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Details:

(FORM UPDATED: 08/11/2010)

WISCONSIN STATE LEGISLATURE ...
PUBLIC HEARING - COMMITTEE RECORDS

2009-10

(session year)

Senate

(Assembly, Senate or Joint)

Committee on ... Commerce, Utilities, Energy, & Rail (SC-CUER)

COMMITTEE NOTICES ...

- Committee Reports ... **CR**
- Executive Sessions ... **ES**
- Public Hearings ... **PH**

INFORMATION COLLECTED BY COMMITTEE FOR AND AGAINST PROPOSAL

- Appointments ... **Appt** (w/Record of Comm. Proceedings)
- Clearinghouse Rules ... **CRule** (w/Record of Comm. Proceedings)
- Hearing Records ... bills and resolutions (w/Record of Comm. Proceedings)
  (**ab** = Assembly Bill) (**ar** = Assembly Resolution) (**ajr** = Assembly Joint Resolution)
  (**sb** = Senate Bill) (**sr** = Senate Resolution) (**sjr** = Senate Joint Resolution)
- Miscellaneous ... **Misc**

* Contents organized for archiving by: Gigi Godwin (LRB) (July/2011)

C-Rule 10-057?
Date?

STATEMENT OF POSITION ON WIND SITING RULES

Last fall, Wind for Wisconsin helped pass legislation (2009 Act 40) which directed the Public Service Commission to create uniform wind siting standards across the state. The intent of Act 40 was to establish reasonable and workable rules for landowners, political subdivisions, and developers. Yet the rule as submitted to the legislature by the PSC creates a problematic permitting environment in Wisconsin, creating additional impediments to development in our state, contrary to the law and policy of Act 40.

In fact, certain provisions within the PSC rule are more restrictive than previous PSC wind construction decisions and would establish the most stringent rules in the country for wind development. For example, the rule allows political subdivisions to require developers to make annual payments to nonparticipating landowners. This requirement is inconsistent with the goals of Act 40, unrelated to health or safety, and increases development costs. Mandatory payments to nonparticipating landowners are a first for any statewide wind permitting rule in the United States and should be removed from the rule.

Additionally, the proposed setback of 3.1 times turbine height from nonparticipating residences will result in setbacks of over 1,500 feet for some turbines, thereby eliminating otherwise developable turbine sites and making some projects infeasible if not impossible to develop.

Currently, over 600 MW of planned wind developments are stalled across Wisconsin due to difficult regulations and procedures. Practical wind siting rules will signal to the growing wind industry that Wisconsin is open for business, making our state more competitive in attracting investment capital.

The businesses and organizations listed below support reasonable rules which allow for the development of wind in Wisconsin. Overly burdensome provisions that do not protect health or safety will add costs and burdens to wind development with little or no benefit to our state, our economy, or individual landowners.

CAMPAIGN SUPPORTERS

- Addison Wind Energy, LLC
- AgWind Energy Partners
- American Lung Association Wisconsin
- American Transmission Company
- American Wind Energy Association
- Associated General Contractors of Wisconsin, Inc.
- Babcock & Brown
- Boldt Construction
- Broadwind Energy
- Citizens Utility Board
- Clean Wisconsin
- Construction Business Group
- Customers First Coalition
- Dairyland Power Cooperative
- EcoEnergy, LLC
- Eden Renewable Energy, LLC
- Element Power
- Emerging Energies of Wisconsin, LLC
- Federal Marine Terminals, Inc.
- Fednav
- Great Lakes Utilities
- Horizon Wind Energy
- Iberdrola Renewables
- IBEW 2150
- IBEW 965
- Invenergy, LLC
- IUOE Local 310
- Lake Michigan Wind and Sun
- League of Women Voters – Wisconsin
- Madison Gas & Electric
- Michels Wind Energy
- Midwest Renewable Energy Association
- Midwest Wind Energy
- Municipal Electric Utilities of Wisconsin
- Operating Engineers Local #139
- Orion Construction Group
- Orion Energy Systems
- Port of Milwaukee
- Renewegy
- RENEW Wisconsin
- Ritger Law Office
- Seventh Generation Energy Systems
- Sierra Club – John Muir Chapter
- Stantec
- United Steel Workers
- Uriel Wind, Inc.
- Wausaukee Composites
- WES Engineering
- Wind Wisconsin
- Wisconsin Agribusiness Council
- Wind Capital Group
- Wind on the Wires
- Wisconsin Commercial Ports Association
- Wisconsin Environment
- Wisconsin Farmers Union
- Wisconsin Farm Bureau Federation
- Wisconsin Industrial Energy Group
- Wisconsin Laborers' District Council
- Wisconsin League of Conservation Voters
- Wisconsin Manufacturers and Commerce
- WPPI Energy
- Wisconsin State Council of Carpenters
- Wisconsin Utilities Association
- Xcel Energy

Note: While the endorsing entities support the proposal as summarized herein, their endorsement should not be construed as a blanket endorsement of future legislative or regulatory changes to permitting wind energy systems in Wisconsin.


FORWARD
E PLURIBUS UNUM

C-Rule 10-057? Date?

I wish to thank the Senate Energy Committee for the opportunity to speak today.

I am a retired Green Bay Public school teacher. I earned my first degree here at UW - Madison in Natural Science with an emphasis in Biology.

This past summer, my husband, Carl, and I attended five of the Wind Siting Council meetings. As an observer, I could hear the back and forth discussions, including comments by the pro-wind members who have a vested interest in promoting and ensuring the construction of turbine projects. This makeup of the Council presented problems when trying to read and consider various documents and take an unbiased look at reported health and safety problems. On occasion, I was surprised at the blatent disregard for the current and potential problems reported by wind project residents. For example, Bill Rakocy stated at one of the early meetings quite abruptley, " Yeah . . . we can talk about human health issues, but it better be real illnesses, not those fake ones you hear about and are hard to prove."

Our Brown County Board of Health concluded, after seeing an epidemiological study of the changes in the blood cortisol levels, etc. in a resident in one of the wind projects after the turbines went online, that siting distance may be the cause of these problems. They listened to other residents testimomies who were dealing with shadow flicker, low frequency noise from the moving blades, interrupted sleep, etc. The gut-wrenching story of the Wirtz family who eventually had to walk away from their $320,000 farm due to sleeping problems, as well as lesions in the GI system of their teenage daughter, gave credence to their claims.

Our Brown Board of Health saw these symptoms as "real". The neighboring Kewaunee County Board of Health drew the same conclusion, as did the Manitowoc County Board of Health most recently.

At one of our Brown County Board meetings in early 2010, it was announced by one of the supervisors that the city of Green Bay had hired an acoustical engineer and his firm to do c-weighted tests to measure and assess the Low Frequency Noise produced by the blades of industrial fans, the airport and the cooling systems at the mega-grocery stores.

The city government wanted to see if the LFN's might be making some city residents sick who live nearby. And, if needed, they would rewrite their city noise ordinance to include new safe standards to include LFN's and protect their urban residents.

