That's farther than even HB 483 would have required.

Bloomfield said that if GNU's interpretation were adopted, it would be a marked departure from prior law and practice. In the past, the Siting Board has consistently interpreted the law to say that any waiver "has to be granted by the people who were affected" by it, she explained.

A different result could raise constitutional problems, Bloomfield added. Among other things, it would be "an unfair taking of your property, in effect, by people who have nothing to do with it," she said. "People three miles away could have a say over what you do with your property."

Applying that interpretation to Greenwich Windfarm could also raise questions about retroactive rulemaking and other issues.

'Ground to a halt'

Ledet said GNU is also trying to reach out to other communities "to help other people that are going to be facing the same onslaught" from wind farms.

For the time being, though, SB 310 and HB 483 have apparently put the brakes on most in-state wind development.

"The wind industry has kind of ground to a halt in Ohio," Bloomfield said. Greenwich Windpark is the exception, rather than the rule.

Indeed, a January 2015 report from Pew Charitable Trusts projected a plunge (http://www.midwestenergynews.com/2015/01/22/drops-in-ohio-clean-energy-investment-could-hurt-jobs-growth/) in investment in Ohio's wind energy from more than half a billion dollars in 2012 to essentially nothing through 2016.

Moreover, advocates have said, the Energy Mandates Study Committee testimony has so far focused on factors against (http://www.midwestenergynews.com/2015/04/14/advocates-hope-ohio-energy-committee-will-broaden-focus/) wind and other forms of renewable energy. Critics (http://www.midwestenergynews.com/2015/04/14/advocates-hope-ohio-energy-committee-will-broaden-focus/) have said they hope that will change.

"Too often the press are complicit in presenting an unduly rosy picture of 'green energy,'" Seitz said in his email providing the GNU packet about the Greenwich Windpark case. "Both sides deserve a hearing and equal publicity."

FS 11

PROPERTY DEVALUATION

Below is an e mail from a bank in southeastern South Dakota that I do several appraisals for every year. This particular appraisal **of bare land** addressed in this e mail was a FMAC "Farmer Mac" guaranteed loan. I have to keep the bank and client confidential, but the land was within an hour from my house. According to the way I read it, Farmer Mac assumes there is a detrimental effect on the value of land if there is a wind lease. There isn't a wind farm within 50 miles of this land, but the detrimental effect is just on the fact there is a written lease (and easements) on the property. This should make anyone who signed a lease wonder about future borrowing ability as well as the fact of "Will the revenue from the turbine be more than the devaluation of my land OR LESS?"

Good Morning Gregg -

We received the following notification from FMAC regarding the title report:

The preliminary title report notes there is a wind lease on the property. Please have the appraiser verify if he was aware of this wind lease. If the appraiser was aware of the wind lease, does the final appraised value represent the detrimental effect of the wind lease, on the property value, if any. If the appraiser was not aware of the wind lease please have him comment if the wind lease has a detrimental effect on the value of the property. If he finds it does have a detrimental effect on the property, please have him adjust his final value accordingly and provide support.

Can you please address this and send back to me?

Thank you!!

[redacted] Sat, Aug 15, 2015 at 8:16 AM
To: "gregghubner@gmail.com" <gregghubner@gmail.com>

GREG. YOUR ZONING PEOPLE ARE VERY UNIFORMED. THEY NEED TO VISIT SITES WHERE WINDTOWER ARE 2000FT AWAY LET ALONE 1000 . CURRENT ZONING REGULATIONS IN ANTELOPE COUNTY NE ARE 1000 FT AWAY. THAT WAS USED IN PHASE 1 TWO YEARS AGO AND IT IS A DISASTER. LAST YEAR PHASE 2 PASSED WITH A 2000 FT SET BACK WHICH IS NOT NEAR ENOUGH. WE ARE ASKING FOR A MILE SET-BACK IN PHASE 3 AND IT IS STRONGLY BEING CONSIDERED. HOLT COUNTY , JUST TO THE WEST HAS SET THEIR SET-BACKS AT ½ MILE. WHEELER COUNTY TO THE SOUTHWEST HAS TENTIVELY SET THEIR SET-BACK AT 2500 FT. STATES BACK EAST HAVE STATE REGULATED SET BACKS AT 1-1.5 MILES.THIS IS A VERY SERIOUS ISSUE BECAUSE ONCE THE TOWERS ARE ALLOWED TO BE BUILT THERE IS NO MOVING THEM. PLEASE TELL YOUR ZONING PEOPLE TO RESEARCH THIS MUCH MORE BEFORE THEY ALLOW THIS TO HAPPEN. IF THEY WANT MORE TESTIMONY PLEASE HAVE THEM CONTACT ME. 1000 FT SET-BACKS HAVE RUINED THE QUALITY OF LIFE IN MANY RURAL ANTELOPE COUNTY HOMES. THEY WILL NOT PUT TOWERS WITHIN A MILE OF A CITY OR TOWN, WHY SHOULD THEY BE ALLOWED TO PUT THEM WITHIN A MILE OF OUR HOMES ??? GARY BORER

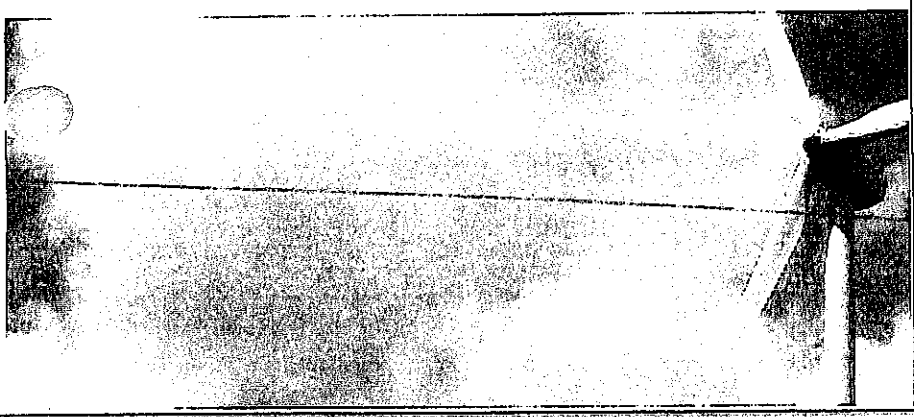
From: Gregg Hubner [mailto:gregghubner@gmail.com]
Sent: Friday, August 14, 2015 3:12 PM
To: [redacted]
Subject: Bon Homme County suggested Zoning for wind turbine setbacks

---

Gary Borer <gborer@kaytonint.com> Sat, Aug 15, 2015 at 11:22 AM
To: "avonclarion@hotmail.com" <avonclarion@hotmail.com>
Cc: Gregg Hubner <gregghubner@gmail.com>

DEAR EDITOR IN ANTELOPE COUNTY IN NORTHEAST NE, TWO YEARS AGO IN 2013. WIND TOWERS WERE ALLOWED TO BE CONSTRUCTED WITH A 1000 FT SET-BACKFROM HOUSES IN PHASE 1. THIS DID NOT TURN OUT VERY WELL DUE TO EXCCESIVE NOICE. IN 2014 IN THE SAME AREA, PHASE 11 WAS ALLOWED WITH SET-BACKS OF 2000 FT FROM HOUSES. IN THE NEXT PART OF THE PROJECT WE ARE ASKING FOR I MILE SET BACKS FROM HOUSES. WEST OF US IN HOLT COUNTY THEY ARE USING SET- BACKS OF ONE HALF A MILE. SOUTH WEST OF US IN WHEELER COUNTY THEY ARE CONSIDERING SET- BACKS OF 2500 FT. EASTERN STATES ARE USING STATE REGULATED SET BACKS OF 1 MILE. YOU DO NOT SEE WINDTOWERS WITHIN A MILE OF CITIES OR TOWNS. WHY SHOULD OUR RURAL FARM RESIDENTS BE TREATED ANY DIFFERENTLY??

[redacted]



2009

WIND TURBINE IMPACT STUDY

APPRAISAL GROUP ONE

9/9/2009

PD1

WIND TURBINE IMPACT STUDY

DODGE & FOND DU LAC COUNTIES – WISCONSIN

Preliminary Draft - September 2009

This is a study of the impact that wind turbines have on residential property value. The wind turbines that are the focus of this study are the larger turbines being approximately 389ft tall and producing 1.0+ megawatts each, similar to the one pictured to the right.

The study has been broken into three component parts, each looking at the value impact of the wind turbines from a different perspective. The three parts are: (1) a literature study, which reviews and summarizes what has been published on this matter found in the general media; (2) an opinion survey, which was given to area Realtors to learn their opinions on the impact of wind turbines in their area; and, 3) sales studies, which compared vacant residential lot sales within the wind turbine farm area to comparable sales located outside of the turbine influence.

The sponsor for this study was the Calumet County Citizens for Responsible Energy (CCCRE) (Calumet County, Wisconsin), which contracted our firm, Appraisal Group One, to research the value impact that wind turbines have on property value. Appraisal Group One (AGO) protected against outside influence from CCCRE by having complete independence to the gathering of facts, data and other related material and the interpretation of this data to the purpose of this study. AGO chose the location of the study, the search parameters, the methodology used and the three-step approach to the study. AGO does not enter into any contract that would espouse any preconceived notion or have a bias as to the direction of the study and its findings. The purpose of the study was to investigate the value impacts of large wind turbines, the issues influencing these impacts and to report these findings on an impartial basis.

AGO is an appraisal company specializing in forensic appraisal, eminent domain, stigmatized properties and valuation research. This company is located in Oshkosh, Wisconsin,

and provides appraisal services throughout the State of Wisconsin. In addition, AGO provides forensic appraisal services, valuation consulting and research outside of the state. Recent projects were completed in Ohio, Indiana, Illinois and Michigan.

The geographic area of this study was focused in Dodge and Fond du Lac Counties. These two counties have three large wind farms. They are:

WE Energies - Blue Sky Green Field wind farm which has approximately 88 wind turbines and is located in the northeast section of Fond du Lac County, bordering Calumet County to the north.

Invenergy - Forward wind farm which has approximately 86 wind turbines and is located in southwest Fond du Lac County and northeast Dodge County.

Alliant - Cedar Ridge wind farm which has approximately 41 wind turbines and is located in the southeastern part of Fond du Lac County.

Of these three wind farms, only the WE Energies and Invenergy wind farms were used in the sales study since the Alliant – Cedar Ridge wind farm did not have enough viable sales within the turbine influence area to use as a base of comparison. The Realtor survey was limited to Fond du Lac and Dodge Counties, that being the area which had the three wind farms. The literature study was not limited geographically.

The balance of this report follows this introduction. The conclusions drawn at the end of each section are based on the data we collected and analyzed and are the sole possession of Appraisal Group One.

Submitted on September 9th, 2009, by:

Kurt C. Kielisch, ASA, IFAS, SR/WA, R/W-AC

President/ Senior Appraiser

Appraisal Group One

www.forensic-appraisal.com

p d2

WIND TURBINE IMPACT – REALTOR SURVEY

The purpose of the Realtor survey was to learn from the people who are on the first tier of the buying and selling of real estate what they thought of wind turbines and their impact to residential property value. This survey was designed to measure what type of impact (positive, negative or no impact) that wind turbines have on vacant residential land and improved property. The questions were designed to measure three different visual field proximity situations to wind turbines. These three were **bordering** proximity (defined as 600ft from the turbine), **close** proximity (defined as 1,000ft from the turbine) and **near** proximity (defined as ½ mile from the wind turbines). In all situations the wind turbines were visible from the property. Graphics and photographs were utilized to illustrate each question so the survey taker would have the same or similar understanding as others on each question. In addition to asking the Realtor about the type of impact they expected in each situation, the survey then asked them to estimate the percentage of the impact. Though it is understood that Realtors are salespeople and not appraisers, it is also true that they often have to estimate asking prices for their clients or act in the capacity of a buying agent for a client. Both situations demand an estimate of value and recognition of those factors that both benefit and detract from value.

The geographic area for selection of the survey participants was defined by the wind farm projects. These projects were in Fond du Lac and Dodge Counties, Wisconsin.

The Scope of Work (SOW) that was followed in the development, implementation and recording of this survey was as follows:

1. Outline the purpose of the questions and determine what is to be measured and what information is needed to have an informative survey free of any suggested bias.
2. Create a Beta version of the survey and have it tested by ten Realtors outside of the projected survey area.
3. Once the Beta testing and revisions were completed, then print the final version of the survey.
4. Realtor offices were presented with the survey and participants were offered a fee for taking the survey. (interestingly, some declined the fee.)
5. All surveys were given in person. No surveys were giving orally nor via the Internet.
6. Once the surveys were completed the survey presenter signed and dated the survey.
7. All surveys were reviewed for errors and those that were found in error, e.g. giving multiple answers to a question when only one was allowed, were then rejected and saved with the reason for its rejection.
8. The survey results were tabulated and presented in a spreadsheet format.

9. From the spreadsheet the results were presented graphically for ease of understanding.
10. A summary of the findings and a conclusion was then completed and included in this report.

Following is: (a) a copy of the survey that was hand delivered to each survey participant and (b) graphic presentation of the tabulated results from the survey.

Summary of Findings & Conclusion of Impact

The survey indicated that in all but two scenarios (those being Questions #8 and #9), over 60% the participants thought that the presence of the wind turbines had a negative impact on property value. This was true with vacant land and improved land. Where the group diverted from that opinion is when they were presented with a 10-20 acre hobby farm being in *close* and *near* proximity. In these cases 47% (close proximity) and 44% (near proximity) of the participants felt that the wind turbines caused a negative impact in property value.

The answers showed that *bordering* proximity showed the greatest loss of value at -43% for 1-5 acre vacant land and -39% for improved properties. Next in line was the *close* proximity showing a -36% value loss for 1-5 acre vacant land and -33% for improved property. Last in line was the *near* proximity, showing a -29% loss of value for a 1-5 acre vacant parcel and -24% loss in value for improved parcels. These losses show a close relationship between vacant land and improved land. This pattern was replicated regarding the *bordering* proximity for a hobby farm, whereas 70% believed it would be negatively impacted. Lastly, the opinions regarding the impact of the wind turbines due to placement, that being in front of the residence or behind the residence, showed that in both situations most participants believed there would a negative impact (74% said negative to the front placement and 71% said negative to the rear placement).

In conclusion, it can be observed that: (a) in all cases with a 1-5 acre residential property, whether vacant or improved, there will be a negative impact in property value; (b) with 1-5 acre properties the negative impact in property value in *bordering* proximity ranged from -39% to -43%; (c) with 1-5 acre properties the negative impact in property value in *close* proximity ranged from -33% to -36%; (d) with 1-5 acre properties the negative impact in property value in *near* proximity ranged from -24% to -29%; (e) in all cases the estimated loss of value between the vacant land and improved property was close, however the vacant land estimates were always higher by a few percentage points; (f) it appears that hobby farm use on larger parcels would have lesser sensitivity to the proximity of wind turbines than single family land use; and (g) placement either in front or at the rear of a residence has similar negative impacts.

pd3

PROPERTY VALUE IMPACT & ZONING EVALUATION

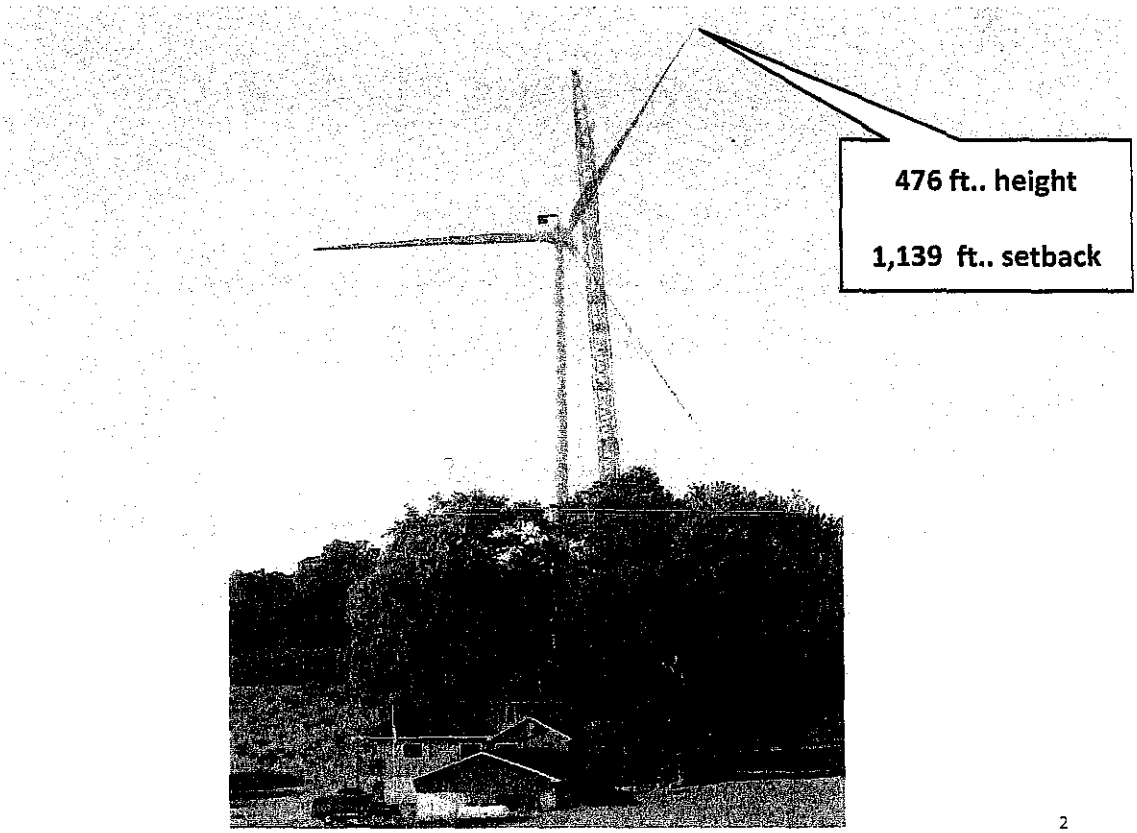
Industrial Scale Wind Energy
Mason County, Kentucky

- Requested by -

Citizens Voice of Mason County

McCann Appraisal & Consulting, LLC

May 12, 2014



Pd 4

Value Loss – Cause?

- Detrimental Condition
- Impairment of quiet use and enjoyment
- Bona fide nuisances & health impacts
- Aesthetics
- Stigma – "Market Resistance"
- Any trespass or intrusion of excessive noise, contaminants, odor, vibration, glare, flicker or other physical impacts into, through or over neighboring property

Property Value Studies

Independent
McCann & other independent professional appraisers

Industry
Academic Institutions funded by USDOE and wind energy developers

McCann 2012 Study
Lee & DeKalb Counties

- Detailed Paired Sales analysis
- Target & Control sale data selected on basis of sales near turbines (Target) being paired with comparable sales (Control) at much greater distances
- Target sales average distance = 2,618 feet
- Control sales average distance = 10.1 miles
- Current empirical data finds 23% to 33% (**avg. 26%**) impact from inadequate setbacks

16

Related Study Results

- CDOM is 1 year longer near turbines
- Sale Price as a % of list price is 70.6% near vs. 91% far from turbines
- DeKalb FPL turbines are larger and nearer Target residential sales, on average, and empirical appraisal results find greater impact with shorter Setbacks
- LBNL & Hinman claim that values "rebound" is false. McCann 2003-2005 & 2012 study periods in Lee County find consistent long term value impairment

19

pd5

Summary
Wind Turbine - Property Value Impact Studies

Independent Studies

Author	Type	Year	Location	Method	Distance	Impact %
Lansink	Appraiser	2012	Ontario	Resale (1)	< 2 miles	(39%) Avg. 23%-59%
Sunak	Academic RWTH Aachen University	2012	Rheine & Neuenkirchen	OLS Geographic Weighted Regression (2)	2 Km	(25%)
Heintzelman Tuttle	Academic Clarkson University	2011	Upstate NY	Regression Resale & Census Block	1/10 to 3 miles	Varies to > (45%)
McCann	Appraiser	2009 -2013	Illinois, (3) MI, MA, WI, OH	Paired Sales & resale	< 2 miles	(25%) 20% - 40%
Gardner	Appraiser	2009	Texas	Paired Sales	1.8 miles	(25%)
Kielisch	Appraiser	2009	Wisconsin (4)	Regression & Survey	Visible vs. not visible	(30-40%) (24-39%)
Luxemburger	Broker	2007	Ontario	Paired Sales	3 NM	(15%) $48,000
Lincoln Twp.	Committee (5)	2000-2002	Wisconsin	AV ratio 104% v. 76%	1 mile	(28%)

Wind Industry Funded Studies

Canning & Simmons	Appraisers (CANWEA)	2010	Ontario	Regression Paired Sales	Viewshed (6)	(7%-13%) (9%) No SS
Hinman	Academic ISU - REP Student thesis	2010	Illinois	Pooled Regression Realtor survey	3 miles ½ mile	No SS (11.8%) (7)
Hoen	USDOE funded LBNL	2009	9 states	Pooled regression	5 miles 3k ft – 1 mile	No SS (5.6%) (8)

Footnotes:

(1) Lansink Resale study uses resales from developer to private buyers. with Easement in Gross condition of sale. Buyer accepts noise impacts. etc.. waives liability
(2) Lots only. No pooling of data
(3) McCann Illinois study & research updated. multiple states
(4) Kielisch regression lot sales: Realtor survey residential
(5) Committee compared actual sale prices vs. AV and found homes up to 1 mile sold @ 76% of AV. and > 1 mile @ 104% of AV
(6) Usually cited as being a study that found no impact. However. all methods used yielded negative numeric indication. Author concludes no statistical significance.
(7) Cites Realtor who believes no impact on value > 3 miles. Concludes some results indicate "wind farm anticipation stigma" (11.8%)/Pg.55. Author states "the results neither support nor reject the existence of a wind farm nuisance stigma after the wind farm achieved commercial operation.....likely due to only 11 properties selling during operations within 1 mile of wind farm." Good neighbor payments to some nearby neighbors. Values near wind farm appreciated $13,524 after operation. following $21,916 decline measured under anticipation stigma theory. (Net loss of $8,392 pre- vs. post operation./Pg. 120.
(8) Study excludes developer resales with 36% & 80% discounts from buyout price. Pooled data from 9 states 24 projects insures lack of statistical significance for value loss examples near turbines. Other sales nearby excluded due to deviation too far from mean and resale.

LBNL 8/2013

Value Change -	PA	PC	Difference	
3-10 miles	$100,485	$151,559	$51,074	50.8%
< 1 mi.	$ 84,830	$100,485	$15,655	18.5%

Value change is lower by margin of **32.3%**

- Original LBNL 2009 report excluded resales that showed 36% & 80% value loss. 2013 conclusions similarly not supported by empirical data analysis

29

VALUE IMPACT SUMMARY
MPAC STUDY DATA
(Time Adjusted Sales - Appendix D2)

Setback km	# Sales	Median Sale Price	$ Impact	% Impact
1 or <	279	$171,000	$57,000	25.0%
1 to 3	989	$168,000	$60,000	26.3%
3 to 5	3,063	$180,000	$48,000	21.1%
> 5	37,093	$228,000	**Control Setback**	

32

pd6

Ben Hoen Interview

....You might know about a Property Value Guarantee. It's a dicey situation and complicated, but I think homes that are very close, there is just too much unknown right now, that seems reasonable. I think **one of the things that often happens is that (wind) developers put our report forward and say look property values aren't affected, and that's not what we would say specifically.** On the other hand, they have little ground to stand on if they say we won't guarantee that.

Reported by:
Clif Schneider
April 12, 2010 – *recorded interview available online*

CERTIFICATION

- The undersigned, representing McCANN APPRAISAL & CCONSULTING, LLC, do hereby certify to the best of our knowledge and belief that:
- FIRST: The statements of fact contained in this consulting report are true and correct.
- SECOND: The reported analyses, opinions and conclusions are limited only by the reported assumptions and limiting conditions and represents the personal, impartial and unbiased professional analyses, opinions, and conclusions of the undersigned.
- THIRD: We have no present or prospective interest in the property that is the subject of this report and no personal interest with respect to any of the parties involved.
- FOURTH: We have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.
- FIFTH: Our engagement in this assignment was not contingent upon developing or reporting predetermined results.
- SIXTH: Our compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.
- SEVENTH: Our analysis, opinions, and conclusions were developed, and this report has been prepared in conformity with the Uniform Standards of Professional Appraisal Practice.
- EIGHTH: Prior to testimony, a physical inspection was made by McCann Appraisal, LLC of the property that is the subject of this report. The undersigned also utilized photographs, maps and property record card data for characterizing and understanding the character of the subject property.
- NINTH: No one other than the undersigned provided significant real property appraisal assistance to the person signing this certification.
- TENTH: The undersigned, McCann Appraisal, LLC has not previously consulted and testified regarding the subject property.
- IN WITNESS WHEREOF, THE UNDERSIGNED has caused these statements to be signed and attested to.

Michael S. McCann, CRA
State Certified General Real Estate Appraiser
License No.553.001252 (Expires 9/30/2015)

LETTERS TO THE EDITOR

Letters to the Editor

Dear Jack,

I recently finished reading the book "The Wind Farm Scam" by John Etherington, Ecologist at the University of Wales, who has devoted himself to researching renewable electricity generation, in particular, wind power. Europe has had a longer and more intense experience with wind farms than our country has. Now many countries in Europe including Spain, England, Germany, Portugal and more are realizing that they have made huge mistakes. They spent billions in taxpayer money to ruin the beauty of their countryside and make the electricity rates so high they can't afford them. Here are some excerpts:

"**Enthusiasts** (and lobbyists enriched by subsidies) who have rushed into extensive wind farm developments will be seen in due course to **have taken public opinion for a colossal ride**, although this may take some years to emerge". {Lord David Howell and Dr. Carol Nakhle}

"Statistically the implication is that only a small proportion of the total wind generation can be relied on to be available at any one time, perhaps falling to no more than 4% of installed capacity. So there we have the problem. Would you continue to visit a shop which was often and unpredictably closed and when open could rarely supply you with a desired commodity and at twice the supermarket price? Of course not, and the only way such an establishment could avoid bankruptcy would be legislation to keep it open and a constant drip-feed of cash from another source to cover the losses incurred by the constant closures and repeated failures to supply goods, despite high costs."

"Wind power has been promoted for political/environmental reasons and **wind developers have benefited from substantial subsidies**, leading to exaggerated claims. A reality check is needed."

"Possibly the most publicized case of a wind turbine noise problem in Britain is that of the Davis family of Spalding in Lincolnshire. When the construction of Deeping St. Nicholas wind farm was proposed, just 930 meters from their farmhouse, Julian and Jane Davis initially had no objection. However, after the eight 2.0 MW turbines became operational in summer 2007 the Davis's discovered that pervasive noise was intolerable. 'By May 2007, we **were forced to abandon our home** as a place in which to live and sleep'. The problem has been recognized as rendering the house valueless."

"**The noise**...was to those who could not mentally shut it out, **an obstacle to pleasant experiences decreasing the joy of daily life at home**...creating a feeling of violation that was expressed as anger, uneasiness, and tiredness".

"The consequence is that a sensitive minority may be tormented by the legal, but in my view quite unreasonable, activity of wind power developers."

"**The wind farm is noisy, it is a visual blight, it does create shadow flicker, it has resulted in very little benefit to the local economy**, it has not resulted in an increase in tourism and negotiating with PowerGen Renewables and Wind Prospect to try to resolve the problems has been a most unpleasant experience for all those involved. Simply put, we want our quality of life back."

"They are **money factories which industrialize the landscape for no other significant purpose**."

"The Highlands are being humiliated by wind farm developers who insist they are saving the environment. **They lie; they are here to make a profit.** Wind farms produce very little intermittent electricity. Most of the time they do not work. How can the blade of a bulldozer ripping up 6,000 years of beautifully preserved archaeology be saving the environment? How can the turbine blades smashing a golden eagle be saving the environment? How can the government of Scotland destroy such a prize? And use public money to do it? "

THE WIND FARM SCAM is available at Amazon.com

Gregg Hubner

Renewable energy falls short

The Aug. 21 edition contained a guest commentary from the *Sioux City Journal* advocating extending tax credits for renewable energy sources. This article was not about the merits of renewable energy but simply a call to ensure Iowa (the nation's leader in wind energy and subsidies) can continue to draw from the government's well.

With the exception of grain ethanol, most renewable energy (wind, solar and cellulosic) never will compete in the marketplace without government subsidies. The commentary stated, "Let's not forget, the oil, natural gas and coal industries get federal tax help, too." While that's true, government intervention because of unproven "climate change" (formerly "global warming" but renamed because global temperatures did not rise) greatly increases the cost of fossil fuels because of government mandates. If the government stayed completely out of energy production, renewables would be even more noncompetitive.

Initially, the primary justification for renewables was fear that fossil fuels would be expended within our lifetimes, but modern technology has extended the availability several hundreds of years. Today the only reason renewables remain in the energy equation is the refusal of so-called "environmentalists" to accept science relying instead on the "politically correct" theory that climate change is caused by human use of fossil fuels.

– Jerry Crew
Webb, Iowa TSN

A Fond Du Lac Farmer has regrets about agreeing to host a wind turbine--

Why can't he speak openly about it?

When you sign a 20 to 30 year contract to host a wind turbine on your property you may be signing away many rights you're unaware of. A confidentiality agreement in the contract may mean legal action can be taken against you if you complain publicly about the project. A Fond Du Lac farmer signed away his rights. He was interviewed by Don Bangart who wrote the following on behalf of the farm, whose contract with the wind company prevents him from speaking openly about any problems.

This was printed as a full page ad in the Chilton, Wisc., Times-Journal, October 25, 2007.

WHAT HAVE I DONE?

Now each morning when I awake, I pray and then ask myself, "What have I done?" I'm involved with the Lakeisky/Greenfield wind turbine project in N.E. Fond du Lac County. I am also a successful farmer who cherishes his land. My father taught me how to farm, to be a steward of my fields, and by doing so, produce far better crop production. As I view this year's corps, my eyes feast on a most bountiful supply of corn and soybeans. And then my eyes focus again on the trenches and road scars leading to the turbine foundations. What have I done?

In 2003, the wind energy company made their first contacts with us. A $2,000 "incentive" started the process of winning us over, a few of us at a time. The city salesmen would throw out their nets, like fishermen trawling for fish. Their incentive "gift" lured some of us in. The city salesmen would leave and let us talk with other farmers. When the corporate salesmen returned, there would be more of us ready to sign up; farmers had heard about the money to be made. Perhaps because we were successful farmers, we were the leaders and their best salesmen.

Sometime in 2004 or 2005, we signed $4,000 turbine contracts allowing them to "lease" our land for their needs. Our leases favored the company, but what did we know back then? Nobody knew what we were doing. Nobody realized all the changes that would occur, over when we would have no control. How often my friends and I have made the statement: What have I done?!

I watched stakes being driven in the fields and men using GPS monitors to place markers here and there. When the cats and graders started tearing 22-foot-wide roads into my fields, the physical changes started to impact not only me and my family, but, unfortunately, also my dear friends and neighbors. Later, a 4-foot-deep by 2-foot-wide trench was started diagonally across my field. A field already divided by their road was now being divided again by the cables running to a substation. It was now making one large field into 4 smaller irregularly shaped plots. Other turbine hosts also complained about their fields being subdivided or multiple cable trenches requiring more of their land. Roads were cut in using anywhere from 1,000 feet to over half a mile of land to connect the locations. We soon realized that the company places roads and trenches where they will benefit the company most, not the landowner. One neighbor's access road is right next to some of his outbuildings. Another's is right next to his fence line.

At a wind company dinner presented for the farmers hosting the turbines, we were repeatedly told -- nicely and indirectly -- to stay away from the company work sites once they start. I watched as my friends faces showed the same concern I had, but none of us spoke out. Months later, when I approached a crew putting in lines where they promised me they definitely would not go, a representative told me I could not be there. He insisted that I leave. The line went in. The company had the right. I had signed the lease.

Grumbling started almost immediately after we agreed to 2% yearly increases on our 30-year lease contracts. Some felt we should have held out for %10. What farmer would lock in the price of corn over the next 5 years, yet alone lock one in at 2% yearly for 30 years? Then rumors emerged that other farmers had received higher yearly rates, so now contracts varied. The fast-talking city sales folk had successfully delivered their play. Without regard for our land, we were allowing them to come in and spoil it. All of the rocks we labored so hard to pick in our youth were replaced in a few hours by miles of roads packed hard with 10 inches of large breaker rock. Costly tiling that we installed to improve drainage had now been cut into pieces by company trenching machines.

Each night, a security team rides down our roads checking the foundation sites. They are checking for vandals and thieves. Once, when I had ventured with guests to show them foundation work, security stopped up and asked me, standing on my own property, what I was doing there. What have I done?

Now, at social functions, we can clearly see the huge division this has created among community members. Suddenly, there are strong sided discussions and heated words between friends and, between relatives about wind turbines. Perhaps this is a greater consequence than the harm caused to my land -- life is short, and friendships are precious.

I tried, as did some of the other farmers, to get out of our contracts, but we had signed a binded contract. If you are considering placing wind turbines on your property, I strongly recommend that you please reconsider. Study the issues. Think of all the harm to your land, and, in the future, to your childrens land, versus the benefits from allowing companies to lease your land for turbines.

WHAT HAVE I DONE?
PLEASE DO NOT DO
WHAT I HAVE DONE!

Submitted by Gregg Huber

Letters to the Editor

Correction:

In Last week's Letter to the Editor by Gary Borer, the Clarion accidently had wind towers in Antelope County were allowed to be constructed with a 100 foot set back from houses in Phase I. This should have read, "wind towers were allowed to be constructed with a 1000 foot set-back from houses in Phase I." We apologize for the mistake.

JSB

So Then Let's Talk About Money and Wind Farms

On April 29, 2015 the Mitchell Daily Republic published my essay, "Wind Farms: The Worst Idea Since Cash for Clunkers." Since then, there have been several local responses to both my article and to criticism of wind energy in general. Allow me to briefly focus on two items.

I reminded readers in my essay that (all things considered) government programs come a cost greater than what such programs "produce." Subsidies = (inherently inefficient) income redistribution. The government cannot "pull a rabbit out of a hat." To everyone's surprise, in a May 14 op-ed for the Daily Republic, Anthony Reezac essentially reached into a hat and proclaimed, "oh yes it can!" I will obviously leave him to that imaginary world.

By June 8th, the CEO of American Wind Association finished crafting a remarkably misleading piece of political prose for the Sioux Falls Argus Leader. Like Reezac and others, the majority of anti-wind concerns were casually dismissed while strings of dollar bills were lowered into readers' faces and swung repeatedly (perhaps this would silence the wind t…I mean the critics!) But, no, no fires were put out, and I might suggest that waving a dismissive hand at South Dakotans as if they were too gullible to care is not a particularly good strategy.

So, since all that pro-wind advocates seem capable of consistently conversing about is money, let's talk about money and wind farms.

First, to repeat, wind farms have to be subsidized because they generate such a huge financial loss, and no one in the free market is silly enough to build them from their own resources. In Buffett's words, "they don't make sense without the tax credit." It is precisely because of this monetary loss that pro-wind advocates have to resign to exaggerated estimates, numerical figures, and macro-level statistics (absent of micro-level realities) in the first place. They are on the defensive for good reasons.

Second, by comparison, wind energy is the most financially wasteful government-sponsored energy program in existence. This was ably demonstrated in a 2010 study conducted by Simmons et. al. for Utah State University. One key finding was, "In 2010 the wind energy sector received 42% of total federal subsidies while producing only 2% of the nation's total electricity. By comparison, coal receives 10% of all subsidies and generates 45% and nuclear is about even at about 20%." These figures have not significantly improved today. And yet we are supposed to believe Tom Kiernan's claim that wind energy will soon "compete" with other sources of energy? (Yes—like a tricycle in Nascar.)

Third, claiming that American wind-energy helps the American economy by being distinctively "local" is simply absurd. Between 75-90% of wind farms are owned by foreign corporations/investors, and over 60% of wind turbines are manufactured by foreign companies (Choma, 2010). American wind energy is as American as a pair of shoes labeled "Made in China."

Fourth, property-owners who have sold their wind-rights may never earn their royalties fast enough to cover the loss in property values from owning them. In other words, those who are supposed to be making millions, don't. (You can find this out yourself simply by asking around.) None of the financial figures produced by the AWA or—to my knowledge, by any pro-wind advocate—takes into full account this central negative factor: depreciation of land. This is significant not only because of the amount of depreciation for land near and under windfarms (which is high!), but because of the ever increasing value of land (amplifying the losses). Over a half-dozen independent studies conducted by Appraisers and University-sponsored groups in the last decade found a 15-59% decrease in property values on or near wind farms (see McCann Appraisal LLC, summaries). (Predictably, pro-wind studies creatively generate data with lower estimates). Combined with 30-40% income tax on earnings from wind royalties, shoddy contracts often not inflation-adjusted and dependent on Washington's empty wallet (and irrational politics), certain land-owners with wind farms ultimately earn pennies instead of millions over the long haul. (This is what you won't hear when signing a 30 or 60 year contract.) Even for the lucky few in better situations, the profits still don't add up to the glorious estimates because of these losses.

Fifth, because of this liability, investors will go elsewhere to invest their money (as will families in local communities). Few want to live on or near a windfarm, and no investor wants to invest in land that has any potential for significant depreciation. (And note that this is true whether land actually depreciates or not; ambiguity is enough to stop investors).

Sixth, as mentioned above, wind-farm developers' numbers (whether royalty estimates, long term sales, "bringing money to the community," etc.) are so out of touch with reality that it's hard to even keep a straight face. Speaking of, Kiernan in his article even claims that wind energy will contribute to the prevention of "a total of 22,000 premature deaths by mid-century" via cleaner air! (What's next? The vibration from turbines will cure constipation? Happy day farmer Joe!)

Space does not allow for seventh, eighth, etc. But, wind energy advocates should at least pause before mindlessly regurgitating monetary figures in public and proclaiming everyone a financial winner with wind farms. Nothing is free, and the monstrous costs of wind energy are coming to the light year after year.

Dr. Jamin Hübner

Director of Institutional Effectiveness, John Witherspoon College, Rapid City

Editor:

As for the people "who may be your friends and neighbors." We are not going to give out their names; they are permitted to have their privacy. But we will share where the project investors are from. Here is a breakdown of where the 30 owners of Prevailing Winds, LLC come from:

7 each from Avon and Tripp

3 from Springfield

2 each from Tyndall and Scotland

1 each from Delmont, Lesterville, Menno, Olivet, Sioux Falls, Tabor, Wagner, Dell Rapids, and Yankton.

And here is the breakdown of the ownership by type of investors:

27 individual investors

2 South Dakota limited liability companies

1 South Dakota limited liability partnership.

Submitted by Ed Van Gerpen

Editor:

I attended the zoning meeting on Monday morning at the courthouse and left feeling like the opponents to the 1000 ft setback of a wind tower to a residence were completely ignored. From what I understood this was by far the biggest crowd this county has seen at a zoning meeting. When you fill a courtroom and by far have more people against the setback you would think, hmmm, maybe we should look into this some more. Not just settle for a sample ordinance that was created back in 2008. It was obvious that the zoning board have sold out to the wind industry. The meeting also was conducted in a disordered manner as the proponents were given proper time to speak their minds first. 2 proponents spoke, both who have an invested interest and wont live under or near a tower, and they were told their time was closed as no one else came up so the opponents now had the opportunity to speak. Midway through they all at once allowed the proponents to speak, as they had their time and should have spoke up. Its amazing to me that so many peopl came and voiced their concerns about setbacks, all the way t people who live right next to the wind towers who have first hand knowledge of what they are experiencing, and somehov the zoning board wouldn't even make a recommendation to push back to another distance. I understand that the people on the zoning board may volunteer or be appointed, but that doesn't mean you just disregard what the public are recommending. I sure hope that when this zoning recommendatio is sent to the county commissioners they show better respect to the people who elected them to their position. They need to make some compromise and respect what the concerned people in the community have to say. At the end of public input it was obvious which way the zoning board was going vote. They brought Roland Jurgens up and asked him a series of questions they had on wind towers. To me that's a big no no. You can't bring up a wind developer with an invested interest up and allow him to be a salesman for a period of time, and not allow the opponents time to respond to his answers. If Roland was a fisherman he had the zoning board hook, line, and sinker. I felt like everyone who spoke up was completely disrespected, especially when everyone took time out of their lives and jobs to be there, only to be ignored.

David Ratzlaff

Wind towers reduce rural quality of life

I am writing in reference to the commentary by Scott VanderWal, South Dakota Farm Bureau president, that appeared in the June 12 issue of the *Tri-State Neighbor*.

I always have thought of Farm Bureau as an organization that stood up for the farmer with a wary eye on the ever-encroaching hand of government, so I was dismayed at its stance on wind energy. Wind turbines are put up solely for the production tax credit given to the multinational organizations who end up owning them. Making a minuscule percentage of the profit are the few farmers who have the wind towers on their land, but the real profits go to those corporations. Wind turbines have nothing to do with wind, green energy or more cost-efficient electricity. It is big government giving tax breaks to big corporations. Two-thirds of the wind farms in our country are owned by foreign companies. The Beethoven project just completed in Bon Homme County is now owned by a company from Germany. It's all about the money. Whenever the tax credit has been removed, wind tower development has fallen by as much as 93 percent.

Then VanderWal says wind towers are good for the community. That would be laughable if it weren't so sad.

1. Energy rates are guaranteed to increase.
2. Land and homes are devalued.
3. Small communities are bitterly divided.
4. There are adverse health effects from infrasound on humans and animals.
5. The visible pollution of a wind tower wasteland will never be reversed.
6. The community shrinks; people move away from wind farms, they do not move into them to live or build new homes.
7. Wildlife is destroyed or chased away.

They are a pilot's nightmare as we all saw when one of the lights was not working and we lost four young men near Highmore last year.

The overzealous estimates of revenue for counties are just that. Whatever money is given to a few should not overshadow the concerns of so many. Some things just should not be for sale. And we are not talking about putting a grain bin in our view, as VanderWal's letter suggested, but altering the quality of life in our rural area

– Marsha Hul
Avo D

LETTERS TO THE EDITOR

Wind turbines violate quality of life

To the Editor:

In response to wind developer Rob Johnson's July 3 letter:

Again, the developers and profiteers of wind energy and wind farms are becoming irritated as their dirty little secrets are being exposed. The letter states, "as significant research has shown, there is no scientific consensus to support the so-called 'Wind Turbine Syndrome.' And he points to a government study from Massachusetts saying, 'there was no evidence found regarding negative health impacts on people living in the surrounding community.'"

It is amazing how carefully developers choose their words, hoping that no one honestly thinks about what is really being said and what is not. We are not talking about the "surrounding community." We are talking about the people living under the turbines within approximately 1 to 2 miles.

"Nocebo effect"? Sounds like something a government study would come up with. Are you aware that in Massachusetts in November 2013, a judge restricted the operation of the Falmouth Municipal Wind Farm because of annoyance to local residents?

You might also want to read about the Shirley Wind Farm in Wisconsin being declared a "human health hazard," and three families having to move out of their homes.

Or Dr. Nina Pierpont's study on rural residents in New York. Of the 10 families living within 1.5 miles of a wind turbine, someone from each family was sick. Eight of the 10 families have moved away, the other two families are having a hard time selling their homes.

Maybe you should talk to the doctor in Knox County, Neb., that couldn't get a good night's sleep for two years after the turbines went up.

They would all beg to differ with your "other sources" comment.

As usual, your agenda is exposed at the end of your letter: "The future of wind energy will provide great opportunities, both financially and as a clean energy source." Financial opportunities for you, Mr. Johnson, and a few others. But, for those of us who would be forced to live under the turbines, a violation and loss of our quality of life.

Marsha Hubner
Avon

Letters to the Editor

Dear Jack;

I have always thought of Farm Bureau as an organization that stood up for the farmer with a wary eye on the ever encroaching hand of the government. So I am dismayed at Mr. VanderWal, President of South Dakota Farm Bureau and his organization's stance on wind energy. Wind turbines are put up solely for the Production Tax Credit given to the multinational organizations who end up owning them. Those who make a miniscule percentage of the profit are the few farmers who have the wind towers on their land, the real profits go to those corporations. Wind turbines have nothing to do with wind, green energy or more cost efficient electricity. It is big government giving tax breaks to big corporations. Two thirds of the wind farms in our country are owned by foreign companies. The Beethoven project just completed in Bon Homme County is now owned by a company from Germany. It's all about the money. Whenever the tax credit has been removed, wind tower development has fallen by up to 93%.

And then he says they are good for the community! That is laughable if it wasn't so sad.

*1. Energy rates are guaranteed to increase.

*2. Land and homes are devalued.

*3. Small communities are bitterly divided.

*4. There are adverse health effects from infrasound on humans and animals..

*5. The visible pollution of a Wind Tower Wasteland will never be reversed.

*6. The community shrinks, people move AWAY from wind farms, they do not move INTO them to live or build new homes.

*7. Wild life is destroyed or chased away

They are a pilots nightmare as we all saw when one of the lights was not working and we lost four young men near Highmore last year.

The over zealous estimates of revenue for the counties are just that. Whatever money is given to a few should not overshadow the concerns of so many. Some things just should not be for sale. And we are not talking about a grain bin in our view, Mr. VanderWal's example, but altering the quality of life.

Marsha Hubner

Avon SD

*1 http://www.forbes.com/sites/jamestaylor/2014/10/17/electricity-prices-soaring-in-top-10-..., and"Mr. Blae representing NWPS made this public statement in Yankton SD, May 2015, "As more wind power is added into the system, the added cost will be passed on to the consumer.

*2 http://www.landsinkappraisals.com/downloads/CaseStudy_DiminutionInValue_InjuriousAffection_WindTurbines.pdf

*3 http://www.huntingtonccc.org/content/tipton-country-indiana-commissioner-voted-for-wind-farms-now-lives-with-regrets.html

*4 https://www.wind-watch.org/cocument/wind-turbines-and-low-frequency-noise-implications-for-human-health/ and the well-researched book "Wind Turbine Syndrome" by Dr Nina Pierpont MD PhD

*5 https://www.wind-watch.org/news/2013/05/20/marshall-county-first-to-ban-wind-farms-2/

*6 https://www.wind-watch.org/news/2015/04/14/game-of-thrones-in-wind-turbines-row

*7 https://www.gadsdentimes.com/apps/pbcs.dll/article?p=1

AVON CLARION

Letters t

Hi Jack,

I want to share the news with you that NorthWestern Energy has entered into an agreement to purchase the Beethoven Wind project. Although we knew that a United States Company wou be buying the Wind Project, is even better that it is a utilit right here in South Dakota, with its headquarters in Siou Falls. NorthWestern will be able to use the tax credits to benefit the NorthWestern's shareholders and NorthWestern's customers. What a great outcome!

Bob Rowe, NorthWestern's CEO made this statement about the acquisition, "We're very excited to be investing in generation that will replace existing higher cost supply contracts for our South Dakota customers. Our investment in reliable, long-term environmentally responsible energy supply based on the cost of production will benefit our customers for years to come."

Mr. Rowe's comment really tells it all. Why Wind Energy in the US and all over the world is the fastest growing source of new electricity. Electricity from new wind energy is almost always the lowest cost power that can be added. When utilities add wind energy to their generation portfolios it helps to stabilize the cost of electricity for their customers. After all the fuel to power wind energy is still free and I am certain it will stay that way!

This is a great ending to an almost unbelievable success story of local people working together for over 5 years to develop a successful and responsible wind project that is going to bring many millions of dollars of direct benefit to our area and now even more benefits to more people in South Dakota.

I could not be prouder of this community and everyone involved than I am right now. What has been accomplished here is so much bigger than most people realize. I just hope going forward that everyone can work together for the benefit of our community and not just worry about their own personal agendas. We are willing to extend our hand in friendship to everyone that wants to work with us to develop the next successful wind project for our area and everyone in South Dakota.

We could not have done this without everyone's help!! Many Thanks to everyone!!

Ronnie Hornstra

Letters to the Editor

Dear Jackson,

Thanks for the great pleasure I get in 10 minutes each week as I retrieve my Clarion from the mail box!

Then the real fun starts as I catch up on local (Avon) school and community news, and the present volatility of environmental issues.

NIXON started the EPA, not the Democrats.

40 years later we finally got rid of the awful smell created by dairy, cattle, and hog barns; the stink of chicken coops everywhere; not to mention the eyesore of windmills on each ¼ section of land, given to the immigrants, so the land could be settled.

Then came poles, and power lines, and telephone wires, all subsidized by the Feds.

In '63, the year of my graduation from AHS, the countryside stunk of agricultural pollution. Nobody said a word about it. Nixon – EPA-1970's.

My GOP side says that we, the Government and the people are both yet at work. Is it really yet at work? Government of the people, by the people, for the people! But you don't want the windmills?

My son-in-laws family farms southeast of Worthington, Minnesota. They're not too thrilled about the quantity of windmills now surrounding them. Each time we travel to their home in Minnesota to see our gorgeous 5 year old granddaughter, we watch – with some great consternation, as the windmills have gone up like a forest of Don Quixote's enemies.

This spring, however, as we drove through this new forest of man's, I began to appreciate a quiet beauty in what had been an almost tree-less landscape. The groves put up to protect the land against erosion have been pushed into piles and burned on all too many farms, not only in Minnesota, but all over South Dakota as well. Why? They aren't conducive to huge farms. The fences have also disappeared in many places, and the native Americans saw this as a return to normal use of the land. Prairie again!