Doesn't it make sense to have acoustical testing and sleep studies done in current Wisconsin industrial wind projects? Don't we as rural residents deserve the same safeguards for our families and farms?

Last week, I spoke with Mr. Tom Tanton, who is an energy analyst and former member of the California Energy Board for 35 years. He is President of T2 & Associates providing consulting services to the energy and technology industries.

He got right to the point in his e-mail to me. Quote: "Living too close to wind turbines imposes health and safety risks to the public. . . . noise from wind turbines can cause health effects, as documented by Dr. Nina Pierpont and others. Dr. Oguz A. Soysal, Professor and Chairman of the Dept. of Physics and Engineering at Frostburg State University in Maryland measured sound levels over half a mile away from the Meyersdale, PA, 20-turbine wind farm. . . . audible plus low frequency c-weighted dB were 65-70 range. . . represents a significant amount of low frequency sound by World Health Organization standards. Noise-induced sleep disturbances can result in fatigue, depressed mood or well-being, decreased performance. . .increased blood pressure and heart rate, changes in breathing pattern, and cardiac arrhythmias.

As for the impacts on wildlife, I have lived on the Niagara Escarpment or the Ledge for 33 years. This feature is one of the most important flyways into Canada for migrating species. By state and Federal law, you and I are prohibited from having in our possession even one feather from a raptor -- a hawk, owl or eagle feather much less kill one of these birds. The penalty is a substantial fine or jail time.

By allowing wind turbine developers to put up giant modern wind turbines on the ledge escarpment without a "required" bird and bat study prior to construction with the state DNR's oversight of the process, you open the door to a potential wildlife catastrophe for certain species. A DNR wildlife biologist who is assigned to a specific wind project can only "request" that pre- and post-construction bird and bat

studies be done. A recent study of three newer Wisconsin wind projects indicated kill numbers of bats that ranked ten times the national average and second highest kill rate in all of North America.

Have you all been listening? These are only some of the "red flags" that have popped up in Wisconsin wind project areas. There is not enough time to talk about our overwhelmed electrical grid system and the effect of pulsating non-linear power produced by these huge wind turbines known to create ground currents, sometimes called "stray voltage" by the utilities, that can travel into homes and barns through wiring and/or the plumbing.

The time for studies is now, rather than to blindly proceed with a public policy that could harm the people and wildlife resources of Wisconsin.

Thank you for your time.
Sandra L. Johnson
1893 Wayside Rd.
Greenleaf, WI 54126


FORWARD
E PLURIBUS UNUM

Lincdn, Ca
(916) 645-3751

Thomas Tanton (C-Rule W-057?) (Date?)

Mr. Tanton is President of T [2] & Associates, a firm providing consulting services to the energy and technology industries. T [2] & Associates are active primarily in the area of renewable energy and interconnected infrastructures, analyzing and providing advice on their impacts on energy prices, environmental quality and regional economic development. Mr. Tanton has 40 years direct and responsible experience in energy technology and legislative interface, having been central to many of the critical legislative changes that enable technology choice and economic development at the state and federal level. Mr. Tanton is a strong proponent of free market environmentalism and consumer choice, and frequently publishes and speaks against alarmist and reactionary policies and government failures.

As the General Manager at EPRI, from 2000 to 2003, Mr. Tanton was responsible for the overall management and direction of collaborative research and development programs in electric generation technologies, integrating technology, market infrastructure, and public policy. From 2003 through 2007, Mr. Tanton was Senior Fellow and Vice President of the Houston based Institute for Energy Research. Mr. Tanton was also a Senior Fellow in Energy Studies with the Pacific Research Institute until 2010.Until 2000, Mr. Tanton was the Principal Policy Advisor with the California Energy Commission (CEC) in Sacramento, California. He began his career there in 1976. He developed and implemented policies and legislation on energy issues of importance to California, and U.S. and International markets, including electric restructuring, gasoline and natural gas supply and pricing, energy facility siting and permitting, environmental issues, power plant siting, technology development, and transportation. Mr. Tanton completed the first assessment of environmental externalities used in regulatory settings. Mr. Tanton held primary responsibility for comparative economic analysis, environmental assessment of new technologies, and the evaluation of alternatives under state and federal environmental law. Mr. Tanton served as Guest Lecturer for the Master in Environmental Science program at California State University Sacramento (CSUS), lecturing on power plant and electric grid technologies and their comparative environmental impacts.

Main Concerns with Wind Energy Development
Tom Tanton 10/6/2010

Wind energy is primarily built for tax purposes
During the past decade, the wind and other renewable energy industries have been incredibly successful in getting federal and state government officials to grant them generous tax breaks and subsidies, including state Renewable Portfolio Standards. The wind industry, which has received nearly $4.5 billion in "stimulus" program cash grants during the past year from the Obama Administration, apparently has plenty of cash to finance its intense lobbying. Most of that money actually ended up overseas. Wind energy is subsidized 20-30 TIMES conventional sources per unit of production. Even so, it is not economically competitive, and utilities that are forced to produce or buy electricity from renewable energy facilities pass along the higher costs to their customers via their monthly bills.

Wind energy does not offset any petroleum or petroleum imports
A persistent myth is that increasing wind- and solar-generated electricity will reduce our dependence on foreign oil and thus boost our energy security. Less than 1% of our electricity is generated using petroleum, so any renewable generation will have no appreciable effect on petroleum demand.

Wind energy can easily INCREASE emissions of greenhouse gasses
As shown in several recent engineering studies the volatility (short term fluctuations in output on the order of minutes due to gusty winds) forces other power plants connected to the grid to operate in "mirroring" mode ramping quickly up and down. Just like your car in stop and go traffic, as opposed to thoroughfare speed, this drastically reduces those plants efficiency, leading to increased fuel consumption and GHG emissions. Only by sophisticated "dispatch" modeling of an individual grid along with wind data can it be determined whether, on net, fuel use and GHG emissions increase or decrease. To date, no wind developer have ever done such a modeling effort subject to peer or regulatory review.

Wind energy is a threat to wildlife and endangered species
Wind resource areas often are coincident with critical habitat and/or migratory flyways. Many of these conflicts are for protected, threatened and endangered species. Wind energy development has long had significant issues with avian and bat mortality, even given the relatively few wind turbines installed to date. More wind turbines will pose greater threats. For example, in California's Altamont Pass area, one of the nation's oldest development area, over 500 Golden Eagles are slaughtered each year. Further, the additional transmission lines necessary to serve wind developments pose special threats as well.

Living too close to wind turbines imposes health and safety risks to the public
The tip speed of modern wind turbines approaches 200 MPH when operating. Ice and blade throw, from the top of a 300 foot tower, while infrequent, poses serious safety risks to the public within about ¾ to a mile. Further, the noise from wind turbines can cause health effects, as documented by Dr. Nina Pierpont and others. Industrial wind turbines produce significant amounts of audible and low-frequency noise. Dr. Oguz A. Soysal, Professor and Chairman of the Dept. of Physics and Engineering at Frostburg State University in Maryland, measured sound levels over half a mile away from the Meyersdale, PA, 20-turbine wind farm. Typical audible (A-weighted) dB (decibel) levels were in the 50-60 range, and audible plus low-frequency (C-weighted) dB were in the 65-70 range. 65-70 dB is the loudness of a washing machine, vacuum

cleaner, or hair dryer. A difference of 10 dB between A and C weighting represents a significant amount of low-frequency sound by World Health Organization standards. The noise produced by wind turbines has a thumping, pulsing character, especially at night, when it is more audible. The noise is louder at night because of the contrast between the still, cool air at ground level and the steady stream of wind at the level of the turbine hubs. This nighttime noise travels a long distance. It has been documented to be disturbing to residents 1.2 miles away from wind turbines in regular rolling terrain, and 1.5 miles away in Appalachian valleys. At night, the World Health Organization (WHO) recommends, the level of continuous noise at the outside a dwelling should be 45 dB or less, and inside, 30 dB or less. These thresholds should be even lower if there is a significant low-frequency component to the sound, – as there is for wind turbines. Higher levels of noise disturb sleep and produce a host of effects on health, well-being, and productivity. Effects of noise-induced sleep disturbance include fatigue, depressed mood or well-being, decreased performance, and increased use of sedatives or sleeping pills. Measured physiologic effects of noise during sleep are increased blood pressure and heart rate, changes in breathing pattern, and cardiac arrhythmias.

The decibel is logarithmic. Increasing the dB level by 10 multiplies the sound pressure level by 10. Increasing the dB level by 20 multiplies the sound pressure level by 100 (and 30 dB multiplies by 1000, etc.). Thus the 65 dB measured day and night half a mile from the Meyersdale wind farm, for example, has a measured intensity 100 times greater than the loudest continuous outdoor nighttime noise (45 dB) recommended by the WHO.


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Steven Deslauriers - Submitted along with testimony
2889 Wayside Road Representing the Town of Holland
Greenleaf, WI 54126
treesfd@gmail.com

Brown County Resolutions

No. 9e -- RESOLUTION REGARDING: HEALTH RISKS POSED BY WIND TURBINES

C-Rule 10-057?

TO THE HONORABLE CHAIRMAN AND MEMBERS OF THE BROWN COUNTY BOARD OF SUPERVISORS

Date?

Ladies and Gentlemen:

WHEREAS, Brown County has established a Board of Health pursuant to Wis. Stats. §251.03; and

WHEREAS, Wisconsin Statutes give the Board of Health responsibilities to: "Develop policy and provide leadership that fosters local involvement and commitment, that emphasizes public health needs . . ." and to ". . .assure that measures are taken to provide an environment in which individuals can be healthy" Wis. Stats. §251.04 (6)(b) and §251.04 (7); and

WHEREAS, the Board of Health met on May 25, June 8 and June 15, 2010 to collect and consider information from various sources including the following:

1) Statement on health and safety of existing installations from Invenergy, LLC (Sponsor of Ledgewind project proposed for rural Brown County);
2) A review of available literature on health concerns associated with Wind Turbines presented by the Wisconsin Department of Health Services;
3) The proposed regulations (5/17/10 Draft) of Chapter PSC 128, the Wind Siting Rules presently being considered by the Public Service Commission of Wisconsin;
4) Various studies from throughout the world on the health effects of wind turbines and guidelines from the World Health Organization;
5) Statements from Brown County Citizens for Responsible Wind Energy;
6) Presentations from Bill Hafs, Director of the Brown County Land Conservation Department and Kristin Morehouse, P.E. from Brown County Citizens for Responsible Wind Energy on the contamination threat construction of wind turbines and installation of necessary underground cables pose to the well water consumed by residents in rural areas of Brown County where the bedrock has Karst features; and

WHEREAS, the Board of Health has identified issues of concern for the health of Brown County residents including noise from wind turbines causing health problems for persons in occupied structures and a concern installation of wind turbine systems may result in well water contamination where Karst features in the bedrock are conduits for surface water run off; and

WHEREAS, the Board of Health has made recommendations to the Board of Supervisors it believes are important to the health of county residents.

NOW, THEREFORE, BE IT RESOLVED that the Brown County Board of Supervisors does hereby adopt the recommendations of the Board of Health as follows:

1) Wind turbines should be placed such that sound outside of any occupied structure be measured at no greater than 40 decibels at night;
2) Required set back placements should be a minimum of 2,640 to 3,168 feet from an occupied structure;

3) Wind turbines should not be installed in areas of southern Brown County where Karst features in the bedrock have been identified because of the contamination threat posed to the residents' drinking water supply;

4) The Board of Supervisors recommends no wind turbines be constructed in unincorporated areas of Brown County until Chapter PSC 128 Wind Siting Rules are enacted and in force.

5) ** Request that the Public Service Commission delays approving the PSCW wind siting standards until all epidemiological studies of health complaints from Wisconsin current wind farms are thoroughly completed.

** Add paragraph 5 as per the County Board on 7/21/2010

BE IT FURTHER RESOLVED that copies of this resolution be forwarded to Brown County representatives serving in the Wisconsin Legislature and the Public Service Commission of Wisconsin.

Respectfully submitted,
BROWN COUNTY BOARD OF HEALTH
HUMAN SERVICES COMMITTEE

A motion was made by Supervisor Vander Leest and seconded by Supervisor Andrews **"to adopt".**

A motion was made by Supervisor Van Vonderen and seconded by Supervisor Dantinne **"to add item #5 on page 3 of the resolution as follows: 'Request that the Public Service Commission delays approving the PSCW Wind siting standards until all epidemiological studies of health complaints from Wisconsin current wind farms are thoroughly completed'."** Voice vote taken. Motion carried unanimously with no abstentions.

A motion was made by Supervisor Moynihan and seconded by Supervisor Kaster **"to adopt the resolution as amended".** Voice vote taken. Motion carried unanimously with no abstentions.