I refer to "quiet beauty" in this new technological aspect of our culture, because there is no noise, just a gentle whoosh-whoosh now and then.

The country side is blooming again, with these ugly wind mills. You can't even find an old air-motor pumping water to the cattle anymore (needless to say that most of the local water sources are polluted) except maybe out west of Pierre, SD.

I am amazed at how peaceful that Minnesota environment still is. That alone rankles my "Keep the Government out of our lives" side. True, they are poking their noses into far too many issues that should be left up to the PEOPLE! But I don't see that stopping until the whole nation is under the control of a few radicals.

If the wind-farms prevail, we will be in for a long siege of whoosh-whoosh. Can that possibly be a positive thing for not only the investors, but for everyone? As these other developments of the past have been?

Bob Wiens
Sioux Falls, SD

Dear Jack,

In response to Ronnie Hornstra's exciting announcement that Northwestern Energy is going to buy the 43 tower wind project known as Beethoven south of Tripp: I read this earlier in the Mitchell paper and cited 6 times where Northwestern Energy CEO Bob Rowe mentioned it would help "lower consumer rates over the long term." Of course I'm not as smart as you folks in the wind business, but what I read was this "lower consumer rates over the long term" somehow will be tied to the PUC decision on the 20% increase Northwestern Energy wants. So your rates will be lower over the long term as soon as we get permission to raise them 20%.

That aside, the big divide between your way of thinking and reality is this: The government has no money of its own. It never has had any and it never will have any. In fact, our "government" is 18 trillion dollars in debt. The only money government has is what it takes in taxes from people that work. This simple statement refutes all of the rest of your letter. You say: "Electricity from new wind energy is almost always the lowest cost power that can be added." Not true. Without huge subsidies, it's the highest. "When utilities add wind energy to their generation portfolios it helps to stabilize the cost of electricity for their customers." Not true again. Northwestern's rates seemed to be stable until they started buying from the wind farm and right away they wanted a 20% raise, and admitted at their meeting in Yankton that the consumer has to pay for this increased cost in energy. You should remember that, you were there. "The fuel to power wind energy is free." That's also a lie. Taxpayer money is needed to subsidize every wind turbine in every project in every state and in every foreign country. Taxpayer money is the fuel, not the wind.

And then lastly, your "I just hope going forward that everyone can work together for the benefit of our community and not just worry about their own personal agenda" This is when my hair started to stand up. Those of us who oppose this taxpayer scam called Industrial wind energy do not have an agenda. If we did, it would be trying to preserve one of the best places in the world to live. We were minding our own business, paying our taxes and enjoying life when you and Frank Kloucek decided you knew better. The people with the agenda are the wind farm developers, the lobbyists, the investors, the giant corporations, foreign and domestic, and their agenda is money. And you are their pawn. You have the agenda. You're the ones that printed out the big oversized check and waved it in front of the school board; you're the ones that chartered a bus to Wessington Springs for the County and Zoning Commissioners. You're the ones that printed brochures with pictures of 30 ft. farm windmills instead of the real thing. You're the one that's been riding around with the developer since spring telling farmers they better sell their easements because all their neighbors did, when in fact they didn't. This is your deceitful agenda. And when you are done with your deceitful agenda you will politely tell us how great your accomplishment was, in spite of us that didn't really know what was good for us. It's the basic mindset of a true liberal thinker. Money from government is free, and we know what's best for everybody else. Again, untrue.

Gregg Hubner

AVON CLARION

Letters to

Jack,

I attended the meeting in Yankton a couple months ago where the PUC officials and Northwestern officials talked about the 20% rate increase.

What I found was very interesting was a statement by a Northwestern official as it relates to wind power.

He said "As more wind power comes into the system to replace the 15% other sources, the added cost will be passed on to the consumer". This was a true admission that wind power is more expensive than the other sources they now have.

From Ed Van Gerpen

Dear Jack,

I went around posting the ad for the We-Care South Dakota sponsored presentation on Wind Farm Effects on Residential Property Values a couple of weeks ago. I went through Tripp, Parkston, and down to Avon. I stopped at a couple residences along the way.

A couple of people told me, "You can't hear them." Not sure if they meant in town or that I can't hear them. I can. One thought this next phase is between Springfield and Avon, which could be a good thing I guess, if you didn't know what it's like to live near or in an Industrial Wind Farm or don't care about other people and their right to live in their own homes without threat of illness, loss of property value, and annoyance. The point I am making. I am not a NIMBY as one of the commissioners of the SD PUC labeled residents who believe Wind Energy is a useful pursuit of our taxpayer dollars however do not want to live near or in an Industrial Wind Farm. I am just one of the victims of a scam for investors and developers to make money and get tax breaks at the expense of others. The citizens and residents and landowners of Bon Homme, Charles Mix, Hutchinson, and Douglas Counties could be the next victims. I urge you to get informed by reading about Europe and Australia's crisis caused by the same "Green Energy" ploy. Ontario, Canada is literally inundated with Industrial Wind Farms. In their case they have had no voice and no choice due to the government. This is America, landowners still have a choice. Please don't give that up by signing the lease for your land and the confidentiality contract to keep you from speaking if you do sign. If you are not a landowner please make your voice be heard while it will make a difference in how our lives are affected by this. There could be 150 more Industrial Wind Turbines in your area. Believe me, there will be no recourse once they are up and it won't be a pretty picture.

Karen Jenkins
28912 410th Ave.
Tripp SD 57376

Letters to the Editor

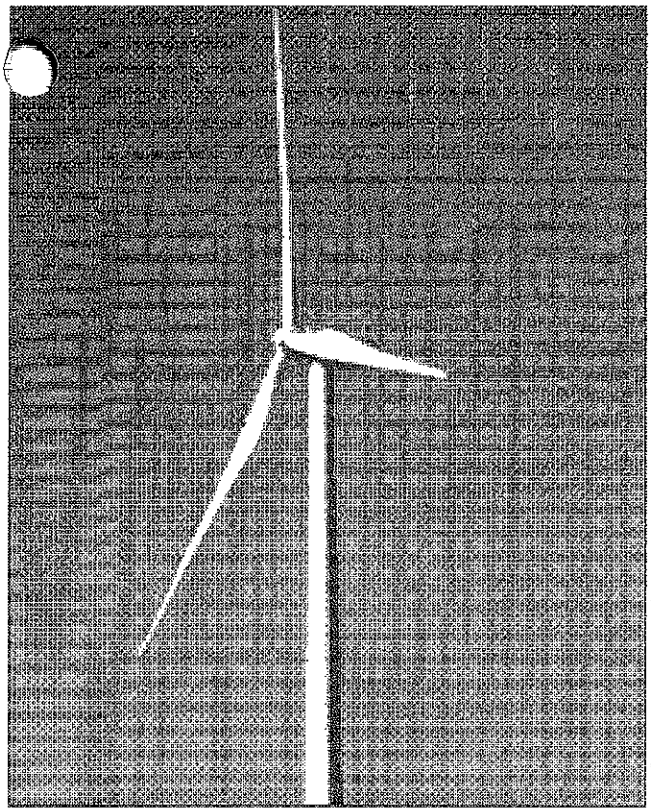


Photo by Gregg Hubner

Dear Jack,

Last week I spent a couple days making hay 10 miles north and ½ mile east of Avon on some hay ground we have up there. There is a wind turbine right across the road to the north. The day I windrowed it took me about 5 minutes to figure out how glad I was I never let the developers talk me into putting one of those 500 ft. ugly monstrosities on my land. Going east I could see about 6 or 8 to the north/northeast. But when I went west, I could always count close to 20 in the skyline. The day I baled it was the same thing, but it was calm and only about half of them were turning; sometimes the closest one would turn for a little while and then just stop. It's a good thing the taxpayer is funding about $165,000 per tower per year to make them look productive, because on their own they are a big money losing joke. After about 5 hours of looking at them, I was so grateful to go back south to sanity again. Being up there was like going to the State Fair and standing in the middle of the midway, but instead of one 150 ft. Ferris wheel, it was 20 plus and they were 450-500 ft. tall. If any of you folks that live in the western third of Bon Homme County think that your life won't change if they build Prevailing Winds, you need to drive 10 miles north, 1 mile east and turn around, face west and just sit there a few hours. Because that scene is going to be your new home. Your view, your peace and quiet, your wildlife, it's all going to be gone. It's going to be gone so big government can give our taxpayer money to big (foreign) business. Then big business can give lobbyists more money to pay to our politicians to promote more nonsense.

Gregg Hubner

Letters to the Editor

Dear Jack,

We attended the we-care meeting last night in Beresford on "Wind Farm Impacts on Residential Property Values". It was put on by a Certified General Appraiser from Chicago that has studied the effects of wind farms on property values in 21 states. In a nutshell, his 10 years of research showed a 25% to 40% drop in residential values if your home was within 3 miles of a wind farm. Not surprising, after all, who would pay the same price to live under a wind farm if you didn't have to? I had a local builder call me in late June with a customer that wanted to build a new home in this area; he will wait to see if the wind farm goes forward, if it does, he will not build the new home. So much for "economic development in the community". The speaker also talked about what I have mentioned before, when selling real estate, a broker or seller must disclose that there is a wind farm near or if they know of one coming. If not they may be sued later.

As with most meetings, you get more out of talking to other people. I talked with a lady from the Canton area who was a dairy farmer. She said her and her husband had a few rough years in dairy farming and could use the extra income. So they went to Minnesota and talked to several farmers living under the towers there. One farmer had a turbine blow over on his field and he's been farming around it for 2 years. The owner won't pick it up, but won't let the farmer touch it because it isn't his. Also she talked to a farmer that had a contract for $4,000 per year for his tower, but after about 3 years when the 3rd owner came in, they told everybody with towers they were going to get $2000 a year, take it or leave it.

The speaker talked a little about contracts; basically they are set up for the advantage of the developer/owner. And as these things change hands over and over the farmer is stuck with whatever the contract says.

I can't stress enough, if you own land and haven't signed a contract yet to really consider both sides. For what is $7,000 a year? The government takes the first 15-20% in taxes, you take 2-3 acres out of production, your field is broken into smaller fields, if you have installed drain tile like many of you have, they may slice that into pieces with the underground wire. Then you reduce the value of your house and buildings by 25-40%. But the bigger disadvantage is you have given an easement for some stranger (foreign or domestic) to come and go on you land for decades. All this to give Warren Buffet or JP Morgan a tax break of billions. I just can't see it.

Gregg Hubner

Dear Jack: Time to respond to the latest from Gregg.

Gregg, week after week you print deceptive facts, half-truths and outright lies. Yet at the same time saying that I and anyone connected to wind energy are the deceptive ones. While this time you came out and called me a liar and that is pushing the limits.

Yes it is exciting news that Northwestern Energy is buying the Beethoven project. And yes it will be good for not only the local area but the entire State of South Dakota.

I know you would like to link the twenty percent increase in electrical rates that NW is requesting to the wind farm. However no matter how many times you repeat that it does not change the PUC hearing docket where wind energy is not even included. In case you have not had a chance to review the docket it is available at the city library. You and others have quoted NW official Bleau LaFave as stating at the PUC hearing in Yankton that the cost of wind would be passed on to the public. Sorry but I also attended that meeting and Bleau was not even present. The meeting was recorded and is available at the PUC website if you would care to check.

You say the "We were minding our own business, paying taxes and enjoying life". Did you notice that the small towns and schools around us are in a downward decline? And that most of our young people leave the area for lack of opportunity? I know that this Wind Farm is not going to solve this problem by itself. But look what the Beethoven project has done, added new jobs, and vastly increased the tax base to the County, State and School system. The school Districts are receiving more than $140,000 in new revenue each year just from the Turbines in their district alone. While the local counties and townships are also receiving in excess of $140,000. I know money is not everything but certainly affects the quality of our school systems, our roads/streets and even our Churches.

You call me the developer's "Pawn". That is interesting because we (the Prevailing Wind Board) hired the developer and are paying their bill. Not too much different than hiring a lawyer or an auctioneer for their expertise. Latter in your editorial you stated "You are the one riding around with the developer since spring telling farmers that they better sell their easements because all their neighbors did, when in fact they didn't". Well the truth is that the only time Roland and I have been on anyone's yard together this year was at your place and the developer does not do the wind easements. Also I make it my policy (and the companies) to never tell anyone else who has or has not signed a lease. If anyone reading this thinks otherwise, I would appreciate knowing.

You mention "Waving an oversize check in front of the School Board". There was no check of any kind at the school board meeting we attended. There were several "oversized" checks at our open house to point out the potential to the schools and counties involved. The potential amount to the Avon school is $289,000 per year.

Yes we did at their request handle the chartering of a bus tour to the White Lake wind farm for the County Commissioners and Zoning Board. Why go to there? It is an established farm where potential problems would have had an opportunity to arise. It started as a smaller farm similar to Beethoven and had additional turbines added similar to what is proposed by the Prevailing Wind project. It also gave the county officials a chance to see an established wind farm and visit with residents that live in the area. And yes they did get a chance to get close to a Turbine, inside in fact, and it was in a corn field.

Yes we are the ones that printed the brochures with the 30 foot farm wind mill. Well if that is deceptive what do you call the weekly picture that you have in the Clarion? The picture appears to be of the first generation towers near Palm Springs California, taken in such a manner as to enhance the cluttered look. Now that is what I would call deceptive, at least people know that our picture is just a nostalgic reminder of a wind use that is quickly fading away. Whereas you are portraying your picture to be the potential area wind farm.

It has been said that the people do not get to decide on this issue. Actually it will need to pass many local tests before any construction can even be thought about. First the landowners need to be receptive to hosting the project. Plus on the local level both the County Zoning Board and Commissioners will need to give their approval. And probably the most important hurtle will be the State Public Utility Commission taking testimony at a public hearing. This hearing will probably be held in Avon.

This project would be a major happening in this area and needs honest open discussion, which we welcome. Lets try to keep it that way.

Ronnie Hornstra

I have always thought of Farm Bureau as an organization that stood up for the farmer with a wary eye on the ever encroaching hand of the government. So I am dismayed at Mr. VanderWal, President of South Dakota Farm Bureau and his organization's stance on wind energy. Wind turbines are put up solely for the Production Tax Credit given to the multinational organizations who end up owning them. Those who make a miniscule percentage of the profit are the few farmers who have the wind towers on their land, the real profits go to those corporations. Wind turbines have nothing to do with wind, green energy or more cost efficient electricity. It is big government giving tax breaks to big corporations. Two thirds of the wind farms in our country are owned by foreign companies. The Beethoven project just completed in Bon Homme County is now owned by a company from Germany. It's all about the money. Whenever the tax credit has been removed, wind tower development has fallen by up to 93%.

He has stated they are good for the community! That is laughable if it wasn't so sad.

*1. Energy rates are guaranteed to increase.
*2. Land and homes are devalued.
*3. Small communities are bitterly divided.
*4. There are adverse health effects from infrasound on humans and animals.
*5. The visible pollution of a Wind Tower Wasteland will never be reversed.
*6. The community shrinks, people move AWAY from wind farms, they do not move INTO them to live or build new homes.
*7. Wild life is destroyed or chased away

They are a pilots nightmare as we all saw when one of the lights was not working and we lost four young men near Highmore last year.

The overzealous estimates of revenue for the counties are just that. Whatever money is given to a few should not overshadow the concerns of so many. Some things just should not be for sale. And we are not talking about a grain bin in our view, Mr. VanderWal's example, but altering the quality of life.

Marsha Hubner

10 REASONS TO OPPOSE WIND FARMS:

4

1. Wind turbines are bad for the environment; they ruin the landscape, dry out fields, drive earthworms out of crop fields and take away the beauty of our rural neighborhoods.

2. Wind turbines have serious negative health aspects including hearing problems, sleeping problems, constant agitation and anxiety.

3. Wind turbines are bad for wildlife. Reports on the we-care website show that pheasants, turkeys and deer will flee from the area. Even frogs and crickets disappear. Migratory birds are slaughtered if they fly through a turning wind turbine.

4. Wind turbines are built on a false premise that all the effects are positive including tax revenue, lower electricity rates, cleaner form of energy, when in fact the agenda to build wind turbines is based on 1 major thing: Production tax credits. In essence, our tax money funds the production tax credit which makes the building of wind towers financially feasible. It is a transfer of wealth from middle class tax payers to rich investors and large corporations, including foreign corporations.

5. A big share of the wind farms in the United States are owned by large foreign corporations, including Spain, Ireland, India, Germany, China and others. When the so called local group that started the project sells out, the farmer/landowner has had his easements transferred to a foreign entity with no recourse.

6. Wind turbines decrease property values, including not only homes, but bare land. Nobody wants to live in the middle of an amusement park. While politicians talk about keeping the younger generation on the farm, who is going to live in the neighborhood of wind towers in the next generation?

7. Wind turbines will not decrease electric rates. Any statistics the developers show to the contrary are based on the taxpayers pouring in money to make these wind turbines look good.

8. The root agenda behind wind turbines is so the environmentalists can continue putting restrictions on coal, making it so expensive that eventually wind energy will be feasible. In the meantime our electric bills are likely to double and triple.

9. Wind turbines split communities. They make enemies out of friends. They split towns and churches.

10. The decommissioning of wind turbines is difficult to enforce, when many times the owner becomes insolvent. There are reportedly 14,000 abandoned wind turbines in the United States.

COMPLAINTS FROM LOCAL WIND FARM RESIDENTS

I don't know if you saw [redacted] letter in the Tri State Neighbor, but I have attached it. I just received a call from a [redacted] who saw the letter and praised it. He said they have went through phase 1 (108 towers) where he lives. He has 2 turbines within 1000 ft. of his house. He has a neighbor that did not sign up for towers, so the developer put 6 turbines within 1500 ft. of his house. As [redacted] said "we're screwed". He also said their zoning was set up so that instead of siting the towers each in a place, they zoned "an area", then the developer could put them anywhere he wanted in that area, as long as they were 1000 ft. from a house. That's how the 6 towers got around his neighbor. He stated that over half of the people that signed up for the first phase deeply regret it now. The song birds are all gone. The wildlife has vanished. And now the developer wants to double the size of the project. He's sad and sick about the whole thing. (one attachment)

--
Gregg C. Hubner

GUEST COMMENTARY four.docx
16K

c4

Gmail by Google

Gregg Hubner <gregghubner@gmail.com>

wind turbine disturbance

3 messages

Gregg Hubner <gregghubner@gmail.com> Wed, Mar 11, 2015 at 2:58 PM
To: [redacted]

[redacted]

I'm Gregg Hubner from north of Avon, SD. We have 43 wind turbines about 10 miles north of here and they plan to put another 100 in my immediate area. I was told by [redacted] that you had some sleeping problems when the wind turbines were put up in this area a few years ago. My other friends in that area are [redacted]. [redacted] was my college roomate and that's how I met these other guys. We are having a meeting here tomorrow night, and I was hoping I could get something from you in writing to confirm any problems you had with any sleeping or other health issues with the turbines. (and you opinion of them) Thanks Gregg Hubner 605 660 1867

—
Gregg C. Hubner

[redacted] Wed, Mar 11, 2015 at 5:37 PM
To: Gregg Hubner <gregghubner@gmail.com>

[Quoted text hidden]
Gregg It took me about 2 years to adjust to the noise. Personal opinion, but I think the setback for a 3 MW tower should be close to a mile. I have been told 2 MW towers are only about half as loud. Closest tower to our house is 5/8 mile, and when wind direction is right with high humidity, we can hear the wosh noise with windows closed and the TV on.
Paul

Gregg Hubner <gregghubner@gmail.com> Wed, Mar 11, 2015 at 5:47 PM
[redacted]

thanks
[Quoted text hidden]
—
Gregg C. Hubner

[redacted]

C3

Industrial Wind Projects Clash with Real Farming

Farmers, the backbone of the American economy, have become a frequent target of industrial wind energy developers. The wind speculators realize the hardship usually endured by hard-working farmers, and often try to exploit that by presenting a one-sided case claiming a farmer can earn big bucks, with little or no effort or downside.

This insightful farmer says that legislators are being fooled by easy money promises: "There is not enough critical thinking skills or common sense being used when big money energy companies enter rural communities". [*Note that the wind developer involved with this controversy is Apex, the same developer for Timbermill.*]

This is consistent with what other farmers have written. This one says: Four Reasons We Will Not Sign a Wind Lease. Then there is this: "Farmer Regrets Signing Wind Turbine Lease". This Wisconsin farmer came to realize that he had effectively signed away control of his own property, and now says that it is his biggest regret. This farmer laments signing a wind lease, saying "What Have I Done?" An Illinois farmer says the extra income is not worth the problems that have resulted.

Clearly Buyer Beware applies here! Below is a sample of studies and reports that have concluded that there will likely be a financial loss to farmers who either host industrial turbines, or (in some cases) when the turbines are even within 15± miles of their farm:

1 - Economic Importance of Bats in Agriculture.
Economic Loss data for selected North Carolina Counties.
2 - Wind Turbines Can Reduce Crop Growth.
3 - Simulating impacts of wind farms on local hydro-meteorology.
4 - How Higher Energy Prices Will Affect U.S. Agricultural Production.
5 - Analysis of Environmental Impacts of Large Wind Projects.
6 - The Incompatibility of Wind Turbines and Crop Farming.
7 - For Crop-Dusters, Turbines Pose a Hidden and Growing Danger.
8 - Crop dusters worried about wind farm impact.
9 - Agriculture and Wind Development are Incompatible.
10-Modern Wind Turbines Generate Dangerous Dirty Electricity.

It's likely that most farmers are not familiar with these studies and reports, as they are not only highly technical, but are in a very specialized area.

Wind leases with farmers have been called among the most restrictive contracts in the country. Since they are written by the wind developer's attorneys, it's not surprising that they are extremely one-sided. **Here's an outline of over forty legal and financial concerns that should be given a LOT of thought.** Independent observers have concluded that these contracts effectively change the farmer's legal position from being a fee simple owner, to that of a caretaker.

Due to the severe complications that can result from these lopsided contracts, there have been many cautionary advisories (e.g. from farm agencies, lawyers, academics, etc.). One attorney said the wind lease: "was the most one-sided, unconscionable, over reaching contract I had ever examined in my entire 54 years of law practice!"

If you only have time to read one, please see "Wind Energy Production: Legal Issues and Related Liability Concerns for Landowners." This is written by Dr. Roger McEowen, a renown scholar at the *Iowa Center for Agricultural Law and Taxation*... The fact that there are so many of these reports is a testament to the complexity and severity of the wind lease contracts – which can be over 35 pages of legalese.

Note also that the wind developer who signs the Lease will likely soon be gone (after they have skimmed the profits), so the farmer will end up dealing with not only a stranger, but a LLC with little or no assets. In other words, there will be little recourse for the farmer if something goes wrong – which over 20± years may well happen.

Yet another consideration is the paltry amount most landowners are paid. This *Penn State College of Agricultural Resources News Release* says: "Don't give it all away for crumbs from the table." As a point of reference, each 2.5 MW turbine could make $500,000± a year in profits to the developer. Why should the farmer – a key ingredient in the whole process – get such an insultingly low amount?

Even if a farmer says that they can accept all the liabilities mentioned so far, what about the health consequences to his own family? Numerous studies from independent experts have identified a variety of potential health risks for those living within a mile of industrial wind turbines. This Leaseholder now says they would not do it again.

Watch these short videos (1, 2, 3, and 4), which are a reenactment of a farmer being solicited by a fast-talking wind energy salesman. In these films the farmer isn't fooled by the slick salesperson, and asks several insightful questions. "Mr. Farmer, Please Read" also makes some excellent points.

Consider this: 23 landowners who host wind turbines on their property have filed suit against two different wind developers, claiming that the developers "carelessly and negligently failed to adequately disclose the true nature and effects that the wind turbines would have on the community, including the plaintiffs' homes."

This and this both sum up the situation nicely: *wind energy is a completely artificial idea, where there is zero scientific proof that it has any* **Net Societal Benefit**. There is no free lunch, so farmers should be **extremely** cautious about these solicitations.

John Droz, jr. Physicist email: "aaprjohn *at* northnet *dot* org" 12/9/14

Better Plan, Wisconsin

BADGERS FOR A BETTER RENEWABLE ENERGY PLAN

AN OPEN LETTER FROM A WISCONSIN FARMER WHO REGRETS SIGNING A WIND CONTRACT

"By signing that contract, I signed away the control of the family farm, and it's the biggest regret I have ever experienced and will ever experience."