Approved by: \s\ Tom Hinz, County Executive Date: 7/29/2010

No. 9f -- **RESOLUTION REGARDING: REQUESTING THAT THE PUBLIC SERVICE COMMISSION OF WISCONSIN INCLUDE CONSIDERING THE IMPACT ON GROUNDWATER DUE TO CONSTRUCTION IN KARST REGIONS OF BROWN COUNTY AS PART OF THEIR REVIEW OF THE LEDGE WIND ENERGY, LLC, (INVENERGY) WIND ENERGY PROJECT APPLICATION.**

TO THE HONORABLE CHAIRMAN AND MEMBERS OF THE
BROWN COUNTY BOARD OF SUPERVISORS

Ladies and Gentlemen:

WHEREAS, Invenergy has submitted an application to the Public Service Commission (PSC) to install 100 wind turbines as part of a wind energy project in southern Brown County; and

WHEREAS, southern Brown County includes areas of Karst features along the Niagara Escarpment; and

WHEREAS, Karst features are geological features that can act as direct conduits for pollutants to enter groundwater, wells, springs, and streams; and

WHEREAS, the University of Wisconsin Green Bay and Brown County Land and Water Conservation Department have mapped and field verified over 100 Karst features in the Town of Morrison; and

WHEREAS, areas of southern Brown County have experienced serious groundwater contamination problems caused by land application of waste near Karst features that resulted in over 100 wells contaminated by bacteria, E-coli, and nitrates from 2005 to 2010; and

WHEREAS, over 30 percent of nearly 300 wells tested in the Town of Morrison by the University of Wisconsin Stevens Point Center for Watershed Studies (2005 and 2006) and the University of Wisconsin Green Bay in 2009 were over the drinking water standard of 10 parts per million of nitrates; and

WHEREAS, the installation of footings, access roads, and cables buried four feet deep for 100 wind energy turbines are likely to intersect Karst bedrock features and potentially create additional conduits for pollutants to groundwater; and

WHEREAS, land application of animal wastes and other wastes including industrial wastes, septic wastes, and municipal wastes near conduits to groundwater increases the risk of groundwater contamination and risks to public health.

NOW, THEREFORE, BE IT RESOLVED that the Brown County Board of Supervisors respectfully requests that the Public Service Commission of Wisconsin review the Invenergy application for the wind farm in Brown County and require that Invenergy use proper engineering construction methods around wind turbine footings, access roads, and buried power cables to prevent additional conduits of groundwater from being created; and

BE IT FURTHER RESOLVED THAT the Brown County Board of Supervisors respectfully requests that the Public Service Commission require Invenergy to communicate and provide information regarding the specific location of all Karst features encountered during construction for the proposed wind energy project to the Brown County Land and Water Conservation Department and the Wisconsin Department of Natural Resources (DNR) to help regulate the land application of animal wastes by the Brown County Land and Water Conservation Department and industrial, septic, and municipal wastes by the DNR; and

BE IT FURTHER RESOLVED THAT Brown County respectfully requests that the Public Service Commission require Invenergy to provide funds for a Brown County staff person to be hired to work with Invenergy and residents in the wind farm region during the construction phase of the project regarding location and identification of Karst features; and

BE IT FURTHER RESOLVED THAT this staff person will continue to work in the wind energy project area, throughout the lifespan of the project, with land application of animal waste setbacks, nutrient management, and coordination of other land application of industrial wastes, municipal wastes, and septic wastes with the DNR to prevent future groundwater contamination problems.

Respectfully submitted,
LAND CONSERVATION SUBCOMMITTEE
PLANNING, DEVELOPMENT &
TRANSPORTATION COMMITTEE

A motion was made by Supervisor Clancy and seconded by Supervisor Kaster **"to adopt".** Voice vote taken. Motion carried unanimously with no abstentions.

Approved by: \s\ Tom Hinz, County Executive Date: 7/29/2010

No. 9g -- RESOLUTION REGARDING: PLACING ADVISORY REFERENDUM QUESTION ON NOVEMBER BALLOT

TO THE HONORABLE CHAIRMAN AND MEMBERS OF THE
BROWN COUNTY BOARD OF SUPERVISORS

Ladies and Gentlemen:

WHEREAS, according to the Legislative Fiscal Bureau, over the past decade, the state of Wisconsin has transferred approximately $1.2 billion from the state's segregated transportation fund to the state's general fund and replaced it with approximately $800 million in General Obligation (GO) bonds, thereby reducing the amount available for transportation purposes by approximately $400 million; and

WHEREAS, Wisconsin's practice of transferring money from the segregated transportation fund to the general fund has eroded the public's confidence that the "user fees" they pay through the state gasoline tax and vehicle registration fees will be used for their intended purpose; and

WHEREAS, Wisconsin's practice of replacing the dollars transferred from the state's segregated transportation fund with GO bonds puts our state in the precarious position of bonding to fund ongoing operations; and

WHEREAS, the Pew Center on the States recently released a report that included Wisconsin as having one of the ten worst budget situations in the country and specifically cited transferring money from the transportation fund to fund ongoing operations as an example of one of the practices that has put Wisconsin in such an untenable position; and

WHEREAS, the debt service for these bonds will have to be paid for out of the state's general fund which hinders its ability to fund other programs like Shared Revenue, Youth Aids, Community Aids and courts in the future; and

WHEREAS, using the states general obligation (GO) bonds in this way has hurt the state's bond rating, and a report issued by CNN in 2009 listed Wisconsin as having the second worst GO bond rating in the country; and


FORWARD
E PLURIBUS UNUM

C-Rule 10-057?

Date?

Name

Teacher in the public school system almost 20 years

Share my perspective on the wind sitting rules

Never mind that :

- The terms being used to describe industrial electrical generation facilities are couched in agricultural terms
- We are not fooled: this is not an agricultural endeavor

  Wind farms are not farms that 'harvest' electricity. They are Industrial electrical generation facilities that are not as beautiful as blue skies and green fields nor glacial hills

- the rules clearly support wind development rights over and above the rights of the people of the state of Wisconsin

- Wind development is at the expense of the tax payer and property owners

- Wind developers are on the dole of state and federal tax dollars being spent at an unprecedented rate in a quest for what? Reducing dependence of foreign oil? How does that work? What power plants depend on foreign oil?

- Never mind that no one is providing citizens with the big picture –just how big will this wind project be? Will the largest project be the proposed Town

of Morrison project with about 100 towers? Will it be the contiguous facilities from northern Fond du Lac and southern Calumet counties that will host well over 245 towers if all plans are approved? Or will we be able to discuss the true scope of this project that is expected to extend from Columbia County all the way up through Door County filling the Niagara Escarpment with a projected 14 to 16 thousand turbines?

Never mind that:

- Rules as written leave no room for true mitigation of real problems associated with living in a large industrial electrical generation plant
- Never mind that 45 days is already too long to wait for my cell phone and computer access to be restored to its full functioning capacity
- Never mind that my television and radio are frequently interrupted and I can not sit down and enjoy a good show without loss of reception
- Never mind that I don't have blinds on my house now because I want to enjoy the beautiful sunsets
- Never mind that the esteemed members of the committee that drafted the rules believe there are no known health risks associated with living in the middle of industrial electrical generation facilities
- Really? A simple Google will open up sites reporting health risks not just in the United States but also across the globe.

I could continue on with never minds. The real issue that the commission failed to address in drafting the rules for sitting industrial wind generation facilities is

really simple. It is simply setbacks. If set backs are adequate, shadow flicker, noise and industrial accidents from ice throws, lightning strikes, and any other occurrence caused by neglect or nature will not be a concern. Adequate setbacks will eliminate the need for mitigation of concerns. Face it, if these concerns were not a problem we wouldn't be meeting here today.