-Gary Steinich, Cambria, Wisconsin. June 2011

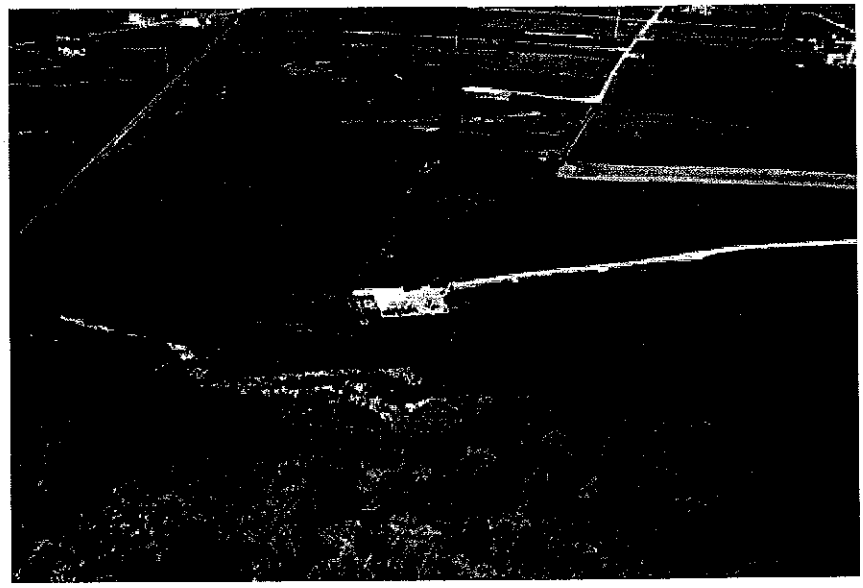
Sometime in late 2001 or early 2002, a wind developer working for Florida Power and Light showed up near the Wisconsin Town of Cambria looking to get in touch with someone at the Steinich family farm.

He wanted to talk to the landowner about leasing a bit of land for the installation of a met tower. He needed to measure the winds in the area for a possible windfarm and Walter Steinich's land looked like a good place to do it.

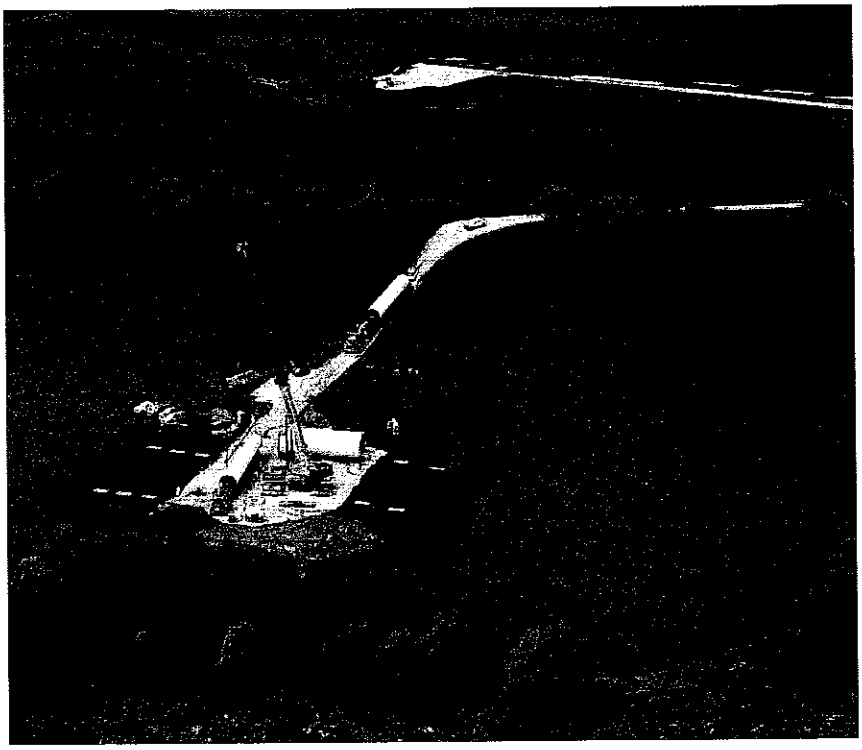
The wind developer seemed like a good guy to Mr. Steinich who was in his early 70's at the time. The money seemed good. A met tower didn't seem like a big deal. It was just a tall pole with some guy wires, and it was temporary. Mr. Steinich signed the contract.

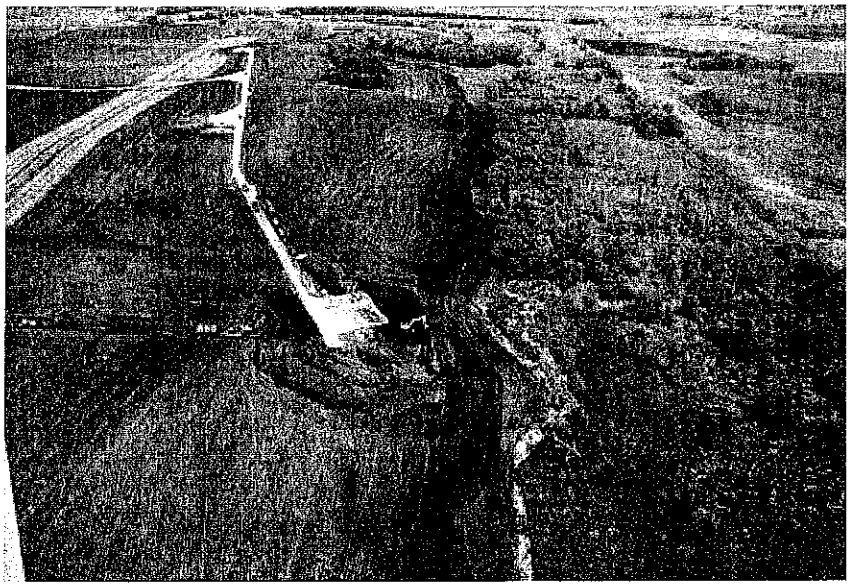
That was nearly ten years ago. Mr. Steinich has since passed away and now his son, Gary, runs the farm. He's written an open letter to Wisconsin farmers about his experience with the wind company since then.

Photos below are of access roads and turbine foundations in various farm fields in the Glacier Hils project now under construction in Columbia County, Wisconsin



Turbine access road cutting diagonally across field in Glacier Hills project. May 2011





From One Wisconsin Farmer to Another:

This is an open letter to Wisconsin farmers who are considering signing a wind lease to host turbines on your land. Before you sign, I'd like to tell you about what happened to our family farm after we signed a contract with a wind developer.

In 2002, a wind developer approached my father about signing a lease agreement to place a MET tower on our land. My father was in his 70's at the time. The developer did a good job of befriending him and gaining his trust.

He assured my father that the project wasn't a done deal and was a long way off. They first had to put up the MET tower to measure the wind for awhile.

He told my father that if the project went forward there would be plenty of time to decide if we wanted to host turbines on our farm. There would be lots of details to work out and paperwork to sign well before the turbines would be built. The developer said my father could decide later on if he wanted to stay in the contract.

In 2003 the developer contacted us again. This time he wanted us to sign a contract to host turbines on our land. We were unsure about it, so we visited the closest wind project we knew of at the time. It was in Montfort, WI.

The Monfort project consists of 20 turbines that are about 300 feet tall and arranged in a straight line, taking up very little farmland with the turbine bases and access roads. The landowners seemed very satisfied with the turbines. But we were still unsure about making the commitment.

We were soon contacted again by the developer, and we told him we were undecided. Then he really started to put pressure on us to sign.

This was in March of 2004, a time of $1.60 corn and $1200 an acre

land. It seemed worth it have to work around a couple of turbines for the extra cash. We were told the turbines would be in a straight line and only take up a little bit of land like the ones in Monfort.

And we were also told that we were the ones holding up the project. That all of our neighbors had signed, and we were the last hold-outs. It persuaded us.

What we didn't know then was the developer was not being truthful. We were not the 'last hold-out' at all. In later discussions with our neighbors we found out that in fact we were the very first farmers to sign up. I have since found out this kind of falsehood is a common tactic of wind developers.

My father read through the contract. He said he thought it was ok. I briefly skimmed through it, found the language confusing, but trusted my father's judgment. We didn't hire a lawyer to read it through with us. We didn't feel the need to. The developer had explained what was in it.

The wind contract and easement on our farm was for 20 years. By then my dad was 75. He figured time was against him for dealing with this contract in the future so we agreed I should sign it. A few months later, my father died suddenly on Father's Day, June 20th, 2004

After that, we didn't hear a whole lot about the wind farm for a couple years. There was talk that the project was dead. And then in 2007 we were told the developer sold the rights to the project. A Wisconsin utility bought it.

After that everything changed. The contract I signed had an option that allowed it to be extended for an additional 10 years. The utility used it.

The turbines planned for the project wouldn't be like the ones in Monfort. They were going to be much larger, 400 feet tall. And there were going to be 90 of them.

They weren't going to be in a straight row. They'd be sited in the spots the developer felt were best for his needs, including in middle of fields, with access roads sometimes cutting diagonally across good farm land. Landowners could have an opinion about turbine placement but they would not have final say as to where the turbines and access roads would be placed. It was all in the contract.

Nothing was the way we thought it was going to be. We didn't know how much land would be taken out of production by the access roads alone. And we didn't understand how much the wind company could do to our land because of what was in the contract..

In 2008 I had the first of many disputes with the utility, and soon realized that according to the contract I had little to no say about anything. This became painfully clear to me once the actual construction phase began in 2010 and the trucks and equipment came to our farm and started tearing up the field.

In October of 2010 a representative of the utility contacted me to ask if a pile of soil could be removed from my farm. It was near the base of one of the turbines they were putting on my land. I said no, that no soil is to be removed from my farm.

The rep said that the pile was actually my neighbor's soil, that the company was storing it on my land with plans to move it to another property.

Shortly afterwards I noticed the pile of subsoil was gone.

In November of 2011 I saw several trucks loading up a second pile of soil on my land and watched them exiting down the road. I followed them and then called the Columbia County Sheriff. Reps from the company were called out. I wanted my soil back.

A few days later the rep admitted they couldn't give it back to me because my soil was gone. It had been taken and already dispersed on someone else's land. I was offered 32 truck loads of soil from a stockpile they had. I was not guaranteed that the soil would be of the same quality and composition as the truck loads of soil they took from my farm.

I was informed by the lawyer for the utility that I had until April 30, 2011 to decide to take the soil. There would be no other offer. Take it or leave it.

I contacted the Public Service Commission for help. The PSC approved the terms of project and I believed the utility was violating those terms. The PSC responded by telling me they could do nothing because the issue involved a private contract between myself and the utility.

They told me my only option was to sue the utility.

My father and I both worked those fields. Watching the way they've been ripped apart would sicken any farmer. But what farmer has the time and money it would take to sue a Wisconsin utility?

By signing that contract I signed away the control of the family farm, and it's the biggest regret I have ever experienced and will ever experience. I have only myself to blame for not paying close enough attention to what I was signing.

We had a peaceful community here before the developer showed up, but no more. Now it's neighbor against neighbor, family members not speaking to one another and there is no ease in conversation like in the old days. Everyone is afraid to talk for fear the subject of the wind turbines will come up. The kind of life we enjoyed in our community is gone forever.

I spend a lot of sleepless nights wishing I could turn back the clock and apply what I've learned from this experience. Now corn and bean prices are up. The money from the turbines doesn't balance out our crop loss from land taken out of production. The kind of life we

enjoyed on our family farm is gone forever too.

I would not sign that contract today. As I write this, the utility is putting up the towers all around us. In a few months the turbines will be turned on and we'll have noise and shadow flicker to deal with. If I have trouble with these things, too bad. I've signed away my right to complain. These are some of the many problems I knew nothing about when I signed onto the project.

If you are considering signing a wind lease, take the contract to a lawyer. Go over every detail. Find out exactly what can happen to your fields, find out all the developer will be allowed to do to your land. Go through that contract completely, and think hard before make your decision.

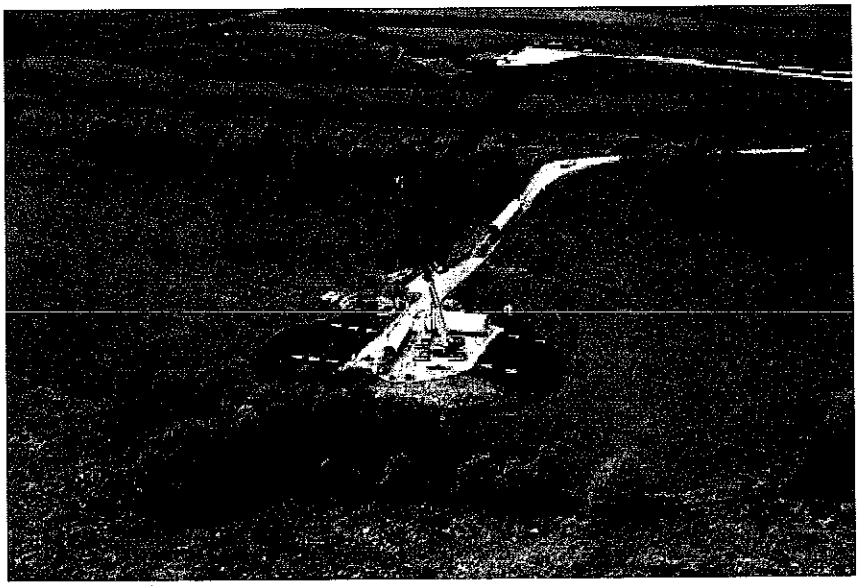
I can tell you from first hand experience, once you sign that contract, you will not have a chance to turn back.

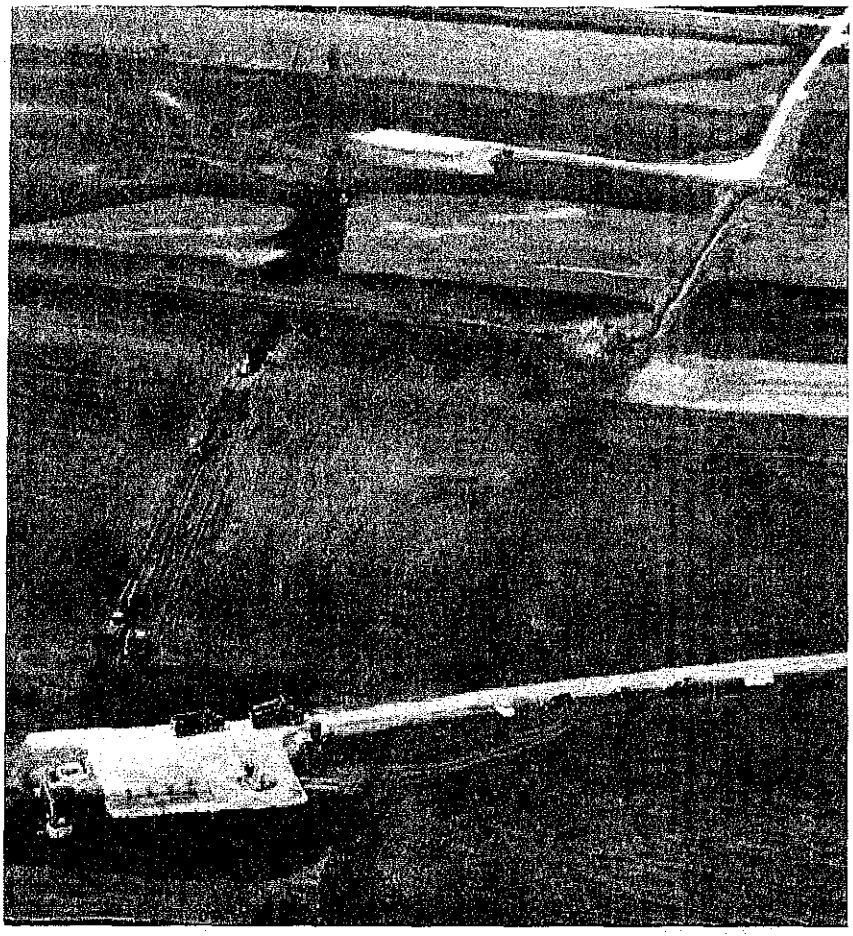
Gary Steinich
Steinich Farms, Inc.
Cambria, WI
June, 2011

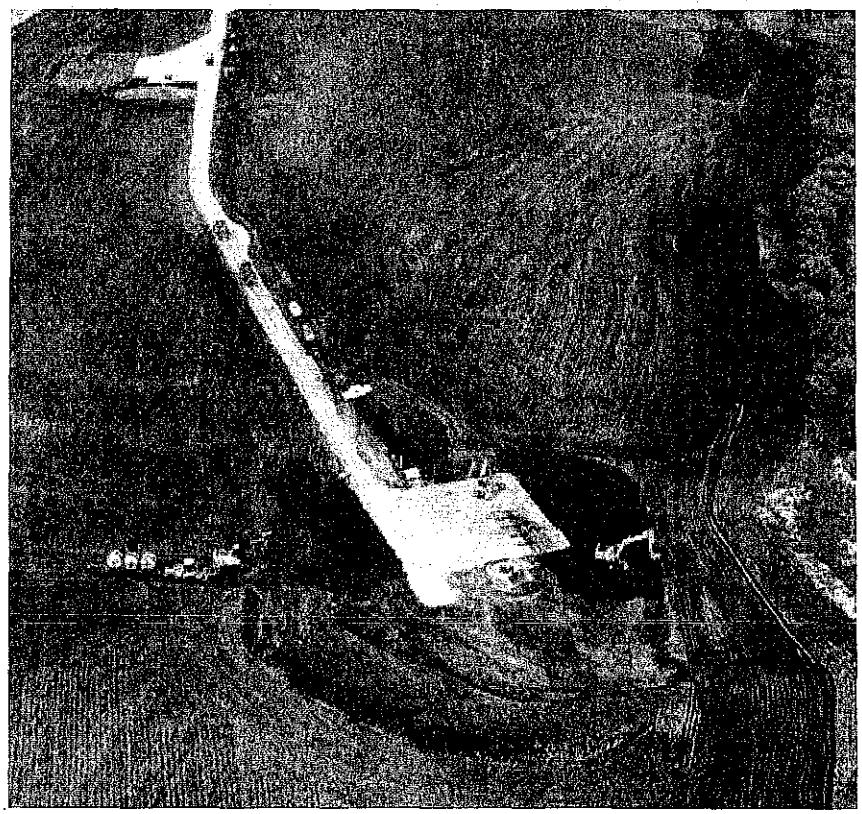
EXTRA CREDIT READING:

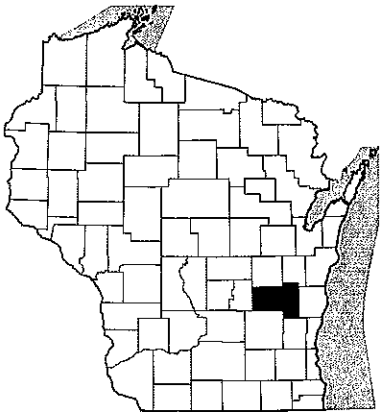
CLICK HERE TO DOWNLOAD A COPY OF THE FLORIDA POWER AND LIGHT WIND LEASE CONTRACT MUCH LIKE THE ONE THE STEINICH FAMILY SIGNED.

It can be found on the PSC Docket for the Glacier Hills project. [#6634 CE 302]









**A Fond Du Lac Farmer has regrets about agreeing to host a wind turbine--
Why can't he speak openly about it?**

When you sign a 20 to 30 year contract to host a wind turbine on your property you may be signing away many rights you're unaware of. A confidentiality agreement in the contract may mean legal action can be taken against you if you complain publicly about the project. A Fond Du Lac farmer signed away his rights. He was interviewed by Don Bangart who wrote the following on behalf of the farmer, whose contract with the wind company prevents him from speaking openly about any problems.

This was printed as a full page ad in the Chilton, Wisc., Times-Journal, October 25, 2007.

WHAT HAVE I DONE?

Now each morning when I awake, I pray and then ask myself, "What have I done?"

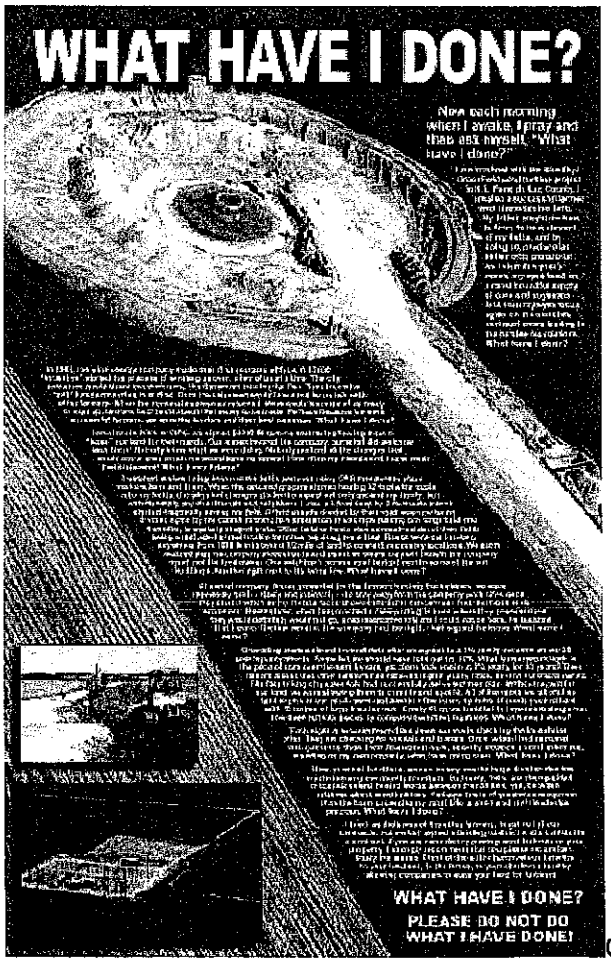
I am involved with the BlueSky/Greenfield wind turbine project in N.E. Fond du Lac County. I am also a successful farmer who cherishes his land. My father taught me how to farm, to be a steward of my fields, and by doing so, produce far better crop production. As I view this year's crops, my eyes feast on a most bountiful supply of corn and soybeans. And then my eyes focus again on the trenches and road scars leading to the turbine foundations. What have I done?

In 2003, the wind energy company made their first contacts with us. A $2,000 "incentive" started the process of winning us over, a few of us at a time. The city salesmen would throw out their nets, like fishermen trawling for fish. Their incentive "gift" first lured some of us in. Then the salesmen would leave and let us talk with other farmers. When the corporate salesmen returned, there would be more of us ready to sign up; farmers had heard about the money to be made. Perhaps because we were successful farmers, we were the leaders and their best salesmen.

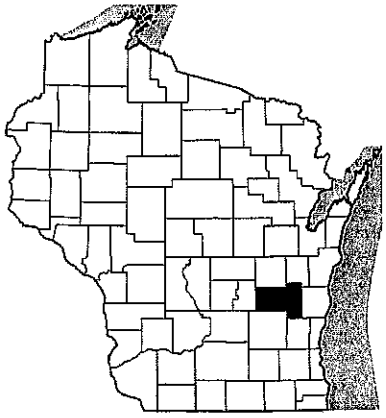
Sometime in 2004 or 2005, we signed $4,000 turbine contracts allowing them to "lease" our land for their needs. Our leases favored the company, but what did we know back then? Nobody knew what we were doing. Nobody realized all the changes that would occur, over which we would have no control. How often my friends and I have made that statement: What have I done?!

I watched stakes being driven in the fields and men using GPS monitors to place markers here and there. When the cats and graders started tearing 22-foot-wide roads into my fields, the physical changes started to impact not only me and my family, but, unfortunately, also my dear friends and neighbors. Later, a 4-foot-deep by 2-foot-wide trench was started diagonally across my field. A field already divided by their road was now being divided again by the cables running to a substation. It was now making one large field into 4 smaller irregularly shaped plots. Other turbine hosts also complained about their fields being subdivided or multiple cable trenches requiring more of their land. Roads were cut in using anywhere from 1,000 feet to over half a mile of land to connect the locations. We soon realized that the company places roads and trenches where they will benefit the company most, not the landowner. One neighbor's access road is right next to some of his outbuildings. Another's is right next to his fence line.

At a wind company dinner presented for the farmers hosting the turbines, we were repeatedly told — nicely and indirectly — to stay away from the company work sites once they start. I watched as my friends faces showed the same concern I had, but none of us spoke out. Months later, when I approached a crew putting in lines where they promised me they definitely would not go, a representative told me I could not be there. He insisted that I leave. The line went in. The company had the right. I had signed the lease.



Grumbling started almost immediately after we agreed to 2% yearly increases on our



**A Fond Du Lac Farmer has regrets about agreeing to host a wind turbine--
Why can't he speak openly about it?**

When you sign a 20 to 30 year contract to host a wind turbine on your property you may be signing away many rights you're unaware of. A confidentiality agreement in the contract may mean legal action can be taken against you if you complain publicly about the project. A Fond Du Lac farmer signed away his rights. He was interviewed by Don Bangart who wrote the following on behalf of the farmer, whose contract with the wind company prevents him from speaking openly about any problems.

This was printed as a full page ad in the Chilton, Wisc., Times-Journal, October 25, 2007.

WHAT HAVE I DONE?

Now each morning when I awake, I pray and then ask myself, "What have I done?"

I am involved with the BlueSky/Greenfield wind turbine project in N.E. Fond du Lac County. I am also a successful farmer who cherishes his land. My father taught me how to farm, to be a steward of my fields, and by doing so, produce far better crop production. As I view this year's crops, my eyes feast on a most bountiful supply of corn and soybeans. And then my eyes focus again on the trenches and road scars leading to the turbine foundations. What have I done?

In 2003, the wind energy company made their first contacts with us. A $2,000 "incentive" started the process of winning us over, a few of us at a time. The city salesmen would throw out their nets, like fishermen trawling for fish. Their incentive "gift" first lured some of us in. Then the salesmen would leave and let us talk with other farmers. When the corporate salesmen returned, there would be more of us ready to sign up; farmers had heard about the money to be made. Perhaps because we were successful farmers, we were the leaders and their best salesmen.

Sometime in 2004 or 2005, we signed $4,000 turbine contracts allowing them to "lease" our land for their needs. Our leases favored the company, but what did we know back then? Nobody knew what we were doing. Nobody realized all the changes that would occur, over which we would have no control. How often my friends and I have made that statement: What have I done?!

1,000.

3. Transferability - Add a clause that stipulates that the agreement cannot be transferred by the
wind company to any person or company without your approval.

4. Appearance – No leases address appearance, but you could have to look at it for 50 years.
Add a clause that prohibits advertising on the tower.
Add a clause that stipulates the paint colour be agreed and repainted if it becomes rusty.
Add a clause that covers effective reclamation of the site when all is done.

5. Building Restrictions – Attach a map of the property to the agreement that outlines areas
where new buildings over 20 metres can and cannot be built.

6. Fill Material - Under no circumstances should a developer use fill taken from your land.

7. Gear oil - You can use the lease to prohibit the use of toxic gear oil.

8. Option Termination - Add a clause that stipulates that the option ends at 5:00 p.m. on a
specific date if construction has not started by that date. You need a clear ending to the option.

9. Net Meter Tower - Ask the company to lend you its crane to install your own net metered
wind generator. You must be ready when they are, but it could save you $ 10,000.

10. Option - The minimum should be $ 5,000/ 100 acres for three to five years. No renewal; they
put up a wind tower or they are gone. **No payment is enough to make a bad lease worthwhile.**

11. Rent – Rent should be at 3% for the first eight years then go to 8% once bank loans etc. are
covered. Rent should apply to all income from the project including green house gas credits.

12. Insurance - Add a clause stipulating that the wind company must produce a valid certificate of
insurance covering liability to the farm and others each year and that it assumes full liability for
damage caused by the wind tower or the contractors or consultants etc..

13. Protect Capital Value - Add a clause requiring the wind power company to make whole any
losses in re-sale value that might occur as a result of the lease or a wind tower being in place. If
the wind tower effects your land value, losses might not be covered by rent.

14. Other Development – If the property may be valuable for other development in the next 30
years do not sign, you will be giving the wind company your future profits or capital gains.

15. Your Other Rights - Some leases have clauses that appropriate your development rights for
aggregates, ground water, top soil, sale outside of the family and even your right to speak in
public on wind power questions. Any such clause should be stricken from the

agreement.

16. Tenants Rights - Stipulate that the only rights the tenant will have are the rights to do needed studies, the rights to construct, operate and maintain no more than two wind towers per 100 acres as well as required roads and wires, and to remove the electricity from the site to the grid.

17. A Cooling Off Period – have a clause that states that either party may cancel the agreement within 30 days without reason or penalty.

18. Power Sales - Stipulate that power must be sold to government or you get to approve any other contract. Without this power can be sold to a subsidiary of the wind power company and the 3% rent you were hoping for will 3% of very little.

19. Hours, Times of Access – Access for emergencies at any time. Other access between 8:00 a.m. and 5:00 p.m. Monday to Friday and requires notice so there is no interference with seeding, harvests, calving, or other farm or family activities that are time restricted

20. Area of Lease - Limit the area covered by lease to a suitably small area – 1 to 5 acres

21. Applies to One Lot Only - Limit the agreement so it only applies to the actual lot leased and that there is no reference to any other land owned by the farmer

22. Conversion to Easement – Do not allow a conversion to an easement as it will be more difficult, perhaps impossible to discharge at the end.

23. Quitclaim – ensure the lease provides for a clean end so the wind company cannot be released from the lease or recover funds from the escrow account without your approval and certification that they have met all their obligations including clean up.

24. Wind Rights Only - Do not allow any clause that gives the wind power company a right of first refusal or an option for any purpose other than the use of the wind. Such clauses encumber sales, wills, development of other businesses etc.

25. Term of Lease – suggest 3 year option, 20 years for first term and 5 year renewals to follow. This provides enough time to do tests and make profits and brings the replacement date for the generator and the lease renewal dates closer together, which improves your negotiating position.

26. Assessment and Property Taxes – the land owner is ultimately responsible for taxes – a clause to require the wind power company to pay taxes associated with the wind tower is essential and it requires an enforcement clause – you cannot afford their taxes, unless you have their income. In the case of default, you should get the licences to produce

and sell power.

27. Escrow Fund – Require the tenant to have an escrow fund held with your lawyer or a trust company. This fund will be established with the start of construction and used to pay any arrears in taxes, any maintenance that the company refuses to do and will fund reclamation.

28 Registration of Surveys – surveys should only be registered with your approval and the agreement should specify that the tenant does not acquire a legal right of way or any privilege that could lead to shared or sole title. The tenant only acquires limited rights to use for a period, but no easements or rights of way.

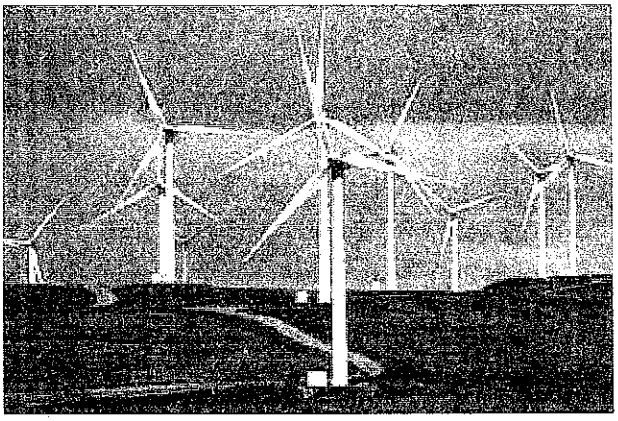
29. Wait 'Til You Know Your Choices – The government has a Standard Offer. You can have your own wind project or you can find other firms or partners. You may do better than you might as a landlord. Don't sign a lease until you have considered the choices and determined what is best for your farm operation for the next 20 plus years.

30. If you wish to increase your bargaining power apply to Hydro One or your local distribution company for the right to connect a generator yourself. The connection agreement is valuable, acquire it for yourself.

(To read more about what you should know before you sign a contract, click here)

Why a Farmer in Johnsburg Wisconsin Regrets signing on for Turbines

Why A Wisconsin Farmer is Having Regrets
(Click Here to read this at its original source, the Appleton Post-Crescent, November 30, 2007,)



As told in a recent ad, a Johnsburg farmer who will host wind turbines now has many regrets.

He regrets having been the "lure" to draw in other unsuspecting landowners. He regrets that he has allowed

fields to be subdivided, road base to be spread on land once picked bare of rocks, costly tiling to be cut up. He regrets that he's no longer the person who controls his own land and is now told where to go by security guards. He regrets the divide he has created between friends, between neighbors and between family members.

He regrets not having looked into all the ramifications first. That farmer is now locked in to a binding contract. But there are many landowners who have not yet suffered this fate.

Calumet County Citizens for Responsible Energy asks that landowners considering a contract first step back and study the issues. As with any financial transaction, don't put a lot of trust in those who stand to gain financially.

Look for Web sites and information from those experiencing the effects of this worldwide "gold" rush for wind power. People across world are rebelling. They're finding that they've lost control of their land and their lives. And they're in danger of financial hardship if these companies dissolve.

Our irresponsible government representatives are forcing this "windfall" for wind investors on us. Their knee-jerk reaction to the global climate change alarms will cause billions of dollars to be wasted, lives to be ruined, and environments degraded for what is, in actuality, a very inefficient energy source.

With a declining tax base and state and U.S. legislators driving us further into massive debt, taxpayer subsidies for wind will be impossible to maintain.

And with the subsidies gone, what will you be left hosting?

[redacted]

[redacted]

Posted on Sunday, December 2, 2007 at 09:16PM by **[Your Name Here]** | **Comments Off**

RATE HIKES AND ARTICLES ON EFFICEINCY

THE INDY STAR

Solar, wind subsidies are tax on the poor

Michael J. Hicks*2:43 p.m. EST February 20, 2015*

(Photo: AP)

Indiana faces a looming problem in electricity markets that many states have already tackled. It is not a specially complicated issue, but with more than the usual demagoguery surrounding it, a little explanation is in order. Electricity is sold to consumers under a form of price regulation. The reason for this is that consumers cannot change the wires to their home any time they see a lower price. So, electricity production is what economists call a "natural monopoly" and everywhere power is sold there is some form of pricing regulation.

The way this works is that the electric company builds power plants, pays workers and buys fuel. Then the regulator (usually an appointed board) sets a price for consumers that covers the cost of the fuel and the people and pays the companies a "fair" rate of return on their plant and equipment. In return, the company must provide service to everyone in their region.

This pricing regulation is not perfect. It cannot be. No price will meet the mutually exclusive goals of getting service to everyone at the lowest costs. So, regulators (or

RH1

By Dennis M. Mitchell and Dr. Willie Soon

Without affordable, reliable energy, life is short and brutal. Visit any place where families struggle to live without cheap electricity, and you will be horrified at the suffering. Without rational stewardship of natural resources, life is on a pathway to destruction.

Energy issues are very complex and therefore it is difficult for anyone, expert or not, to see the best path, but there are plenty of signs indicating who is and who isn't being straight with you.

How does the average citizen see clearly when the experts are so divided on complex and confusing issues? The same way you choose people and organizations to do business with on a daily basis.

Obama's War on Coal

President Barack Obama is waging a war on coal, with a disturbingly high level of persistent deception. The trendy, hip, cool, sophisticated approach has been to rush into "renewable energy" sources and shut down traditional sources of energy, based on a huge deception called "consensus science."

The infamous claim "97 percent of all scientists agree humans are causing dangerous climate change" pounded into our collective brain by environmental lobbyists within and outside of the Obama administration is in fact a well-funded and pernicious deception. It is one of many unethical tricks to get folks going along with nonsense non-science.

The Achilles heel for "renewables," the dirty little secret renewable power promoters try to hide, is there is no magic fix for the nearly insurmountable barriers of storage and distribution of energy. Despite decades of engineering efforts and subsidies, solutions to these problems are still nonexistent.

> "The idea of 'free energy' is a deception, dangerous to human life and well-being. No one has been a bigger promoter of this falsehood than international climate alarmists and EPA."

EPA Lies Exposed

Here are some of the deceptions just one agency, the U.S. Environmental Protection Agency (EPA), has been foisting upon the United States public to gain support for its efforts to end coal use.

Deception: The new clean-energy regulations currently shutting down U.S. coal-fired power plants will have a measurable effect on carbon dioxide worldwide.

Truth: China's increases alone will outstrip reductions from the United States. And according to the United Nations' Intergovernmental Panel on Climate Change, each moderate volcanic eruption will negate this effort for decades. All the radical carbon dioxide emission cuts proposed cannot and will not lead to any significant reduction in global temperature.

Deception: New mercury rules being applied to U.S. coal-fired power plants will save 17,000 lives per year.

Truth: EPA's claim is bizarre since there is not a single documented death from airborne environmental mercury. U.S. power plants produce about 42 tons of mercury emissions per year. By comparison, volcanoes spew about 10,000 tons per year. If we shut down all coal-electricity generation in the nation, it would likely reduce mercury levels in Florida by less than 3 percent. The Gulf of Mexico alone contributes about 40 percent of airborne mercury in the region as it has for several million years. There is zero correlation between airborne mercury and the organic mercury found in some fish.

Deception: We can replace all coal-fired power plants with nuclear and renewables by 2030 with virtually no economic impact because of the savings from fuel, health, and other environmental benefits.

Truth: This would require building more than 1,000 nuclear power plants to replace the loss of coal-fired power plants. Does anyone really think EPA would allow permits for 1,000 nuclear plants in the next 15 years?

The only "new" jobs created by EPA's legally questionable regulations will be the increase in EPA's employee headcount from about 20,000 to more than 250,000.

Lessons to Remember

Remember, all wind and solar "renewable" energies must have fossil-fuel or nuclear backups because they cannot deliver power when needed. The U.N. climate conference in Peru was noted as having the largest carbon footprint of any U.N. conference thus far because it was powered by diesel generators—the organizer did not trust its own solar panels.

Twenty years ago the renewables zealots convinced Congress that 10 years of taxpayer assistance would be plenty to develop wind as a viable competitor for traditional energy. Today those subsidies continue. Germany and Spain are prime examples of national commitments to "renewables" failing over the past 15 years. Spain's economy is in shambles, and Germany is shutting down most of its offshore wind program and building coal-fired power plants literally as fast as possible to keep the nation from financial disaster.

Shoving immature technologies down taxpayers' throats, heedless of the consequences, is outrageous. Energy costs from traditional sources have been artificially, and substantially, raised. The poor suffer the most from these increases in the cost of living.

The idea of "free energy" is a deception, dangerous to human life and well-being. No one has been a bigger promoter of this falsehood than international climate alarmists and EPA.

Dennis Mitchell (**dennismitchell@fairpoint.net**) *is an environmental professional and certified public accountant based in Laurel Hill, Florida. Willie Soon* (**romeosoon@gmail.com**) *is a solar and Earth scientist with the Harvard-Smithsonian Center for Astrophysics.* *This is a modified version of an article, "EPA's fibs in its war on coal," originally published in* The Washington Times *on December 29, 2014. Reprinted with permission.*

RH3

12

Forbes http://onforb.es/1zeSqFQ

James TaylorContributor
I write about energy and environment issues.
Opinions expressed by Forbes Contributors are their own.

ENERGY & ENVIRONMENT 10/17/2014 @ 8:12AM 13,051 views

Electricity Prices Soaring In Top Wind Power States

Comment Now

Electricity prices are soaring in states generating the most wind power, U.S. Energy Information Administration data show. Although U.S. electricity prices rose less than 3 percent from 2008-2013, the 10 states with the highest percentage of wind power generation experienced average electricity price increases of more than 20 percent.

According to the U.S. Energy Information Administration (EIA), the 10 states in which wind power accounts for the highest percentage of the state's electricity generation are:

Iowa – 27%

South Dakota – 26

Kansas – 19

Idaho – 16

Minnesota – 16

North Dakota – 16

Oklahoma – 15

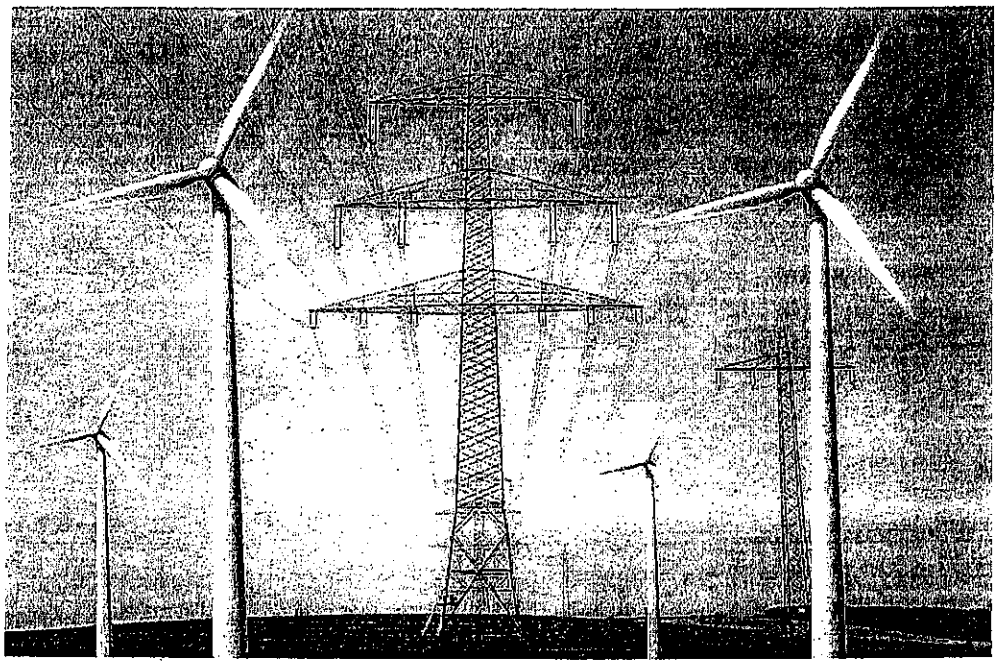
Colorado – 14

Oregon – 12

Wyoming – 8

The wind power industry claims switching from conventional power to wind power will save consumers money and spur the economy. However, data from the top 10 wind power states show just the opposite. From 2008-2013 electricity prices rose an average of 20.7 percent in the top 10 wind power states, which is seven-fold higher than the national electricity price increase of merely 2.8 percent.

RHY



The 2008-2013 price increases in the top 10 wind power states were:

Iowa – 16%

South Dakota – 25

Kansas – 26

Idaho – 34

Minnesota – 22

North Dakota – 23

Oklahoma – -2

Colorado – 14

Oregon – 16

Wyoming – 33

With the sole exception of Oklahoma, every one of the top 10 wind power states saw its electricity prices rise at least 14 percent. For each of these states, electricity prices rose at least five times faster than the national average.

The electricity price increases in states producing the most wind power don't tell the whole story. Federal and state taxpayer subsidies to wind power producers hide additional costs of wind power. The federal wind power Production Tax Credit (PTC), for example, gave wind power producers 2.3

cents for every kilowatt hour of wind power production last year. With U.S. retail electricity prices at 10.08 cents per kilowatt hour, the PTC allowed wind power producers to hide over 20 percent of wind power costs. This allowed the wind power industry to charge the American people still more money in backdoor tax bills, in addition to the higher retail electricity prices documented above.

Higher electricity prices in states producing the most wind power are taking a devastating toll on disposable incomes and the overall economy.

In Colorado, for example, electricity consumers spent $5.3 billion on electricity in 2013. Had Colorado electricity prices risen at merely the national average from 2008-2013, however, Colorado electricity consumers would have spent only $4.8 billion on electricity. That's $500 million in excess electricity costs in 2013. If we divide that up among Colorado's 2 million households, the extra electricity costs drained $250 from the average Colorado household in 2013.

In Minnesota, electricity consumers spent $6.4 billion on electricity in 2013. Had Minnesota electricity prices risen at merely the national average from 2008-2013, however, Minnesota electricity consumers would have spent only $5.4 billion on electricity. That's $1 billion in excess electricity costs in 2013. If we divide that up among Minnesota's 2.1 million households, the extra electricity costs drained $476 from the average Minnesota household in 2013.

In Kansas, electricity consumers spent $3.8 billion on electricity in 2013. Had Kansas electricity prices risen at merely the national average from 2008-2013, however, Kansas electricity consumers would have spent only $3.1 billion on electricity. That's $700 million in excess electricity costs in 2013. If we divide that up among Kansas' 1.1 million households, the extra electricity costs drained $636 from the average Kansas household in 2013.

The wind power industry's fallback position is wind power benefits state economies, despite rapidly rising electricity costs, because the switch from conventional power to wind power generates jobs within the wind power industry. This argument, however, amounts to nothing more than a misleading head-fake. Shifting electricity production from conventional power to wind power does not create any net new jobs – it merely shifts jobs from one sector (conventional power) to another sector (wind power). Jobs created in the wind power industry come at the price of eliminating jobs in the conventional power industry.

Worse yet, the jobs shifted to the wind power industry fail to equal the number of jobs eliminated in other sectors of the economy for two important reasons.

RHS

First, wind power employs very few workers. After the tremendous start-up costs necessary to build wind turbines and place them in industrial wind farms, operational wind power facilities employ few workers. Nor does wind turbine manufacturing adds many jobs in top wind power states. Of the world's top 10 wind turbine manufacturers, only one is located in the United States. Wind turbine manufacturing jobs are created in places like Germany, Denmark, and China more than in the United States.

Even among the top seven manufacturers of the wind turbines that are deployed in the United States, only one is located in the United States.

By contrast, conventional power plant operation requires far more workers than wind farms. More jobs are created in the conventional power industry even while electricity production costs go down. And unlike wind power jobs, nearly all U.S. conventional power plant manufacturing and operational jobs go to American workers – and especially to workers within the resident state of the conventional power plant.

Second, higher electricity prices caused by wind power kill jobs throughout the entire state and national economy. For example, when the average household in Kansas spends an extra $636 on electricity each year due to unnecessarily high electricity prices, that means the average Kansas household spends $636 less on other goods and services. The aggregate effect of such reduced spending in the Kansas economy (equaling $700 million in Kansas economy-wide reduced spending in 2013) eliminates thousands of jobs that would otherwise be created or sustained throughout all segments of the Kansas economy with higher consumer spending.

Any way you cut it, wind power is needlessly raising living costs, reducing living standards, and destroying American jobs. Fortunately, states can easily rectify the problem by repealing renewable power mandates and taxpayer subsidies that perpetuate higher electricity costs and widespread job destruction.

Latest Documents

Belgium, Noise: **Annoyance, detection and recognition of wind turbine noise**
Human rights, Ireland, Law: **In sowing the wind, how Ireland could reap the whirlwind**
Economics, Emissions, Europe, Ireland: **Clean energy – What is it and what are we paying for?**
Australia, Health: **Expert Review: Evidence on Wind Farms and Human Health**
Northern Ireland, Regulations: **Report on the Committee's Inquiry into Wind Energy**
Denmark, Technology: **Outline history of Danish wind turbine production: Output and longevity from 1977 to 2014**
Law, Massachusetts: **Krummey et al. vs. Falmouth et al. – appeals court order**
Health, New Zealand, Noise: **Statement of**

posted: November 4, 2011 • Environment, Health, Impacts, Noise, Wildlife

Wind power and ecology

Author: Whisson, Max

The survival of the world ecosystem, including of course ourselves, requires that we harness renewable energy in an environmentally tolerable way. One source of power is wind and it is vital that we assess the impact of current developments. We are destroying our only home, the Earth, on a scale that no other species has even remotely approached. Wind power has a long history. It has been an important local source of energy, for pumping water, grinding corn etc., for almost two millennia and during the last century millions of improved small wind turbines have been usefully installed on farms. In the last three decades a dramatic change has occurred with the development of enormous horizontal axis three-bladed wind turbines, all having vast blades with tip speeds of 100 kph [actually 240-320 kph —Ed.] whirling on top of massive towers, many more than 100 m high, built on huge concrete bases set into excavated ground. These huge machines have been built in large groups on dedicated land called wind farms.

An alternative approach has been the development of small machines often fitted to rooftops, even in cities. Quiet vertical axis machines have been widely set up in a number of countries, notably in Finland. One advantage of this "distributed energy production" is that the overall wind power is more constant than it is in large concentrated installations of the wind farm type, but the huge three bladed machines now dominate the landscape in many areas around the world and form the basis of several multi-billion dollar companies with immense lobbying power. Increasingly, people living near these vast machines have suggested they are detrimental to their health and there are some reports of abnormalities appearing in farm animals.

Most of the discussions have centred on the effects of the noise made by the wind farms, and many thousands of people have reported sleep disturbances and serious health effects forcing them to leave the area they have called home. The wind turbine companies refuted, even ridiculed these

RH6

Evidence on behalf of Glenmark Community Against Wind Turbines
Environment: Wind energy: Increasing deployment, rising environmental concerns

complaints, and pointed out that many common sources generate noise of greater intensity. The thousands of reports from doctors dealing with people suffering stress, sudden bursts of tachycardia, and hypertension would seem to be harder to discount, but these reports have not yet been prepared as a coordinated scientifically controlled study. The turbine companies and organizations buying clusters of the turbines often have considerable power over affected communities, through agreements with local administrators and contracts with residents for use of the land. In many cases the residents of wind farms have had to sign agreements forbidding public complaints.

The advocates of the new large machines respond to complaints by residents and their doctors by stating that people would not complain if they received adequate payment for the use of their land as a wind farm. There have been many statements belittling distressed or even seriously ill people, often along the lines that they are just awkward and resistant to progress. Objections are increasing however, and in a recent decision the Victorian government has decreed that wind turbines must be at least 2 km away from inhabited areas.