Respectfully,

Teresa Hahn
W3797 Cty F
Chilton, WI 53014


FORWARD
E PLURIBUS UNUM

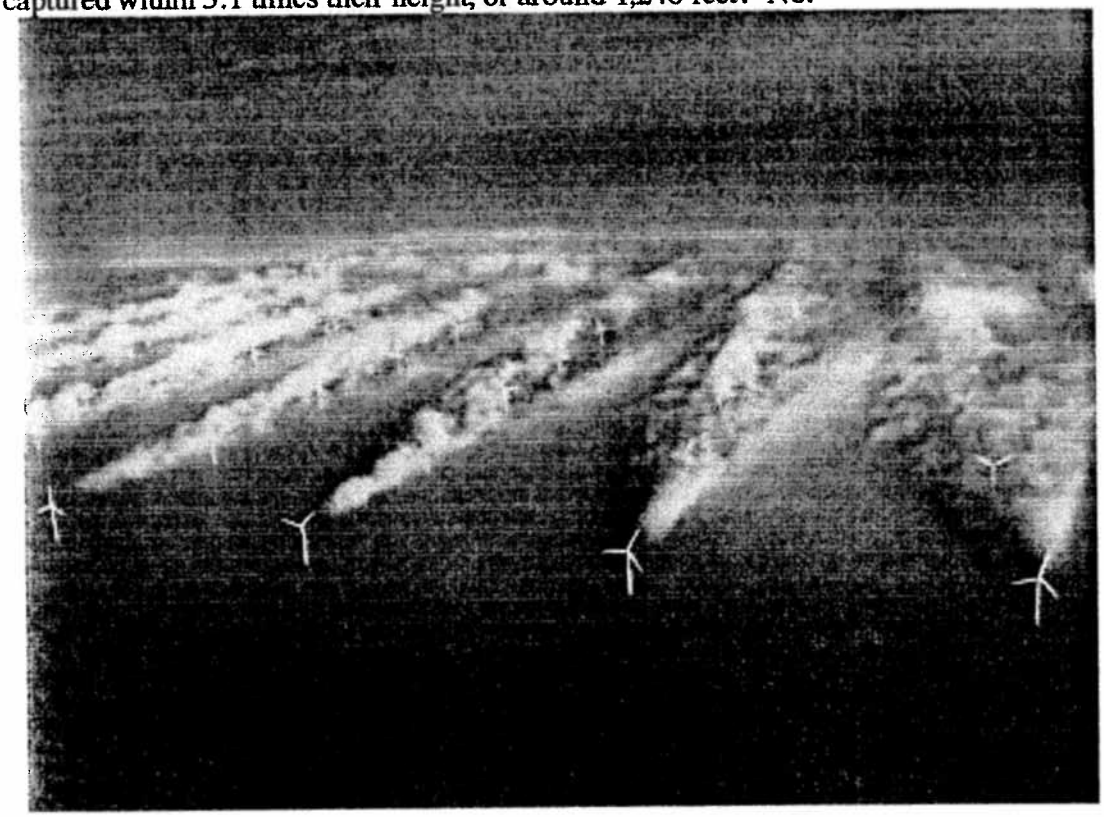
C-Rule 10-057?

Date?

To: The Senate Committee on Commerce, Utilities, Energy, and Rail
From: Kevin Kawula, Natural Area Restorationist, Owner and Operator of Lone Rock Prairie Nursery, Rock County Parks Volunteer, Town of Spring Valley Zoning Board Secretary, Rock County Conservationists Board Member, Concerned Citizen.
Re: PSCW Wind Siting Rule 128, and Addressing the absence of a Wildlife Representative on the Wind Siting Council.

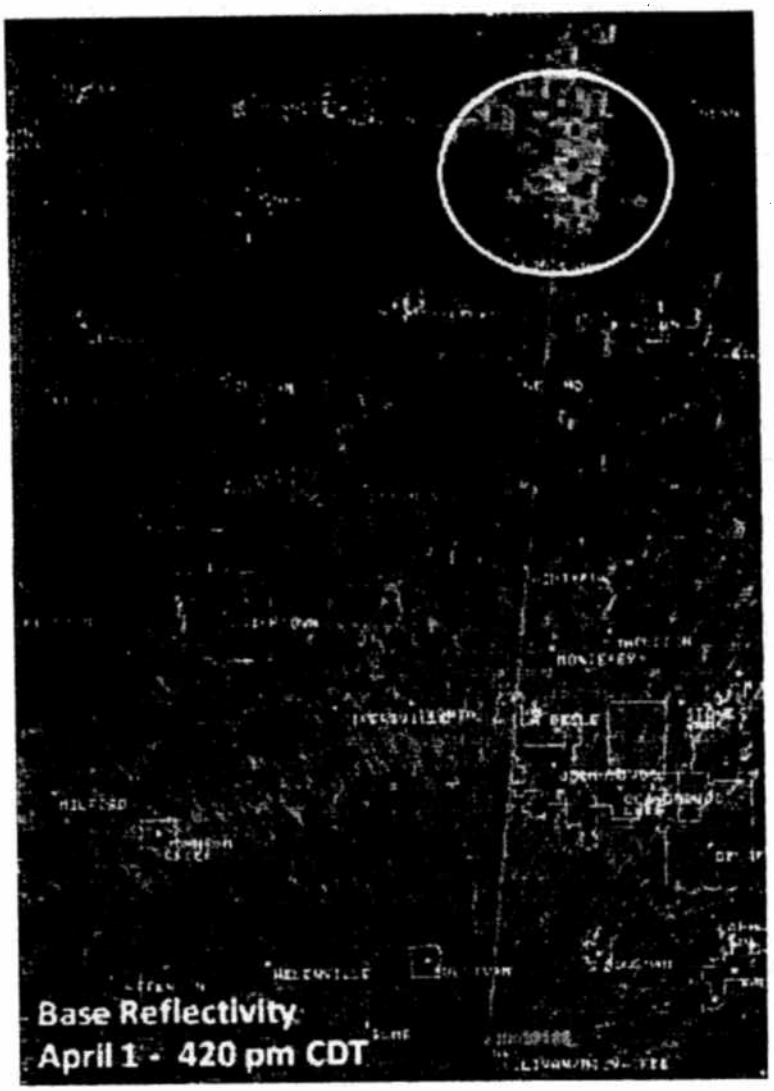
I would like to address PSC Rule 128 first

What PSC Rule128 does not address is the inherent and obvious trouble with industrial scale wind energy, the size of the machines. Spinning something the size of a 747 or larger will have definite physical impacts. For every action, there is an equal, and opposite reaction. Please look at the image below. Will the effects of these industrial wind turbines be captured within 3.1 times their height, or around 1,240 feet? No.