With audible noise, the loudness of the sound is often emphasised whereas it is only one factor. Consider the effect of music. It can have profound effects on behaviour even when very quiet. This can be shown experimentally. If you play Mozart to mice for a few hours they find their way out of a maze much faster than mice that have had to listen to noise. Similarly music can alleviate pain and is now used clinically for this purpose. The loudness of the music is almost irrelevant. It is the sequence of harmonic tones that is important in producing the effects. It is surely similar with noise. If you are nodding off to sleep and the wind picks up, starting a group of wind turbines and your brain picks up a quiet crunch-crunch-crunch, in an irregular and unpredictable sequence because the various turbines are not synchronous, you may not imagine a monster approaching but primitive circuits in your amygdala, prefrontal cortex and other areas of your brain will automatically fire off a stress response, triggering an increase in adrenaline and cortisol secretion. This fundamental mechanism has been an important factor in our survival as a species but we have not adapted to these previously unknown disturbances. Not good for a restful sleep.

After looking at evidence from several seemingly disparate areas of research it seems to me that the effect of the current wind farms is not confined to the noise they make. I am

convinced that the evidence suggesting tissue damage both to people and to a wide range of other species is strong enough to sound a warning of environmental damage far beyond 2 km both on land and on water.

That the disturbance caused by the new large turbines is not trivial is highlighted by a recent decision by the UK Ministry of Defence (MOD) objecting to plans to build wind turbines on the north-west coast of England and the south-west coast of Scotland. Why? Because the vibrations, the "seismic noise" from such wind farms would interfere with the MOD instruments that detect terrorist bombs.

So, what do we know about the seismic noise of wind turbines? Quite a lot actually, but it has not yet received as much attention as it warrants. Like the UK MOD, scientists seeking to find evidence of gravitational waves have extremely sophisticated equipment designed to detect vibrations in rock, soil and water. Any device producing such vibrations can interfere with their research, so several centres, notably the Laser Interferometric Gravitational Wave Observatory (LIGO), University of Oregon, near the Stateline Wind Project, and the VIRGO European Gravitational Observatory in Pisa, near a small wind farm, have done detailed measurements of the generation and transmission of seismic vibrations from large wind turbines. Both of these centres were able to detect seismic vibrations travelling through soil, rock and water. The vibrations were correlated unambiguously with the operation of the wind turbines. The distance travelled by these vibrations may surprise those who talk about siting homes no closer than 2 kilometres from the turbines. The seismic vibrations remained strong beyond 10 kilometres and were still detectable at 18 kilometres.

It is important then to ask the question whether vibrations can affect health. Here we can refer to a quite extensive literature on communication between creatures. These range from the simplest multicellular organisms such as *Physarum polycephalum*, a yeast that can at times join with its neighbours and coordinate joint behaviour by transmitting vibrations from cell to cell, to a wide range of insects that transmit information to others of their species using a range of different mechanisms. In most species the frequencies used are below 20 Hz and transmission is through solids, usually the fine stems of flowers and leaves. The vibrations produced in a plant stem by a small insect are so tiny they are undetectable without very sensitive equipment. For a small insect however they are immensely significant, sending information about potential threats, about food, and of

RH7

course courtship. Most marine creatures, some of them very small, transmit information through water, also usually by low frequency vibration. All fish are very sensitive to low frequency vibrations and any angler will tell you that merely walking on the side of a lake will send most fish scurrying out of range of their net.

The sensitivity of earthworms to vibration is well-known not only to anglers but to predators that have learned to bring the worms to the surface by a carefully calculated series of taps on the ground. Here it is important to note that there are many reports from farmers that seagulls no longer follow the plough in areas near wind turbines. It has been suggested that the seagulls have learned that the worms have all been driven away and that in that area the farmer's plough will not bring breakfast to the surface. They must go elsewhere for their food.

How many of the species found in the soil and waterways have been affected by wind farm vibrations? We do not know because the necessary environmental and ecological studies have simply not been done. There are many anecdotal reports but it is surely urgent that we learn a great deal more. Of particular concern is that many farmers have reported that bees are no longer seen in the vicinity of wind farms.

What is known of the effect of vibrations on people working in industry? Here there is a great deal of information, but it is not widely known. Much of what has been discovered over the last three decades is reported by Mariana Alves-Pereira and Nuño Castelo Branco of Portugal. These extensive studies report numerous serious illnesses and, yes, many deaths, mainly from unusual cancers. A particularly characteristic finding is a thickening of the fibrous sheath surrounding the heart, the pericardium. Diseases such as type I diabetes and epilepsy developing late in life were also found and unusual malignant tumours were seen in the lungs, colon and brain. Rage attacks occurred in some individuals and sudden attacks of nonconvulsive mental defects were seen. These illnesses were caused by low frequency vibrations and developed slowly over many years, with deaths usually occurring after five years of exposure. The low frequency induced disease complex is called Vibro Acoustic Disease, or VAD and is thought to be the result of disruption of the fine fibres that connect the cells of the body. This disease complex is not yet widely recognised clinically or legally and this has seriously delayed diagnosis. Detailed experimental studies of VAD pathology have been reported. A characteristic finding is the production of excess collagen in the absence of an

inflammatory response. This results in the thickening of blood vessel walls and abnormal gas flow in the lungs. Other findings in the experimental studies were unusual cell death without the usual "cell suicide" mechanism of apoptosis.

So, what can we expect from the noise and vibrations caused by wind farms? Many of the illnesses caused by industrial vibrations would not be associated with wind farms by doctors seeing such patients. Someone develops a heart disease, a brain tumour or gets a stroke five years after a wind farm starts up a few kilometres from their home. Or they have their first epileptic fit very late in life, or they get a cancer in the lung or bowel. Few doctors today would make the connection with the wind farm. A diagnosis of VAD could be made by detecting a thickening of the pericardium, but this would not be done unless the clinician suspected VAD. The association of this disease with wind farm operation is not widely known.

Putting all this together, it seems obvious to me that there is a very urgent need to study disease rates and death rates in the areas near wind farms and in "control" areas more than 10 km away. There is also an urgent need to organise clinical and epidemiological studies to seek further evidence of the diseases and pathology described in the studies of industrial Vibro Acoustic Disease. There is similarly a very urgent need for veterinarians and ecologists to follow up the reports from farmers all around the world of abnormalities in farm animals near current large wind turbines, as with chickens that are hatching with crossed beaks and other abnormalities, and stock of many types being born with unusual abnormalities. Above all I feel that there is an urgent need to study the epidemiology of organisms that live in the soil and water around wind farms. These organisms are known to communicate by low frequency vibration. All of this must be correlated with precise measurements of noise and vibration associated with wind turbine operation. Such measurements must be made on the turbine towers, on surrounding soils and on surrounding buildings out to at least 10 km.

And what of the prospects for wind power today? A potentially extremely valuable source of auxiliary power I would say, but definitely not if it continues to be developed for massive commercial gain as at present. Instead of covering the planet with small quiet wind turbines feeding continuously into an international power grid we have "wind farms" springing up as concentrated power producing enterprises that are as much like a farm as an open cut coal mine.

RH8

Nature and Society, October-November 2011, pp. 7-9

Max Whisson, MB, BS FRCPath, is a retired pathologist with a strong interest in ecological issues. He invented the Whisson Windmill, a device for extracting water from the atmosphere.

Download original document: *Nature and Society*, October-November 2011

Some possibly related stories:

- Wind turbine placement must consider vibration effect on animals
- Investigation into wind farms and noise
- Distribution of breeding birds around upland wind farms
- Bird species of concern at wind farms in New Zealand
- Large scale risk-assessment of wind-farms on population viability of a globally endangered long-lived raptor
- 'Wind Farms' — Some Deep Ecology Considerations

Wind Turbines as Electricity Source Aren't Reliable

Wind forecasting has certainly improved from 40 years ago, but its reliability then, and now, is irrelevant. A 100% accurate forecast of wind doesn't boost the low efficiency of wind turbines.

July 20, 2015 6:38 p.m. ET

The July 13 letter from Rob Gramlich of the American Wind Energy Association makes a number of unsupportable statements, the most egregious of which is "grid operators can easily manage variability from wind." He further stretches the truth with "advances in wind forecasting have now made wind energy even more reliable." Both statements are unsupported by the facts. Wind forecasting has certainly improved from 40 years ago, but its reliability then, and now, is irrelevant. A 100% accurate forecast of wind doesn't boost the low efficiency of wind turbines.

An industrial wind facility (IWF) operates with turbines that produce about one-third of their rated output. That means they will supply somewhere between 0% and 100% of their capacity but will average only a third of that capacity. This large difference between their maximum output and their actual output means that the electric grid must be able to accept, and use, not the "20% of the electricity in 23 states" that Mr. Gramlich claims, but between 0% and 60%. No matter the reliability of wind forecasts, no grid can be so accommodating. The only way to accommodate such surges is to curtail either these wind surges or shut down other, cheaper and more reliable suppliers. The first would so reduce the efficiency of wind as to make it laughable. The second would necessitate shutting down base load suppliers, the cheapest and most reliable of all sources. A simple analysis of wind data in the U.S. shows that wind speeds are highly synchronized over very large areas. This means that when one IWF is producing lots of energy, all the others, within a few hundred miles will be too. Such synchronized surges mean that grid operators cannot easily manage variability from wind.

The net is that until wind turbines can be highly efficient (75+%) they will never be a serious competitor with other sources. No one expects Mother Nature to be so cuddly. No one-third efficient source of energy can be useful to the electric grid, no matter its source.

Fred Ward

Stoddard, N.H.

RH9

Northwestern Energy asks to increase rates

Hearing planned over request to raise SD prices for first time since 1980

By BOB MERCER
Capitol Correspondent

PIERRE — The state Public Utilities Commission will hold a public hearing next month in Yankton about NorthWestern Energy's request to raise rates for the company's South Dakota electricity customers.

The increases would be the first for electricity rates by the company since 1980.

The commission's decision to host a hearing came in response to a petition filed by Angela Wiebelhaus, of Yankton. She submitted signatures from 27 residents of the Yankton area.

Wiebelhaus said most of the people who signed the petition didn't know about the proposed increase until she went around the neighborhood.

She said her concern is for people — "our fellow man" — who will feel financially pinched.

"Things keep going higher and higher... We all want to stay in our houses," she said.

Wiebelhaus added, "We really do have good service in Yankton, I have to say that."

The hearing is set for 7 p.m. May 14 in the Best Western Kelly Inn on S.D. Highway 50 on Yankton's east side.

NorthWestern wants to collect $26.5 million more annually from the company's 61,200 South Dakota electricity customers.

That would be a 20.24 percent rate increase.

According to the PUC, NorthWestern's plan would cost the average residential

See ENERGY Page A6

RH 10

A Problem With Wind Power

[www.aweo.org] [click here for printer-friendly PDF]

by Eric Rosenbloom

Wind power promises a clean and free source of electricity that would reduce our dependence on imported fossil fuels and the output of greenhouse gases and other pollution. Many governments are therefore promoting the construction of vast wind "farms," encouraging private companies with generous subsidies and regulatory support, requiring utilities to buy from them, and setting up markets for the trade of "green credits" in addition to actual energy. The U.S. Department of Energy (DOE) aims to see 5% of our electricity produced by wind turbine in 2010. Energy companies are eagerly investing in wind power, finding the arrangement quite profitable.

A little research, however, reveals that wind power does not in fact live up to the claims made by its advocates [see part I], that its impact on the environment and people's lives is far from benign [see part II], and that with such a poor record and prospect the money spent on it could be much more effectively directed [see part III]. Links to aid the reader's own research are provided throughout this paper as well as at the end [see Links; off-site links will automatically open to a new window or tab]. Click here for an abbreviated version of this paper. Click here for an even briefer version (a handy model for letters). This paper is also available as a 7-page typeset PDF file (156 KB) -- click here.

I.

[Top • II • III • Links]

In 1998, Norway commissioned a study of wind power in Denmark and concluded that it has "serious environmental effects, insufficient production, and high production costs."

Denmark (population 5.3 million) has over 6,000 turbines that produced electricity equal to 19% of what the country used in 2002. Yet no conventional power plant has been shut down. Because of the intermittency and variability of the wind, conventional power plants must be kept running at full capacity to meet the actual demand for electricity. Most cannot simply be turned on and off as the wind dies and rises, and the quick ramping up and down of those

RH 11

that can be would actually increase their output of pollution and carbon dioxide (the primary "greenhouse" gas). So when the wind is blowing just right for the turbines, the power they generate is usually a surplus and sold to other countries at an extremely discounted price, or the turbines are simply shut off.

A writer in *The Utilities Journal* (David J. White, "Danish Wind: Too Good To Be True?," July 2004) found that 84% of western Denmark's wind-generated electricity was exported (at a revenue loss) in 2003, i.e., Denmark's glut of wind towers provided only 3.3% of the nation's electricity. According to *The Wall Street Journal Europe,* the Copenhagen newspaper *Politiken* reported that wind actually met only 1.7% of Denmark's total demand in 1999. (Besides the amount exported, this low figure may also reflect the actual *net* contribution. The large amount of electricity used by the turbines themselves is typically not accounted for in the usually cited output figures. Click here for information about electricity use in wind turbines.) In *Weekendavisen* (Nov. 4, 2005), Frede Vestergaard reported that Denmark as a whole exported 70.3% of its wind production in 2004.

Denmark is just dependent enough on wind power that when the wind is not blowing right they must import electricity. In 2000 they imported more electricity than they exported. And added to the Danish electric bill are the subsidies that support the private companies building the wind towers. Danish electricity costs for the consumer are the highest in Europe. [Click here for a detailed and well referenced examination by Vic Mason.]

The head of Xcel Energy in the U.S., Wayne Brunetti, has said, "We're a big supporter of wind, but at the time when customers have the greatest needs, it's typically not available." Throughout Europe, wind turbines produced on average less than 20% of their theoretical (or *rated*) capacity. Yet both the British and the American Wind Energy Associations (BWEA and AWEA) plan for 30%. The figure in Denmark was 16.8% in 2002 and 19% in 2003 (in February 2003, the output of the more than 6,000 turbines in Denmark was 0!). On-shore turbines in the U.K. produced at 24.1% of their capacity in 2003. The average in Germany for 1998-2003 was 14.7%. In the U.S., usable output (representing wind power's contribution to consumption, according to the Energy Information Agency) in 2002 was 12.7% of capacity (using the average between the AWEA's figures for installed capacity at the end of 2001 and 2002). In California, the average is 20%. The Searsburg plant in Vermont averages 21%, declining every year. This percentage is called the *load factor* or *capacity factor.* The rated generating capacity only occurs during 100% ideal conditions, typically a sustained wind speed over 30 mph. As the wind slows, electricity output falls off exponentially. [Click here for more about the technicalities of wind as a power source, as well as energy consumption data. Click here for conversions between and explanations of energy units.]

In high winds, ironically, the turbines must be stopped because they are easily damaged. Build-up of dead bugs has been shown to halve the maximum power generated by a wind turbine, reducing the average power generated by 25% and more. Build-up of salt on off-shore turbine blades similarly has been shown to reduce the power generated by 20%-30%.

Eon Netz, the grid manager for about a third of Germany, discusses the technical problems of connecting large numbers of wind turbines [click here]: Electricity generation from wind fluctuates greatly, requiring additional reserves of "conventional" capacity to compensate; high-demand periods of cold and heat correspond to periods of low wind; only limited forecasting is possible for wind power; wind power needs a corresponding expansion of the high-voltage and extra-high-voltage grid infrastructure; and expansion of wind power makes

the grid more unstable. [Click here for a good explanation of why wind-generated power can not usefully contribute to the grid and only causes greater problems, including the use of *more* "conventional" fuel.]

Despite their being cited as the shining example of what can be accomplished with wind power, the Danish government has cancelled plans for three offshore wind farms planned for 2008 and has scheduled the withdrawal of subsidies from existing sites. Development of onshore wind plants in Denmark has effectively stopped. Because Danish companies dominate the wind industry, however, the government is under pressure to continue their support. Spain began withdrawing subsidies in 2002. Germany reduced the tax breaks to wind power, and domestic construction drastically slowed in 2004. Switzerland also is cutting subsidies as too expensive for the lack of significant benefit. The Netherlands decommissioned 90 turbines in 2004. Many Japanese utilities severely limit the amount of wind-generated power they buy, because of the instability they cause. For the same reason, Ireland in December 2003 halted all new wind-power connections to the national grid. In early 2005, they were considering ending state support. In 2005, Spanish utilities began refusing new wind power connections. In 2006, the Spanish government ended -- by emergency decree -- its subsidies and price supports for big wind. In 2004, Australia reduced the level of renewable energy that utilities are required to buy, dramatically slowing wind-project applications. On August 31, 2004, Bloomberg News reported that "the unstable flow of wind power in their networks" has forced German utilities to buy more expensive energy, requiring them to raise prices for the consumer. [*Note, April 2012:* State support for industrial wind fluctuates, but the trend noted here has continued.]

A German Energy Agency study released in February 2005 after some delay [click here] stated that increasing the amount of wind power would increase consumer costs 3.7 times more than otherwise and that the theoretical reduction of greenhouse gas emissions could be achieved much more cheaply by simply installing filters on existing fossil-fuel plants. A similar conclusion was made by the Irish grid manager in a study released in February 2004 [click here for 172-KB PDF]: "The cost of CO_2 abatement arising from using large levels of wind energy penetration appears high relative to other alternatives."

In Germany, utilities are forced to buy renewable energy at sometimes more than 10 times the cost of conventional power, in France 3 times. In the U.K., the *Telegraph* has reported that rather than providing cheaper energy, wind power costs the electric companies £50 per megawatt-hour, compared to £15 for conventional power. The wind industry is worried that the U.K., too, is starting to see that it is only subsidies and requirements on utilities to buy a certain amount of "green" power that prop up the wind towers and that it is a colossal waste of resources. The BWEA has even resorted to threatening prominent opponents as more projects are successfully blocked. Interestingly, long-term plans for energy use and emissions reduction by both the U.K. and the U.S. governments do not mention wind [click here for more about this (the article is in Spanish)]. Flemming Nissen, head of development at the Danish utility Elsam, told a meeting in Copenhagen, May 27, 2004, "Increased development of wind turbines does not reduce Danish CO_2 emissions."

Installation of wind towers cannot hope to keep up with the continuing increase of energy use. Denmark's annual production from wind turbines increased 28 petajoules (PJ, 1 PJ ≈ 278,000 MW-h) from 1990 to 1998, but total energy consumption increased 115 PJ. The International Energy Agency reports that from 1990 to 2002, Denmark's annual production from wind turbines rose 3,689 GW-h, but total electricity production rose 12,730 GW-h. The

RH 12

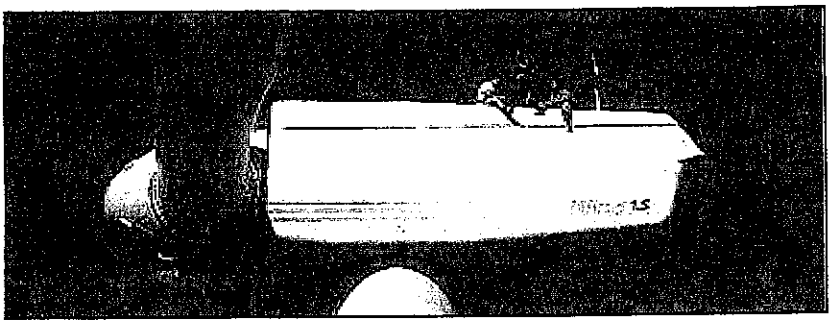
Danish government's National Environmental Research Institute reported that in 2003 greenhouse gas emissions increased 7.3% over 2002 levels [click here].

In the U.K. (population 60 million), 1,010 wind turbines produced 0.1% of their electricity in 2002, according to the Department of Trade and Industry. The government hopes to increase the use of renewables to 10.4% by 2010 and 20.4% by 2020, requiring many tens of thousands more towers. As demand will have grown, however, even more turbines will be required. In California (population 35 million), according to the state energy commission, 14,000 turbines (about 1,800 MW capacity) produced half of one percent of their electricity in 2000. Extrapolating this record to the U.S. as a whole, and without accounting for an increase in energy demand, well over 100,000 1.5-MW wind towers (costing $150-300 billion) would be necessary to meet the DOE's goal of a mere 5% of the country's electricity from wind by 2010.

The DOE says there are 18,000 square miles of good wind sites in the U.S., which with current technology could produce 20% of the country's electricity. This rosy plan, based on the wind industry's sales brochures, as well as on a claim of electricity use that is only three-quarters of the actual use in 2002, would require "only" 142,060 1.5-MW towers. They also explain, "If the wind resource is well matched to peak loads, wind energy can effectively contribute to system capacity." That's a big *if* -- counting on the wind to blow exactly when demand rises -- especially if you expect the wind to cover 20% (or even 5%) of that demand. As in Denmark and Germany, you would quickly learn that the prudent thing to do is to look elsewhere first in meeting the load demand. And we'd be stuck with a lot of generally unhelpful hardware covering every windy spot in the U.S., while the developers would be looking to put up yet more to make up for and deny their failings. Click here to see what has already happened in California and Germany and would happen everywhere.

As in Denmark and Germany, the electricity from those towers -- no matter how many -- would be too variable to provide the predictable supply that the grid demands. They would have no effect on established electricity generation, energy use, or continuing pollution. Christopher Dutton, the CEO of Green Mountain Power, a partner in the Searsburg wind farm in Vermont and an advocate of alternative energy sources, has said (in an interview with Montpelier's *The Bridge*) that there is no way that wind power can replace more traditional sources, that its value is only as a supplemental source that has no impact on the base load supply. "By its very nature, it's unreliable," says Jay Morrison, senior regulatory counsel for the National Rural Electric Cooperative Association. [Click here for a report on the Searsburg plant's poor record.] [Click here to read about wind power's minuscule impact on CO_2 emissions.] [Click here for a look at a U.N.-sponsored Intergovernmental Panel on Climate Change Technical Paper that similarly shows wind power's miniscule part in the mitigation of CO_2 release.]

As Country Guardian, a U.K. conservation group, puts it, wind farms constitute an *increase* in energy supply, not a replacement. They do not reduce the costs -- environmental, economic, and political -- of other means of energy production. If wind towers do not reduce conventional power use, then their manufacture, transport, and construction only increases the use of dirty energy. The presence of "free and green" wind power may even give people license to use *more* energy.



II.

[Top • I • III • Links]
[*this section:* Size; Birds, bats, and other wildlife; Noise; Jobs, taxes, and property values; Other problems; Conclusion]

Size

Pictures from the energy companies show slim towers rising cleanly from the landscape or hovering faintly in the distant haze, their presence modulated by soft clouds behind them. But a 200- to 300-foot tower supporting a turbine housing the size of a bus and three 100- to 150-foot rotor blades sweeping over an acre of air at more than 100 mph requires, for a start, a large and solid foundation. On a GE 1.5-MW tower, the turbine housing, or *nacelle,* weighs over 56 tons, the blade assembly weighs over 36 tons, and the whole tower assembly totals over 163 tons. [Click here for a perspective on their size. Click here for the specs of popular models.]

As FPL (Florida Power & Light) Energy says, "a typical turbine site takes about a 42×42-foot-square graveled area." Each tower (and a site needs at least 15-20 towers to make investment worthwhile) requires a huge hole filled with steel rebar–reinforced concrete (e.g., 1,250 tons in each foundation at the facility in Lamar, Colo.). According to Country Guardian, the hole is large enough to fit three double-decker buses. At the 89-turbine Top of Iowa facility, the foundation of each 323-foot assembly is a 7-feet-deep 42-feet-diameter octagon filled with 25,713 pounds of reinforced steel and 181 cubic yards of concrete. The foundations at the Wild Horse project in Washington are 30 feet deep. At Buffalo Mountain in Tennessee, too, each foundation is at least 30 feet deep and may contain more than 3,500 cubic yards of concrete (production of which is a major source of CO_2). On Cefn Croes in Wales the developer built a complete concrete factory on the site, which is not unusual, as well as opened quarries to provide rock for new roads -- neither of which activities were part of the original planning application [click here for photos of the abhorrent destruction on Cefn Croes].

On many such mountain ridges as well as other locations, it would be necessary to blast into the bedrock, as Enxco's New England representative, John Zimmerman, has confirmed, possibly disrupting the water sources for wells downhill. At the Waymart plant in Pennsylvania, the foundations extend 30-40 feet into the bedrock. At Romney Marsh in southern England, foundation pillars will be sunk 110 feet. For each 6-feet-deep foundation at the Crescent Ridge facility in Illinois, another 24 feet was dug out and filled with sand. Construction at a site on the Slieve Aughty range in Ireland in October 2003 caused a 2.5-mile-long bog slide.

(Building on peat bogs is recognized as a serious disruption of an important carbon sink; the Royal Society for the Protection of Birds opposes wind development on the Scottish island of Lewis because the turbines would take 25 years to theoretically save the amount of carbon

RHD

that their construction will release from the peat (not to mention the threat to birds -- see below). Clearing forests for facilities on mountain ridges is an analogous situation. Such mountaintop clearing has serious runoff implications as well as documented at the Meyersdale plant in Pennsylvania.)

FPL Energy also says, "although construction is temporary [a few months], it will require heavy equipment, including bulldozers, graders, trenching machines, concrete trucks, flatbed trucks, and large cranes." [Click here for pictures of towers being installed.] Getting all the equipment, as well as the huge tower sections and rotor blades, into an undeveloped area requires the construction of wide straight strong roads. Many existing roads, particularly in hilly areas, are inadequate. For the Buffalo Mountain project, curves were widened, switchbacks were eliminated, and portions were repaved. The weight of the material has damaged existing roads. Many an ancient hedgerow in England has been sacrificed for access to project sites.

The destructive impact that such construction would have, for example, on a wild mountain top, is obvious. Erosion, disruption of water flow, and destruction of wild habitat and plant life would continue with the presence of access roads, power lines, transformers, and the tower sites themselves. For better wind efficiency, each tower requires trees to be cleared. Vegetation would be kept down with herbicides, further poisoning the soil and water. Each tower should be at least 5-10 times the rotor diameter from neighboring towers and trees for optimal performance. For a tower with 35-meter rotors, that is 1,200-2,400 feet, a quarter to a half of a mile. A site on a forested ridge would require clearing 45-90 acres per tower to operate optimally (although only 4-6 acres of clearance per tower, the towers spaced every 500-1,000 feet, is typical, making them almost useless when the wind is not a perfect crosswind). The Danish grid operator Eltra has found that a turbine can decrease the production of another turbine 5 kilometers (3.1 miles) away. The proposed 45-square-mile facility on the Scottish island of Lewis represents 50 acres for each megawatt of rated capacity. FPL Energy says it requires 40 acres per installed megawatt, and the U.S. Environmental Protection Agency (EPA) says 60 acres is likely. Facilities worldwide generally use 30-70 acres per megawatt, i.e., about 120-280 acres for every megawatt of likely average output (25% capacity factor). [Click here for a list of the areas of some facilities.]

GE boasts that the span of their rotor blades is larger than the wingspan of a Boeing 747 jumbo jet. The typical 1.5-MW assembly is two stories higher than the Statue of Liberty, including its base and pedestal. The editor of *Windpower Monthly* wrote in September 1998, "Too often the public has felt duped into envisioning fairy tale 'parks' in the countryside. The reality has been an abrupt awakening. Wind power stations are no parks." They are industrial and commercial installations. They do not belong in wilderness areas. As the U.K. Countryside Agency has said, it makes no sense to tackle one environmental problem by instead creating another.

In Vermont, billboards are banned from the highways, and development -- especially at sites above 2,500 feet -- is subject to strong environmental laws, yet many who call themselves environmentalists absurdly support the installation of wind farms on our mountain ridge lines as a desirable trade-off, ignoring wind's dismal record as described in part I.

Even if one thinks that jumbo-jet-sized wind towers dominating every ridge line in sight like a giant barbed-wire fence is a beautiful thing, many people are drawn to wild places to avoid

such reminders of human industrial might. Many communities depend on such tourists, who will now seek some other -- as yet unspoiled -- retreat.

Birds, Bats, and Other Wildlife

The spinning blades kill and maim birds and bats. The Danish Wind Industry Association, for example, admits as much by pointing out that so do power lines and automobiles. (The argument follows the aesthetic one that the landscape is already blighted in many ways, so why not blight it some more?) The industry claims that moving from lattice-work towers, which provided roosting and nesting platforms, to solid towers, as well as larger lower-rpm blades, solved the problem, and that studies find very few dead birds around wind turbines. They ignore the facts that the larger blades are in fact slicing the air faster (150-200 mph at their tips, that scavengers will have removed most injured and dead birds before researchers arrive for their periodic surveys, and that many areas where dead and injured birds (and bats -- see below) might fall are inaccessible.

Especially vulnerable are large birds of prey that like to fly in the same sorts of places that developers like to construct wind towers. Fog -- a common situation on mountain ridges -- aggravates the problem for all birds. Guidelines from the U.S. Fish and Wildlife Service (FWS) state that wind towers should not be near wetlands or other known bird or bat concentration areas or in areas with a high incidence of fog or low cloud ceilings, especially during spring and fall migrations. It is illegal in the U.S. to kill migratory birds. The FWS has prevented any expansion of the several Altamont Pass wind plants in California, rejecting as well the claim that new solid towers would mitigate the problem. [Click here to read the Fish and Wildlife Service recommendations. (Click here to read new recommendations released in 2010.)]

A 2002 study in Spain estimated that 11,200 birds of prey (many of them already endangered), 350,000 bats, and 3,000,000 small birds are killed each year by wind turbines and their power lines. Another analysis [click here -- the article is in Spanish] found that it is officially recognized (and obscured, generally by implying monthly figures as annual) that on average a single turbine tower kills 20-40 birds each year. The U.S. FWS noted that European wind power may kill up to 37 birds per turbine each year. The wind industry, in contrast, cites the absurdly low results of a single very spotty study at one site as gospel.

Windpower Monthly reported in October 2003 that the shocking number of bats being killed by wind towers in the U.K. is causing trouble for developers. The president of Bat Conservation International, Merlin Tuttle, has said, "We're finding kills even in the most remote turbines out in the middle of prairies, where bats don't feed." At least 2,000 bats were killed on Backbone Mountain in West Virginia in just 2 months during their 2003 fall migration. Continuing research has found that rate to be typical all year, or even low, for wind turbines on forested ridges [click here].

Wildlife on the ground is displaced as well. Prairie birds are especially affected by disturbance of their habitat, and construction on mountain ridges diminishes important forest interior far beyond the extent of the clearing itself. A visitor to the Backbone Mountain facility wrote [click here], "I looked around me, to a place where months before had been prime country for deer, wild turkey, and yes, black bear, to see positively no sign of any of the animals about at all. This alarmed me, so I scouted in the woods that afternoon. All afternoon, I found no sign, sight, or peek of any animal about."

RHY

Noise

The same West Virginia writer found the noise from the turbines on Backbone Mountain to be "incredible. It surprised me. It sounded like airplanes or helicopters. And it traveled. Sometimes, you could not hear the sound standing right under one, but you heard it 3,000 yards down the hill." Yet the industry insists such noise is a thing of the past. Indeed, new turbines may have quieter bearings and gears, but the huge magnetized generators can not avoid producing a low-frequency hum, and the problem of 100-foot rotor blades chopping through the air at 150-200 mph also is insurmountable. Every time each rotor passes the tower, the compression of air produces a deep resonating thump. In addition, the difference in wind speed between the top and bottom of the rotor creates a rhythm in the "swishing" of the blades through the air. The sound is projected outwards, so that it is actually fairly quiet directly beneath the turbine, but farther away the resulting sound, especially of several towers together, has been described to be as loud as a motorcycle, like aircraft continually passing overhead, a "brick wrapped in a towel turning in a tumble drier," "as if someone was mixing cement in the sky," "like a train that never arrives." It is a relentless rumble like unceasing thunder from an approaching storm. Enxco's John Zimmerman admitted at a meeting in Lowell, Vt., "Wind turbines don't make good neighbors." [Click here for one story from Fenner, N.Y., where many other noises have been described, including an eerie screeching as the blade and nacelle assembly turns to catch the wind -- click here for a video recording of these noises.]

The penetrating low-frequency aspect to the noise, a thudding vibration, much like the throbbing bass of a neighboring disco, travels much farther than the usually measured "audible" noise. It may be why horses who are completely calm around traffic and heavy construction are known to become very upset when they approach wind turbines [click here]. Many people have complained that it causes anxiety and nausea. The only way to reduce it is to reduce the efficiency of the electricity production, i.e., reduce the illusion of profitability. It can't be done.

Advocates, when not denying the noise outright, suggest that the wind itself masks any noise the turbine assembly makes. Rustling leaves, however, are a very different sound than the thumping of a wind facility. And in developers' output projections, they point out that the wind is very much more steady and stronger up at the top of the towers, so even that rustling down on the ground is not always there when the turbines are turning. This is often the case at night and always the case in winter. In Oregon, wind developers complained they could not comply with regulations limiting the increase of noise in rural and wild areas. In May 2004, the state weakened the noise regulations so installation of wind facilities could go ahead.

The European Union (E.U.) published the results of a 5-year investigation into wind power, finding noise complaints to be valid and that noise levels could not be predicted before developing a site. The AWEA acknowledges that a turbine is quite audible 800 feet away. The National (U.S.) Wind Coordinating Committee (NWCC) states, "wind turbines are highly visible structures that often are located in conspicuous settings ... they also generate noise that can be disturbing to nearby residents." The NWCC recommends that wind turbines be installed no closer than half a mile from any dwelling. German marketer Retexo-RISP specified in 2004 that turbines not be placed within 2 kilometers (1.25 miles) of any dwelling [click here]; wind turbine towers and their blades have become much bigger since

then, so that distance would have to be increased as well.

Communities in Germany, Wales, and Ireland claim that 3,000 feet away the noise is significant. Individuals around the world say they have to close their windows and turn on the air conditioner when the wind turbines are active. The noise of a wind plant in Ireland was measured in 2002 at 60 dB 1 km (3,280 ft) *up*wind. The subaural low-frequency noise was above 70 dB (which is 10 *times* as loud on the logarithmic decibel scale). A German study in 2003 found significant noise levels 1 mile away from a 2-year-old wind farm of 17 1.8-MW turbines, especially at night. In mountainous areas the sound echos over larger distances. A neighbor of the 20-turbine Meyersdale facility in southwest Pennsylvania found the noise level at his house, about a half mile away, to average 75 dB(A) over a 48-hour period, well above the level that the EPA says prevents sleep. In Vermont, the director of Energy Efficiency for the Department of Public Service, Rob Ide, has said that the noise from the 11 550-KW Searsburg turbines is significant a mile away. Residents 1.5 and even 3 miles downwind in otherwise quiet rural areas suffer significant noise pollution. A criminal suit has been allowed to go forward in Ireland against the owner and operator of a wind plant for noise violations of their environmental law. Also in Ireland, a developer has been forced to compensate a homeowner for loss of property value, and many people have had their tax valuation reduced. In the Lake District of northwest England, a group has sued the owner and operator of the Askam wind plant, claiming it is ruining their lives.

In January 2004, a couple was awarded 20% of the value of their home from the previous owners who did not tell them the Askam wind plant was about to be constructed 1,800 feet away: "because of damage to visual amenity, noise pollution, and the irritating flickering caused by the sun going down behind the moving blades." The towers of this plant are only 40 meters (130 feet) high, with the rotors extending a further 24 meters (75 feet). Steve Molloy of West Coast Energy responded that loss of value of a property, although unfortunate, was not a material planning consideration and did not undermine the industry's argument that the benefits of sustainable energy outweighed the objections. [Click here for the news story.]

Don Peterson, senior director of Madison Gas & Electric, which operates 31 wind towers in Kewaunee County, Wisconsin, similarly dismisses complaints, saying that most people, but not all, will get used to the sound of the machines. "Like any noise, if you don't like it, your brain is going to focus on it," he comfortingly told the Beloit *Daily News*. Especially in relatively undeveloped areas, there can be no question that the unnatural noise from a wind facility will be prominent. Just a 10-dB increase over existing levels (a typical limit for such projects) represents the subjective perception of a *doubling* of noise level.

It has been reported that one of the farmers who leases land for the wind towers had to buy the neighbors' property because of the problems (not just noise but also flicker and lights at night). Wisconsin Public Service, operator of another 14 turbines in Kewaunee County, in 2001 offered to buy six neighboring properties; two owners accepted, but two others filed a lawsuit in January 2004. [Click here for a report of a study by Lincoln Township of the many ill effects of the Kewaunee County turbines.] On January 6, 2004, the *Western Morning News* of Devon published three articles about noise problems, particularly the health effects of low-frequency noise, from wind turbines. Another interesting report, which notes that the Nazis used low-frequency noise for torture, was published in the January 25 *Telegraph* [click here].

RHS

Jobs, Taxes, and Property Values

Despite the energy industry's claim that wind farms create jobs ("revitalize struggling rural communities," says Enxco), the fact is that, after the few months of construction -- much of it handled by imported labor from the turbine company -- a typical large wind facility requires just one maintenance worker. Of the 200 workers involved in construction of the 89-turbine Top of Iowa facility, only 20 were local; seven permanent jobs were created. The average nationwide is 1-2 jobs per 20 MW installed capacity.

The energy companies also claim that they increase the local tax base. But that is more than offset by the loss of open land, the loss of tourism, the stagnation or decrease in property values throughout a much wider area, the tax credits such developments typically enjoy, and the taxes and fees consumers must pay to subsidize the industry. A lcoal "windfall" may also be offset by a corresponding loss of state funds. Even surveys by wind promoters show that a quarter to a third of visitors would no longer come if wind turbines were installed. That is a huge loss in areas that depend on tourism. The wind developers say that the turbines themselves are an attraction, but visitor centers at wind farms in Britain are already closing for lack of business. A few people get more money from leasing their land for the towers (until the developer starts withholding it for some small-print reason, or even disappears after the tax advantages slow down -- Altamont Pass in California is littered with broken-down wind towers owned by companies long gone), but that's the opposite of an argument for the general good.

Wind advocates insist that property values are not affected by nearby industrial turbines, because there will always be a buyer as it's just a question of taste. That is small comfort to those who already own homes near potential wind-plant sites but whose taste militates against rattling windows and humming walls, flickering lights, 100-foot blades spinning overhead, and giant metal towers and supply roads where once were trees and moose trails.

Other Problems

The industry recognizes that the flicker of reflected light on one side and shadow on the other drives people and animals crazy. And at night, the towers must be lighted, which the AWEA describes as a serious nuisance, destroying the dark skies that many people in rural areas cherish (and that the state of Vermont is on the verge of specifically protecting). Red lights are thought to attract night-migrating birds.

Ice is another problem. It builds up when the blades are still and gets flung off -- as far as 1,500 feet -- when they start spinning. Accumulated ice on the nacelle and tower also falls off. John Zimmerman, the developer of Vermont's Searsburg facility, wrote the following to an AWEA discussion list in 2000. "When there is heavy rime ice build up on the blades and the machines are running you instinctually want to stay away. ... They roar and sound scarey. One time we found a piece near the base of the turbines that was pretty impressive. Three adults jumping on it couldn't break. It looked to be 5 or 6 inches thick, 3 feet wide and about 5 feet long. Probably weighed several hundred pounds. We couldn't lift it. There were a couple of other pieces nearby but we wondered where the rest of the pieces went." Access to Searsburg is restricted when icing is likely. (Even in good weather, they shut the turbines down when giving tours.)

Issues of icing, noise, and structural damage and failure, particularly as they determine

setback requirements, have been extensively documented by John Mollica in response to the proposed expansion of a wind facility on Wachusett Mountain in Massachusetts (between Princeton and Fitchburg). [Click here for the full report or here for a briefer presentation version.]

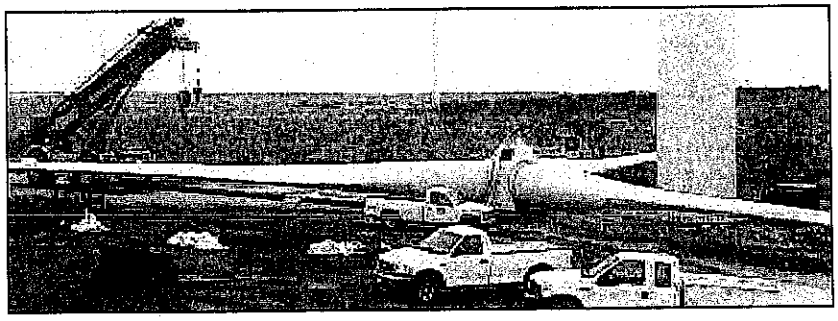
The planners of giant wind installations in Valencia, Spain, mention the dripping and flinging off of motor oil (almost 200 gallons of which may be present in a single 1.5-MW turbine) and cooling and cleaning fluids. The transformer at the base of each turbine contains up to 500 more gallons of oil. The substation transformers where a group of turbines connects to the grid contain over 10,000 gallons of oil each.

The International Association of Engineering Insurers warns of fire: "Damage by fire in wind turbines is usually caused by overheated bearings, a strike of lightning, or sparks thrown out when the turbine is slowing down. ... Even the smallest spark can easily develop into a large fire before discovery is made or fire-fighting can begin."

A 1995 study in Germany estimated that 80% of insurance claims paid for wind turbine damage were caused by lightning. Lightning destroys many towers by causing the blade coatings to peel off, rendering them useless. If the blades keep spinning, the imbalance can bring down the whole tower. The towers are subject to metal fatigue, and the resin blades are easily damaged even by wind. In Wales, Spain, Germany, France (Dec. 22, 2004; click here), Denmark (Jan. 20, 2005), Japan (Feb. 24, 2005), New Zealand (Mar. 10, 2005), and Scotland (Apr. 7, 2005; click here), parts and whole blades have torn off because of high winds, malfunction, and fire, flying as far as 8 kilometers and through the window of a home in one case. Whole towers have collapsed in Germany (as recently as 2002) and the U.S. (e.g., in Oklahoma, May 6, 2005) [Click here for an extensive compilation of accidents.] [Click here for another overview of industrial wind power's environmental problems.]

Conclusion

All of these negative aspects will only become worse if even a small part of the industry's plans for hundreds of thousands of towers becomes reality. At every level, however, the negative impacts must of course be weighed against the benefits. As described in part I, these are neglible.



III.

[Top • I • II • Links]

It is wise to diversify the sources of our energy. But the money and legislative effort invested in large-scale wind generation could be spent much more effectively to achieve the goal of reducing our use of fossil and nuclear fuels.

RH 16

As an example, Country Guardian calculates that for the U.K. government subsidy towards the construction of one wind turbine, they could insulate the roofs of almost 500 houses that need it and save in two years the amount of energy the wind turbine might produce over its lifetime.

Country Guardian also calculates that if every light bulb in the U.K. were switched to a more efficient one, the country could shut down an entire power plant -- something even Denmark, with wind producing as much as 20% of their electricity, is not able to do. According to solar energy consultant and retailer Real Goods, if every household in the U.S. replaced one incandescent bulb with a compact fluorescent bulb, one nuclear power plant could be closed. John Etherington claims that switching the most-used bulb in every house of the U.K. would save as much as the entire output of all existing and proposed on-shore wind plants in that country.

The BWEA itself says that the cost of saving energy is less than half the cost of producing it. According to the California Power Authority (ignoring the subsidies that lower the market price of wind-generated electricity) conservation costs exactly the same per KW-h as wind power. John Zimmerman admitted at a February 2003 meeting in Kirby, Vermont, that we "could do much more for our energy balance by just tightening our belts a little."

As described in part I, wind farms do not bring about any reduction in the use of conventional power plants. Requiring the upgrading of power plants to be more efficient and cleaner would actually do something rather than simply support the image of "green" power that energy companies profit from while in fact doing nothing to reduce pollution or fuel imports. An April 2000 E.U. report found that, using existing technology, increased efficiency could decrease energy consumption by more than 18% by 2020. The U.N.-sponsored Intergovernmental Panel on Climate Change has stated that simple voluntary energy-efficiency improvements in buildings will reduce world energy use 10%-15% by 2020. They state that, with technology already in use, efficiency improvements in buildings, manufacturing, and transport can reduce world carbon emissions more than 50% by 2020.

In the U.S., 61.5% of the energy used is "lost," i.e., only 38.5% of the energy consumed is actually extracted [click here]. In transmission alone, 7.34% of the electricity generated is lost. There is obviously much that can be improved in what we already have and will continue to live with for quite some time..

Electricity represents only 39% of energy use in the U.S. (in Vermont, 20%; and only 1% of Vermont's greenhouse gas emissions is from electricity generation). Pollution from fossil fuels also comes from transportation (cars, trucks, aircraft, and ships) and heating. Despite the manic installation of wind facilities in the U.K., their CO_2 emissions rose in 2002 and 2003. At a May 27, 2004, conference in Copenhagen, the head of development from the Danish energy company Elsam stated, "Increased development of wind turbines does not reduce Danish CO_2 emissions." Demanding better gas mileage in cars, including pickup trucks and SUVs, promoting rail for both freight and travel, and supporting the use of biodiesel (for example, from hemp) would make a huge impact on pollution and dependence on foreign oil, whereas wind power makes none. New-generation diesel-powered cars common in Europe use less than half the fuel as their gasoline counterparts in the U.S.

Wind-power advocates often propose that wind turbines can be used to manufacture hydrogen for fuel cells. This may be an admirable plan (although *Windpower Monthly*

dismisses it for several reasons in a May 2003 article) but is so far in the future that it only serves to underscore the fact that there is no good reason for current construction. And it must be remembered that as wind turbines are unable to produce significant amounts of electricity they would likewise be unable to produce significant amounts of hydrogen. On top of that, a 2004 study by the Institute for Lifecycle Environmental Assessment determined that hydrogen returns only 47% of the energy put into it, compared with pumped hydro returning 75% and lithium ion batteries up to 85%.

On a small scale, where a turbine directly supplies the users and the fluctuating production can be stored, wind can contribute to a home, school, factory, office building, or even small village's electricity. But this simply does not work on a large scale to supply the grid. Even the small benefits claimed by their promoters are far outstripped by the huge negative impacts.

We are reminded that there are trade-offs necessary to living in a technologically advanced industrial society, that fossil fuels will run out, that global warming must be slowed, and that the procurement and transport of fossil and nuclear fuels is environmentally, politically, and socially destructive. Sooner or later the realities of this modern life will have to reach into our own back yards, the commons must be developed for our economic survival, and it would be elitist in the extreme to believe we deserve better. So wilderness areas are sacrificed, rural communities are bribed into becoming live-in (but ineffective) power plants, our governments boast that they are looking beyond fossil fuels (while doing nothing to actually reduce their use), and our electric bills go up to support "investment in a greener future." And at the other end of this trade-off, multinational energy companies reap greater profits and fossil and nuclear fuel use continues to grow.

Many alternative sources of energy, as well as dramatic improvements in the use of current sources, are in development. But wind turbines exist, so they are presented by their manufacturers and managers as *the* solution. Every effort is made to maintain the illusion that they are in fact a solution when a few simple questions reveal they are not.

Links

[Top • I • II • III]

Country Guardian was founded in 1992 to oppose wind farms in unspoiled rural areas of the U.K. Their web site is at www.**countryguardian**.net. It includes a thorough summary of the case against industrial wind power, many views from people alarmed at and who have experienced the destruction wrought in the name of going green, and links to other groups fighting industrial wind installations. **National Wind Watch** is a U.S. coalition founded in August 2005. Their web site, containing key documents, a resource library, a daily news feed, FAQs, their own publications, videos, and links to over 300 allied organizations, is at www.**wind-watch**.org. A good series of newsletters is produced by **Views of Scotland** and available at www.**viewsofscotland**.org/library/publications.php.

For information specific to off-shore siting of wind towers, which raises many issues not covered above, see www.**saveoursound**.org and www.**windstop**.org. For example, Greenpeace has been at the forefront of opposing the U.S. Navy's use of low-frequency sonar, because of its disruption to wildlife, particularly whales. At the same time they are at the forefront of promoting off-shore wind power plants, which produce low-frequency noise that has been measured at well over 100 dB, louder than the noise from an oil-drilling

RH17

10

Keyword Search
[exact phrase in ""]
Advanced Search
[Google-powered]
LOCATION/TYPE
Select
News Home
Archive
SUBSCRIBE
Add NWW headlines to your site (click here)
Latest News
New York: Clarence wind turbine decision tabled
Colorado: El Paso County residents say they intend to seek injunction to halt wind farm construction
Indiana: Anti-wind turbine group hires lawyer to see county residents are protected
Michigan: County wants more time on wind issue
Colorado: Neighbors rally around wind farm lawsuit
Ontario: Rural landowners air concerns about industrial wind farms
Wales: Conwy campaigners win Llys Dymper wind farm war
Vermont: Vermont House approves major renewable energy overhaul
New York: Wind turbine debate churns in Clarence

filed: May 16, 2013 • South Dakota, U.S., Wyoming

Wind turbines deadly for eagles, pheasants; Protected birds die without prosecution of energy companies

Credit: Written by Staff and wire reports | May 16, 2013 | www.argusleader.com --

CONVERSE COUNTY, WYO. — Every year 573,000 birds are killed by wind turbines, according to an estimate published in March in the peer-reviewed *Wildlife Society Bulletin*.

In the Converse County, Wyo., area, more than four dozen golden eagles have been killed by the turbines since 2009, one of the deadliest places in the country of its kind. In neighboring South Dakota, there are no known reports of eagle deaths but other birds, including pheasants, mallards and smaller species have been killed.