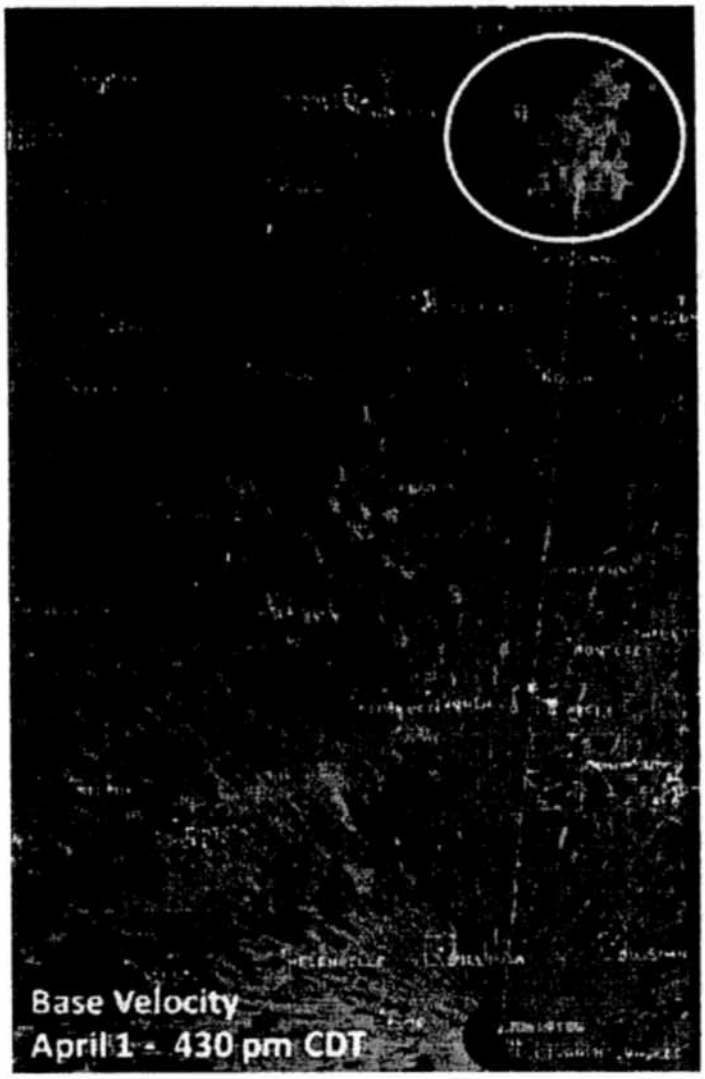
Denmark Wind Project at Sea, Turbulence and Wake expressed in clouds and mist.

These physical effects of industrial wind turbines are also captured by weather radar, but the false reading/interpretation of these radar images as storms or tornados, may be over shadowing the very real and physical wind turbine impact areas represented by the images. It would be useful to have these weather radar images reviewed to help assess what wind turbine wakes are exacting on a community.



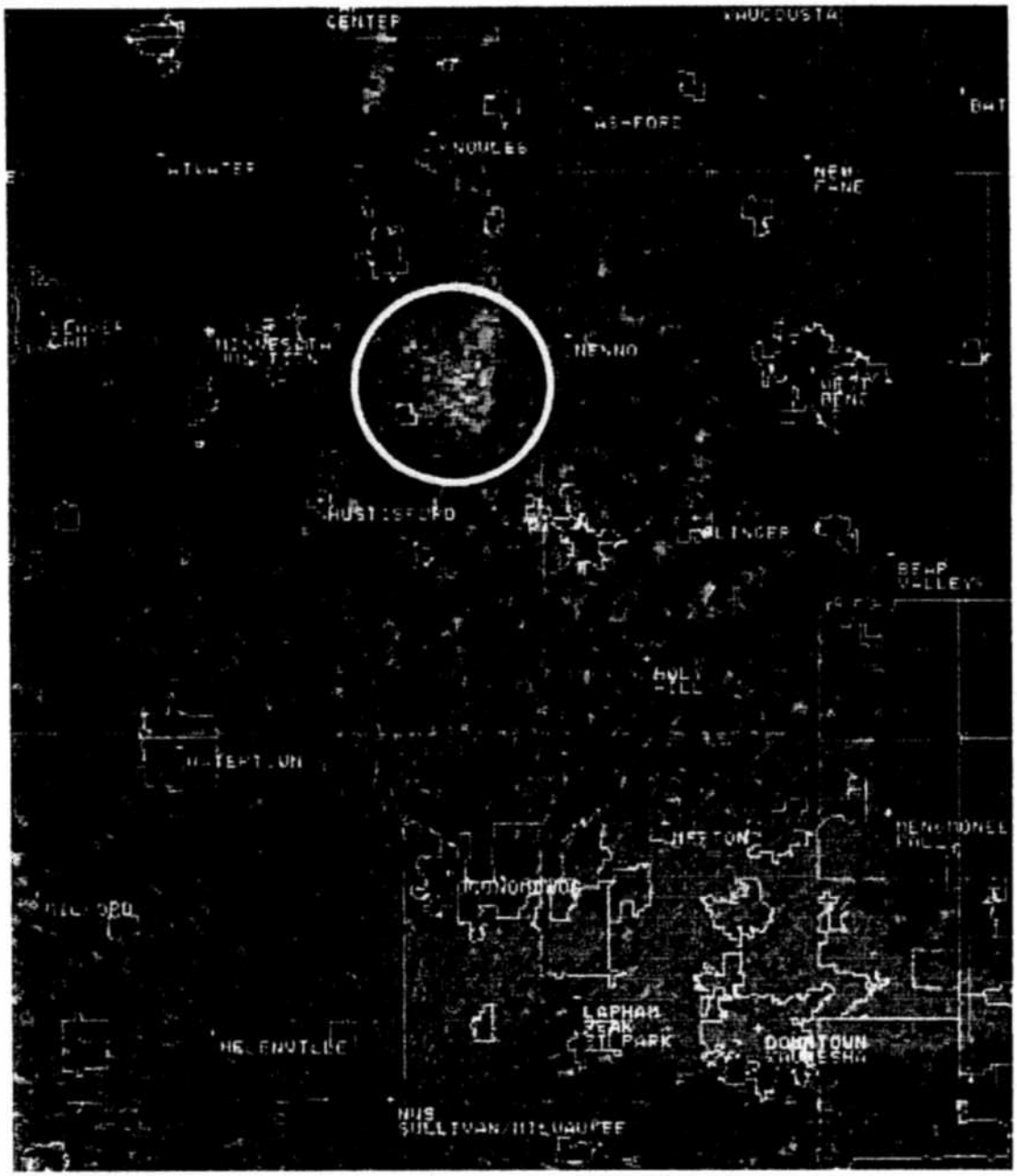
#1 - A small part of the electromagnetic energy radar beam sent from the radar is reflected back by the rotating turbines. The radar processes this "returned energy" as an area of precipitation and plots it accordingly on the map. This contamination of the base reflectivity image as illustrated in the above image, has an effect on the radar algorithms used to estimate rainfall and to detect certain storm characteristics.

This is an image from the Doppler Radar Station at Sullivan Wisconsin. The circled image is the Butler Ridge Wind Farm. Notice the scale of the "returned energy" field.

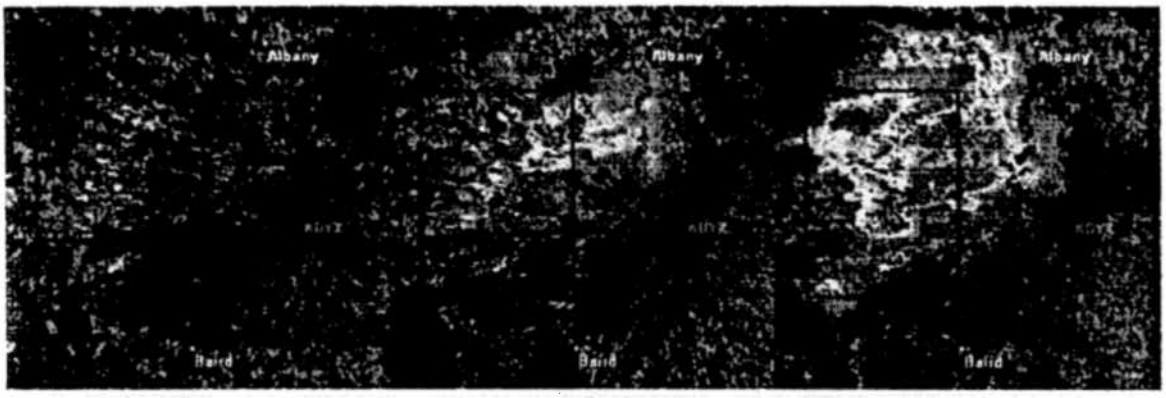


#2 - The rotating turbines also impact the velocity base data as you can see from the above image. This velocity data is used by radar operators and by a variety of algorithms in the radar's data processors to detect certain storm characteristics such as mesocyclones, tornado vortex signatures, and relative storm motion.

A second image from Sullivan showing returned energy with rotational characteristics. This cannot be a benign or harmless environment in which to live.



#3 - The above two hour animation (not animated here) from the evening of April 1, between 915 pm and 11 pm CDT shows the persistent interference from the Butler Ridge wind turbine farm on the KMKX base reflectivity radar image. (animated version available at www.wind-watch.org/documents/wind-farm-interference-showing-up-on-doppler-radar/) Note: The energy returns eventually travel some 15 miles north from the Butler Ridge turbines through Theresa, and up to Lomira (above Knowles). There seems to be a second area of return to the north of the circled Butler Ridge, this appears to be the southern wind turbines in the Forward Energy Wind Project sited around Leroy.



#4 - Sequence (left to right) of 0.5 deg reflectivity images showing thunderstorms developing over a wind farm (purple rectangle) 10-16 nm (18–30 km) west of Dyess AFB, TX WSR-88D. Left: thunderstorms have not yet developed, high reflectivity values due to wind turbines alone. Middle and Right: storm has developed to where in right image a distinct notch structure, indicative of severe weather, formed – note: turbine and weather echoes indistinguishable

These turbine induced physical impacts cannot be captured with a safety, noise, or shadow flicker setback of 3.1 times a turbines height or in the case of a 400 foot tall wind turbine 1,240 feet. 1,240 feet is an industrial turbine spacing distance used to mitigate turbine wake impacts on each other. In the PSCW's Glacier Hills EIS, chapter 2, p.13, 2.1.2 Turbine Spacing – it states that the wind turbines selected for the Glacier Hills project would require a spacing of 1,200 to 2,000 feet between each other to minimize the effect of wake and turbulence caused by the wind turbines operating. According PSC Rule 128 homes and non- participating residences are considered nothing more than another potential industrial wind turbine site.

The proper compromise safety setback, to allow industrial wind development, from non-participating residences is 2,640 feet.

Hosting or easement properties can sign to have the turbines as close as 1,240 feet No turbine should be sited 1.1 times the height of the machine from any residence or non-contracted property line. That is cruelty.

Due to the trouble with industrial wind turbine nighttime noise, and a lack of clear evidence that nighttime wind generation has an impact on curbing baseload thermal generation CO2 emissions, nighttime curtailment of industrial wind turbines must become mandatory, unless a utility can prove a real time social benefit to the reduction of a coal burning facility operation. Any nighttime wind generation, or operation of the turbines, must be approved ahead of time by the hosting Counties, Towns, and residents.

We benefit as a society from timely and accurate weather forecasts and storm alerts, and the same timeliness and forecasting should be expected of the technologically advanced wind industry when it comes to nighttime generation requests.

Wind generation numbers from the Midwest Independent Transmission Systems Operator (MISO) also raise CO2 reduction questions. Mainly how effective is the wind generation at reducing the need for thermal generation? How effective is industrial wind at reducing the need to burn coal? The MISO generation cycle begins at 4am. Load demand and generation rise at a steady rate until peak demand at 2pm-4pm, and then taper off until then end of the evening (8pm-10pm) to baseload operating levels until 4am the following morning.

From April 15th 2010 through October 12th 2010 (180 days), 33 days (18.3%) gained wind generation from their 4am starting levels through 2pm-4pm, while 90 days (50%) lost wind generation from 4am through the 2pm-4pm peak load time. 25 days (13.9%) saw an initial loss of wind generation and then a gain, while 13 days (7.2%) saw an initial gain and then a loss of wind generation. 17 (9.4%) days were positive, negative, and then positive again, one day (.6%) was negative, positive, and then negative again, and one day information for the morning was missed.

It is the wind generation loss days, initial loss days, initial gains and then loss days (the majority 129 days or 71.6% of the days vs. 50 days or 27.7% gain days and gain, loss, gain days), which this Committee, the PSC, and the Wind Siting Council need to evaluate, in order to verify CO2 reduction claims by the wind project operators. How is a MISO system's operator to respond to falling wind generation just when the daily generation load needs to be filled? Would it be more effective to ramp up the coal facilities, or the natural gas? And, should the wind return which would be ramped down?

Safe setbacks, nighttime curtailment, and reviewing CO2 reduction claims of industrial wind turbines will begin to address the shortcomings of PSC 128.