Yet so far, the companies operating industrial-sized turbines here and elsewhere that are killing eagles and other protected birds have yet to be fined or prosecuted — even though every death is a criminal violation.

The Obama administration has charged oil companies for drowning birds in their waste pits, and power companies for electrocuting birds on power lines.

But the administration has never fined or prosecuted a wind-energy company, even those that flout the law repeatedly.

"What it boils down to is this: If you electrocute an eagle, that is bad, but if you chop it to pieces, that is OK," said Tim Eicher, a former U.S. Fish and Wildlife Service enforcement agent based in Cody.

It's a double standard that some Republicans in Congress said Tuesday they would examine after an Associated Press investigation revealed that the Obama administration has shielded the wind power industry from liability and helped keep the scope of the deaths secret.

Sign up for daily updates
PayPal Donate
Help keep this education resource going strong!
More information
Selected Documents
All Documents
Research Links
Alerts
Press Releases
FAQs
Publications & Products
Photos & Graphics
Videos
Allied Groups
Search all NWW

RH 18

England:
East Youlstone wind turbine damaged by lightning strike
Washington:
Washington Senate OKs bill giving utilities option on renewable energy
Europe:
EWEA Offshore: Decommissioning costs underestimated
Wales:
Pontarddulais residents' anger at work on wind farm
England:
Maldon wind turbine plan is rejected after objections
New Hampshire:
Dixville Capital proposes 3-parcel Balsams mitigation package
Colorado:
Property owners suing county commissioners over changes to wind farm project
Kansas:
Lawmakers asked to maintain renewable energy standards
Wales:
Mid Wales wind farm decision to be postponed until after election
England:
Protesters win legal fight to stop wind turbine in Northamptonshire village
New Jersey:
Wind energy proposal at Port of Paulsboro 'Not dead, but on life support,' Burzichelli says
Maine, Opinions:
It's no wonder Orland is in such a mess when it comes to wind
Michigan:
County could delay wind energy today
New York:
Tompkins County wind farm would be first of its kind In New York
Ontario:
New wind project proposed for Lambton County
England:
Two tribes at war: as the Navitus Bay planning process

"We obviously don't want to see indiscriminate killing of birds from any sort of energy production, yet the administration's ridiculous inconsistencies begs questioning and clarity — clarity on why wind energy producers are let off the hook," Sen. David Vitter, R-La., said.

The House Natural Resources Committee, which was at the beginning stages of an investigation, vowed to dig deeper earlier this week.

"There are serious concerns that the Obama administration is not implementing this law fairly and equally," said Jill Strait, a spokeswoman for the committee's chairman, Rep. Doc Hastings, R-Wash.

Pheasants, mallards killed in S. Dakota

There is little data available of just how many birds collide with wind turbines every year in South Dakota, but local experts say there have been reports of several species, including pheasants and mallards.

Natalie Gates, a fish and wildlife biologist with the U.S. Fish and Wildlife Service, said there have been reports of a wide range of species colliding with wind turbines in the state, including American white Pelicans and pheasants, but no reports of eagles collisions to her knowledge.

However, there isn't an overall tally available on how widespread the issue is, she said. Companies often do post-construction wildlife surveys of bird deaths in the years after a wind farm opens, but the reports from those surveys often aren't readily available, said Silka Kempema, a wildlife biologist with South Dakota Game Fish and Parks.

Gates receives some reports from companies that report data, but she said the list is not complete. She also declined to provide the data without a Freedom of Information Act request because of confidentiality issues.

But Gates did say avian collisions are an issue with wind turbines.

"I think it's an issue wherever you have wind turbines," she said. "They're going to kill birds. It's pretty much a given."

Basin Electric Power Cooperative owns and operates 100 wind towers north of White Lake through the PrairieWinds SD 1 subsidiary. The wind farm has an additional eight towers, seven owned by South Dakota Wind Partners and

comes to an end, what next for EDF's controversial wind farm?
Ireland: Lord na Mona may get caught in storm over windfarms
England: Campaigner wins wind turbine fight
Colorado: Residents sue El Paso County commissioners over wind farm project
New Hampshire: Newfound voters again weighing wind restrictions
New York: JCIDA chief exaggerated support for Galloo Island wind project, legislator says

another by Mitchell Technical Institute. The Crow Lake Wind project was completed in 2011 and since then the company has been doing post-construction monitoring for the site. The company also has a wind farm in North Dakota.

Kevin Solie, senior water quality/waste management coordinator for Basin Electric, said their studies show two collisions per tower every year on average. By far the most common collisions come from pheasants but also from smaller species. They have not seen any collisions with hawks, raptors, owls or eagles.

Wind turbines can be as tall as 30 stories high and the spinning rotors can reach speeds up to 150 mph.

"A lot of times, the birds, if they're going to move through, they're not moving through fast enough." Gates said.

But hunting birds such as eagles or hawks also tend to be looking at the ground and might not necessarily see the wind turbines up ahead, Gates said. If wind farms are near prairie dog towns, for instance, that can cause more collisions for species such as raptors.

A number of organizations are looking into the issue. The American Wind Wildlife Institute is working to create a repository to collect and analyze unpublished data that often is considered confidential.

The Western Area Power Administration and the U.S. Fish and Wildlife Service are seeking comment on a draft of the Upper Great Plains Wind Energy Programmatic Environmental Impact Study, which looks at the effects of wind energy on grassland and wetland easements in the region.

Gates said research has found that bat collisions can be decreased simply by powering the turbines up at higher wind levels, when fewer bats are flying. Some states have used radar equipment to determine when mass bird migrations are in the area to power down turbines, though she doesn't think that technology has been used in South Dakota.

Solie said the average number of collisions on the Crow Lake wind farm is less than other projects in the area that have released data to the public. That's in part because more recent wind farms have taken more care to site towers away from wetlands and other habitats.

"I think there is some trying to avoid where the birds are

RH19

going to be," he said.

The Crow Creek project spans 30,000 acres and wind towers are placed based on a computer model that determines the best place to get the most wind resources along while also avoiding necessary areas, said Daryl Hill, spokesman for Basin Electric. That project is on cropland and pastureland.

Other tweaks have been made as well, Hill and Solie said. Tower blades now spin slower, whereas in the early years they moved fast enough that they would become invisible. They also don't have a lattice structure at the top anymore and are solid columns.

"There is no place for the birds to nest or land on our structures," Solie said.

Further, during whooping crane migratory season the company must hire biologists to look out for the birds. Once one is spotted the turbines are shut off within a two miles radius.

But both Gates and Kempema said there is little that can be done, overall.

Kempema said post-construction studies should continue and that energy companies must continue to work with conservation groups and federal and state agencies. They both also said the best recommendation is for companies to focus on wind farms already in disturbed areas such as cropland rather than grass or wetlands.

"More times than not, South Dakota is a pretty good state for wildlife, and we have a lot of habitat," said Kempema, adding it can be hard to find a place where no habits will be disturbed.

U.S. energy policy

Wind power, a pollution-free energy intended to ease global warming, is a cornerstone of President Barack Obama's energy plan. His administration has championed a $1 billion-a-year tax break to the industry that has nearly doubled the amount of wind power in his first term.

"Climate change is really greatest threat that we see to species conservation in long run," said Fish and Wildlife Service director Dan Ashe in an interview with the AP on Monday. "We have an obligation to support well-designed renewable energy."

But like the oil industry under President George W. Bush, lobbyists and executives have used their favored status to help steer U.S. energy policy.

The result is a green industry that's allowed to do not-so-green things.

Getting precise figures is impossible because many companies aren't required to disclose how many birds they kill. And when they do, experts say, the data can be unreliable.

When companies voluntarily report deaths, the Obama administration in many cases refuses to make the information public, saying it belongs to the energy companies or that revealing it would expose trade secrets or implicate ongoing enforcement investigations.

Source: Written by Staff and wire reports | May 16, 2013 | www.argusleader.com

Share:

[Short URL: https://wind-watch.org/news/?p=37083]

Translate: ***FROM*** **English |** ***TO*** **English**

Some possibly related stories:

- Oil companies prosecuted for avian deaths but wind companies kill birds with impunity
- Deadly blades: US offers 30-year permits for killing eagles under plan to boost wind industry
- Obama administration allows wind farms to kill eagles, birds despite federal laws
- Wind turbines endanger eagles
- The green killer: Scores of protected golden eagles dying after colliding with wind turbines
- Sacrifice of protected birds unintended consequence of wind power development

« Later Post • News Watch Home • Earlier Post »

RH2


GET THE FACTS
www.wind-watch.org

Twenty Bad Things About Wind Energy, and Three Reasons Why

By John Droz, Jr. (/about#john-droz) -- October 24, 2012

> ***Editor note: This is an updated version of a previous post at MasterResource: "Wind Spin: Misdirection and Fluff by a Taxpayer-enabled Industry (http://www.masterresource.org/2012/02/wind-spin/)"*** *which was itself an update of* ***"Fifteen Bad Things About Wind Energy, and Three Reasons Why (http://www.masterresource.org/2010/09/15-bad-things-windpower/)," one of the two most read posts in the history of MasterResource.***

Trying to pin down the arguments of wind promoters is a bit like trying to grab a greased balloon. Just when you think you've got a handle, it morphs into a different shape and escapes your grasp. Let's take a quick highlight review of how things have evolved with wind merchandising.

1 – Wind energy was abandoned well over a hundred years ago, as even in the late 1800s it was totally inconsistent with our burgeoning, more modern needs for power. When we throw the switch, we expect that the lights will go on – *100% of the time*. It's not possible for wind energy, by itself, to EVER do this, which is one of the main reasons it was relegated to the dust bin of antiquated technologies (along with such other inadequate energy sources as horse and oxen power).

2 – Fast forward to several years ago. With politicians being convinced that Anthropogenic Global Warming (AGW) was an imminent catastrophic threat, lobbyists launched campaigns to favor anything would purportedly reduce carbon dioxide. This was the marketing opportunity that the wind energy business needed. Wind energy was resurrected from the dust bin of power sources, as its promoters pushed the fact that wind turbines did not produce CO2 while generating electricity.

3 – Of course, just that by itself is not significant, so the original wind development lobbyists then made the case for a quantum leap: *that by adding wind turbines to the grid we could significantly reduce CO2 from those "dirty" fossil fuel electrical sources (especially coal).* This argument became the basis for many states implementing a Renewable Energy Standard (RES) or Renewable Portfolio Standard (RPS) – which *mandated* that the state's utilities use (or purchase) a prescribed amount of wind energy ("renewables"), by a set date.

Why was a mandate necessary? Simply because the real world reality of integrating wind energy made it a *very expensive* option. As such, no utility companies would likely do this on their own. They had to be forced to. For more on the cost, please keep reading.

4 – Interestingly, although the stated main goal of these RES/RPS programs was to reduce CO2, not a single state's RES/RPS requires **verification** of CO2 reduction from any wind project, either beforehand or after the fact. *The politicians simply took the sales peoples' word that consequential CO2 savings would be realized!*

5 - It wasn't too long before utility companies and independent energy experts calculated that the actual CO2 savings were miniscule (if any). This was due to the inherent nature of wind energy, and the realities of necessarily continuously balancing the grid, on a second-by-second basis, with fossil-fuel-generated electricity. The frequently cited Bentek study (*How Less Became More* (http://docs.wind-watch.org/BENTEK-How-Less-Became-More.pdf)) is a sample independent assessment of this aspect. More importantly, there has been *zero scientific empirical proof* provided by the wind industry to support their claims of consequential CO2 reduction.

6 – Suspecting that the CO2 deception would soon be exposed, the wind lobbyists took pre-emptive action, and added another rationale to prop up their case: *energy diversity.* However, since our electricity system already had considerable diversity (and many asked "more diversity at what cost?") this hype never gained much traction. Back to the drawing board....

7 - The next justification put forward by the wind marketers was *energy independence.* This cleverly played on the concern most people have about oil and Middle East instability. Many ads were run promoting wind energy as a good way to reduce our "dependence on Middle Eastern oil."

None of these ads mentioned that only about 1% of our electricity is generated from oil. Or that the US *exports* more oil than we use for electricity. Or that our main import source for oil is Canada (not the Middle East). Despite the significant omissions and misrepresentations, this claim still resonates with many people, so it continues to be pushed. Whatever works.

– Knowing full well that the assertions used to date were specious, wind proponents manufactured still another claim: *green jobs*. This was carefully selected to coincide with widespread employment concerns. Unfortunately, when independent qualified parties examined the situation more closely, they found that the claims were wildly exaggerated. Big surprise!

Further, as attorney and energy expert Chris Horner has so eloquently stated:

> *There is nothing – no program, no hobby, no vice, no crime – that does not 'create jobs.' Tsunamis, computer viruses and shooting convenience store clerks all 'create jobs.' So that claim misses the point. Since it applies to all, it is an argument in favor of none. Instead of making a case on the merits, it is an admission that one has no such arguments.*

See a very detailed critique of the jobs situation at PTCFacts.Info (http://stopptcinfo.wordpress.com/job-claims-copy/). Listed there are TEN major reasons why using jobs as an argument is not appropriate or meaningful. Additionally there is a list of some *45 reports* written by independent experts, and they all agree that renewable energy claims are based on numerous fallacies.

9 – Relentlessly moving forward, wind marketers then tried to change the focus from jobs to *"economic development."* The marketers typically utilized a computer program called JEDI to make bold economic projections. Unfortunately, JEDI is a totally inadequate model for accurately arriving at such numbers, for a variety of technical reasons. The economic development contentions have also been shown to be inaccurate, as they never take into account economic *losses* that result from wind energy implementation – for example agricultural losses (http://www.fort.usgs.gov/Products/Publications/23069a/23069a.pdf) due to bat killings, and job losses due to higher electricity costs for factories, hospitals and numerous other employers.

Additionally, as with jobs, economic development in-and-of-itself has nothing to do with the merits of wind energy as a power source. Let's say we have a transportation RES mandating that *20% of a state's vehicles be replaced by horse power by 2020*. There would be a LOT of "economic development" (making horse carriages and buggy whips, building horse barns, growing and shipping hay) that would result from such an edict. *But would that be any indication that it is an intelligent, beneficial policy?*

10 – Along the way, yet another claim began making the rounds: *that wind energy is low cost.* This is surprisingly bold, considering that if that were really true, RES/RPS mandates would not be necessary. For some reason, all calculations showing wind to be "low cost" conveniently ignore exorbitant subsidies, implementation costs, power adjusting (see next item), additional transmission costs, and so on. Independent analyses of levelized costs (e.g. from the EIA) have concluded that (when ALL applicable wind-related costs are accurately calculated) wind energy is *MUCH* more expensive than any conventional source we have.

RH22

11 – A subtle (but significant) difference between wind energy and other conventional sources of electricity is in *power quality*. This term refers to such technical performance factors as voltage transients, voltage variations, waveform distortion (e.g. harmonics), frequency variations, and so forth. The reality is that wind energy introduces many more of these issues than does a conventional power facility. Additional costs are needed to deal with these wind-caused problems. *These are rarely identified in pro-wind economic analyses.*

12 – When confronted with the reality that wind energy is considerably more expensive than any conventional source, a common rejoinder is to object to that by saying that once the "externalities" of conventional sources are taken into account, wind is less expensive than those conventional sources.

To gullible sheeple, this might make sense. But consider the following two points. First, externality analyses posited by wind zealots never take into account the true environmental consequences of wind energy (rare earth impacts [see below], human health effects, bird and bat deaths, the CO2 generated from a two million pound concrete base, etc.).

Second, the "externalities" for things like coal are always only the *negative* part. If these advocates want a true big picture calculation, then they need to also add in the **benefits** to us from low-cost coal-based electricity. Considering that coal played a major part in our economic success and improved health and living standards over the past century, such a plus factor would be enormous.

[BTW there is some evidence that the negative externalities (e.g. about coal related asthma claims) are exaggerated. What a surprise!]

13 – A key grid ingredient is *Firm Capacity*. (A layman's translation is that this is an indication of dependability.) Conventional sources (like nuclear) have a Firm Capacity of nearly 100%. Wind has a Firm Capacity of about 0%. *Big difference!*

14 – Since this enormous Firm Capacity discrepancy is indisputable, wind energy apologists then decided to adopt the strategy that wind energy isn't a "capacity resource" after all, but rather an "energy resource." Surprisingly, this may be the first contention that is actually true! But what does this really mean?

The reality is that saying "wind is an energy source" is a trivial statement, on a par with saying "wind turbines are white." Lightning is an energy source. So what? The fact is that your cat is an energy source too. In this Alice-in-Wonderland reality, connecting the cat to the grid (after heavily subsidizing it, of course), makes as much sense as does connecting puff power.

5 - Wind marketers then hit on a new tactic: that we should use wind as it is a **plentiful resource**. This is a strategy based on a part truth: that we should be utilizing energy sources that are abundant, reliable, and low-cost. There are two major deficiences in this thinking.

First, abundant sources that are **not** reliable and that are **not** low-cost (i.e. wind energy), are a **net detriment** to our economy. *Second*, if they are really saying that abundance should be our primary focus, then they should be promoting nuclear power and geothermal energy. Both of these sources have something like a *million times* the available energy that wind does. Both of those are orders of magnitude more reliable than wind is. Both are lower cost when comparing the actual levelized cost of wind energy (e.g. Wind+ Gas).

16 - One of the latest buzz-words is *sustainability*. One has to give these marketeers credit for being persistently imaginative. The truth about sustainability is:

> *a) It is totally hypocritical to have wind advocates attacking fossil fuels as unsustainable, when the wind business has an ENORMOUS dependency on fossil fuels for their construction, delivery, maintenance and operation. This article (http://www.energybulletin.net/stories/2010-11-25/how-sustainable-renewable-energy) explains some of it.*
>
> *b) Nothing is sustainable, as this piece (http://wattsupwiththat.com/2011/12/22/nothing-is-sustainable/) accurately explains.*
>
> *c) Wind energy is our LEAST sustainable option (http://townhall.com/columnists/pauldriessen/2011/09/01/our_least_sustainable_energy_option/page/full/)!*

17 – A related pitch is that our adoption of wind energy will help us break "our fossil fuel dependence." Guess what? The reality is that wind actually *guarantees our perpetual dependence on fossil fuels*! In addition to wind turbines' dependence on fossil fuels for manufacture, delivery and maintenance, the only way wind energy can quasi-function on the grid is to have it *continuously* augmented by a fast responding power source – which for a variety of technical and economic reasons is usually gas.

It's rather amusing that the same environmental organizations that support wind energy are also against shale gas. That's like saying that you love Italian food but hate tomato sauce. *The two are paired together like Fred Astaire and Ginger Rogers.*

Realizing that their best defense is a good offense, some of these hucksters are now contending (http://www.earthtimes.org/energy/should-we-embrace-wind-power/1807/) the inverse: *that wind actually augments gas!* So wind that generates electricity 25±% of the time is "augmenting" gas, which has to supply the 75±%! This immediately brings to mind the British army band playing "The World Turned Upside Down."

RH2J

18 – The claim that wind energy is "green" or "environmentally friendly" is laugh-out-loud hilarious – except for the fact that the reality is not funny at all. Consider just one part of a turbine, the generator, which uses considerable rare earth elements (http://climateerinvest.blogspot.com/2009/05/wind-why-rare-earth-metals-matter.html) (2000± pounds per MW).

The mining and processing of these metals has horrific (http://www.dailymail.co.uk/home/moslive/article-1350811/In-China-true-cost-Britains-clean-green-wind-power-experiment-Pollution-disastrous-scale.html) environmental consequences that are unacknowledged and ignored by the wind industry and its environmental surrogates. For instance, just the rare earths of a typical 100 MW wind project would generate approximately:

> ***a)*** *20,000 square meters of destroyed vegetation,*
>
> ***b)*** *1.2 million pounds of CO2,*
>
> ***c)*** *6 million cubic meters of toxic air pollution,*
>
> ***d)*** *29 million gallons of poisoned water,*
>
> ***e)*** *600 million pounds of highly contaminated tailing sands, and*
>
> ***f)*** *280,000 pounds of* ***radioactive waste****. (See this (http://fmso.leavenworth.army.mil/documents/rareearth.pdf), and this (http://www.vetiver.org/ICV4pdfs/BA09.pdf), and this (http://www.sdcleanwateralliance.org/RareEarthElements.html).)*

19 – Modern civilization is based on our ability to produce electrical POWER. Our modern sense of power is inextricably related to *controlled performance expectations*: when we turn the knob, we expect the stove to go on 100% of the time – *not just on those wildly intermittent occasions when the wind is blowing within a certain speed range.*

Underlying a lot of the wind lobbyists' claims is a carefully crafted, implied message that there is some kind of wind energy "equivalency" to conventional sources. This assumption is the basis for such assertions that XYZ wind project will power 1,000 homes. Such claims are totally false. They are dishonest from several perspectives: the most obvious error being that XYZ wind project will NEVER provide power to any 1000 homes **24/7**. It might not provide power for even **one** home 24/7/365.

Yet we see this same "equivalency" message conveyed even more subtly on EIA tables for levelized costs. Wind and conventional sources should *not* be on the same table, but they were (defended only by a small footnote). One useful analogy is to consider the cost, speed, reliability and load capacity of a single

ighteen-wheeler truck in making daily interstate deliveries of furniture, heavy equipment or other large products. This semi-truck is equivalent to a nuclear plant.

In energy generation terms, the wind turbine equivalent is to attempt to replace the single truck with golf carts. How many golf carts would it take to equal the cost, speed, reliability and load capacity of a single eighteen-wheeler in making daily interstate deliveries? This is a trick question, as the answer is that there is **no** number that would work: not ten, not a hundred, not ten thousand, not a million. Exactly the same situation exists in the electricity sector: *no number of turbines will ever equal the cost, reliability and output of one conventional electricity plant.*

20 – A close cousin of the prior illegitimate contention is that "The wind is always blowing somewhere, so spreading wind projects out will result in a combination that has a dependable output." Like essentially all the wind industry mis-infomercials do, this bald assertion has a soothing, reassuring ring. But this marketing claim is unsupported by any empirical, real world evidence. For instance, in southeastern Australia about 20 wind projects (http://ramblingsdc.net/Australia/WindSA.html#Operating_SA_wind_farms-Graph) are spread out over a single 1000± mile long grid. Yet the combined result (http://windfarmperformance.info/documents/analysis/monthly/aemo_wind_201005_hhour.pdf) in no way even approximates the consistent dependable performance of our primary conventional sources.

Again, our modern society is based on abundant, reliable, affordable electric **power**. All these specious claims for wind energy are simply part of a long line of snake oil sales spiels – intended to fool the public and enable politicians to justify favoring special interests by enriching various rent-seekers (which will then return the favor via campaign contributions and other reelection support).

They get away with this primarily for three basic reasons.

> ***1*** *- Wind proponents are not asked to independently PROVE the merits of their claims before (or after) their product is forced on the public.*
>
> ***2*** *- There is no penalty for making bogus assertions or dishonest claims about their product's "benefits," so each successive contention is more grandiose than the last.*
>
> ***3*** *- Promoting wind is a political agenda that is divorced from real science. A true scientific assessment is a comprehensive, objective evaluation with transparent real world data – not on carefully massaged computer models and slick advertising campaigns, which are the mainstay of anti-science evangelists promoting political agendas.*

RH24

So, in effect, we have come around full circle. A hundred-plus years ago, wind energy was recognized as an antiquated, unreliable and expensive source of energy – and now, after hundreds of billions of wasted tax and consumer dollars, we find that (surprise!) it still is an antiquated, unreliable and expensive source of energy. This is what happens when science is relegated to a back-of-the-bus status.

Paraphrasing Dr. Jon Boone:

> *Let's see the real world evidence for the lobbyists' case. I'm weary of these relentless projections, uncontaminated as they are by reality. In a nutshell, what these profiteers are seeking to do, through methodological legerdemain, is to make wind appear to be what it is not. This is a plot lifted out of Cinderella and her step-sisters, or the Emperor's New Clothes. It's really a story of class aspirations, but one that is bizarrely twisted: giving wind a makeover to make her seem fetching and comely when in fact she's really a frog.*

When you hear that wind opposition is all about NIMBYs, think about the above points, and then reflect on what NIMBY really means: *The Next Idiot Might Be You.*

But consider the sources. When a major turbine manufacturer calls a catastrophic failure like a blade falling off component liberation (https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId=%7BCE6A8810-5F73-4455-A00C-063203CF1483%7D&documentTitle=20119-66248-01), we know we are in for an adventurous ride in a theme park divorced from reality.

See **EnergyPresentation.Info (http://www.slideshare.net/JohnDroz/energy-presentationkey-presentation)** for more detailed explanations, including charts, photographs, entertaining graphics, and numerous references.

———

John Droz, Jr., a physicist & environmental advocate, can e reached at aaprjohn@northnet.org (mailto:aaprjohn@northnet.org).

24 Comments

wintercow20 (http://theunbrokenwindow.com) • October 24, 2012 at 5:59 am