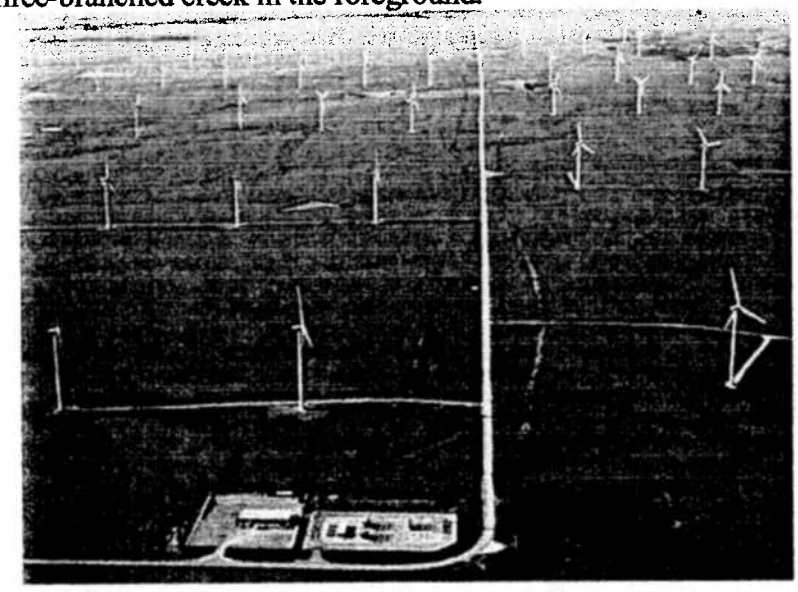
The final area to correct is to seat a missing element on the Wind Siting Council, an Environmental and Wildlife Representative. Renew Wisconsin is not an environmental operation. Clean Wisconsin tries to do better, but lacks any real environmental impact assessment capability past clinging to the hope that the retirement of coal plants will be tied to the siting of additional wind farms, and a 'community wind' loophole can be used to sidestep real siting problems with the same size machines.

Renew and Clean want to site over ten thousand industrial wind turbines in our state, and that is just wrong. They as part of the industrial wind lobby would like to see 200 to 300 industrial wind turbines built per year until 2025. That is 4,500 turbines, running at name plate capacity, but given efficiency issues, Wisconsin will really need to site 12,000 to 15,000 industrial wind turbines, to reach The Governor's Task Force on Global Warming 2025 RPS wind generation goal of 5,562GWh. (While 5,562 GWh of wind generation represents only 6% of forecast total electrical generation, it would represent 24% renewable wind energy by installed nameplate capacity. This gap, shortfall, nameplate loophole, will need to be addressed before the damage is done to our state and wildlife populations.)

The acreage needed to site this many wind turbines would be over one million acres. This Committee, the PSCW, and Governor Doyle are discussing the largest land fragmentation in this state since the introduction of the steel plow, and the development of paved roads.

Does this Committee, the PSCW, and Governor Doyle Really want Wisconsin to end up looking like the Elk River wind project, in the Flint Hills of Kansas?

This is unplowed prairie habitat used to raise grass fed beef, before construction, be sure to notice the three-branched creek in the foreground.



The three-branched creek is in the bottom right corner of this post construction photo. This photo is the definition of wildlife habitat fragmentation.

Problems with bird and bat mortalities, surrounding the inappropriate siting and operation of industrial wind turbines, have been acknowledged. Problems will continue so long as wind turbine operators seek their corporate profits at the expense of environmentally ethical and responsible standards. There is a misunderstanding, on the part of industrialists and policy makers, of how Wisconsin wildlife populations work and survive.

Wildlife populations live and survive on a very narrow margin, especially during migration. This margin is much narrower than that of any utility or shareholder. Migrating birds, bats, and insects need enough potential refugia enroute to nesting and brooding habitats. Fragmentation of these refugia along migration greenways by industrial wind turbine complexes, will lead to migrating population dislocations and additional wildlife deaths. Migrating animals do not have the energy reserves or time to detour the multiple manmade obstacles they encounter. These obstacles provide some of the bird and bat deaths the wind proponents hide behind. But, building 12,000 industrial wind turbines would exacerbate migration corridor obstacles and habitat losses, by removing additional migration opportunities and habitat over vast swaths of Wisconsin.

Agricultural land offers little nesting opportunity, but acts as defacto greenways, feeding, commuting to feeding, and nest protection habitat. The associated edge habitat of agricultural land is vital for the watch of predators, especially aerial predators. Filling Wisconsin with 410 foot tall spinning industrial wind turbines will impact/remove the remaining wildlife nesting, feeding, and rearing habitats. In the PSCW's Glacier Hills EIS, chapter 2, p.13, 2.1.2 Turbine Spacing – it states that the wind turbines selected for the Glacier Hills project would require a spacing of 1,200 to 2,000 feet between each other to minimize the effect of wake and turbulence caused by the wind turbines operating. This means that Glacier Hills would impact, or remove, nearly all of the project area's 17,300 acres plus an additional 200-1000 feet beyond the project area's perimeter from existing wildlife habitats.

What does this fragmentation mean for the potentially negative impacts on bat populations? The Glacier Hills EIS states...

4.3 BATS
"Bat mortality has exceeded bird mortality at most wind farms where post-construction monitoring of both animal groups has been conducted. Many species of bats are long-lived and have low reproductive rates. This is particularly worrisome because even if the mortality rates for birds and bats from wind turbines were similar, wind turbines can have a more significant impact on bat populations than bird populations,
with the exception of rare bird species. Bat Conservation International estimates that more than 50 percent of American bat species are in decline. As the number of wind projects continues to increase, the cumulative impact on bat populations could be serious. Wind turbines may be more deadly for bats than other structures, such as towers or buildings, on a per structure basis."

Chapter 4, p. 39, "Post-construction mortality studies are being conducted at three recently completed wind projects in Wisconsin. These projects have land cover (i.e., wooded areas, wetlands, and fallow fields within an agricultural matrix) similar to that present within or adjacent to the Glacier Hills project boundary. In addition, the projected bat activity levels based on pre-construction surveys at one of WEPCO's recently constructed wind farm projects (Blue Sky Green Field) were similar to the pre-construction estimates for the Glacier Hills project. The initial post-construction field data from the Blue Sky Green Field project show a high level of bat mortality.14 Thus, it is possible that bat mortality at Glacier Hills could also be high."

There is a simple reason for this. The Wisconsin Wind Resource Assessment Program Final Report (WRAP Final Report), states in the report's figures, p.2 " ...wind speeds are highest at midday and again late at night to early morning" (10pm to 6am). Industrial wind turbine average yearly generation numbers and income depend on this " late at night to early morning" (10pm to 6am) wind resource. This is prime bat feeding time, and low electricity usage time (no baseload CO2 emission reductions). Cut in speeds on turbines are not the issue. The issue is a devaluing of wildlife to profit an industry. Nighttime winds partly explain Wisconsin's higher than average bat mortalities. The Glacier Hills site map is an excellent tool for forecasting that Glacier Hills will also be a bat killer. Bats prefer to feed within a ¼ mile of roosting and brooding. Roosting for bats in Randolph and Scott will mostly likely be trees or woodlands, and feeding takes place largely over wetlands and streams where insects are plentiful. The Glacier Hills project area is wedged into a river, stream and wetland complex. Nighttime operation of Glacier Hills wind turbines during the bat breeding and migration seasons will cause bat deaths.

It is the alarmingly high number of bats that are dieing and will be killed if nighttime curtailment, and greater sensitivity to wildlife land usage needs are not addressed by this Committee, the PSCW, the Wind Siting Council, and ultimately Governor Doyle.

The number of bats being killed is 40.54 per wind turbine per year. This is the post construction mortality number for Blue Sky Green Field 88 turbine project. Which Means that Blue Sky Green Field project is killing between 3,500 and 3,600 bats per year. This number is consistent with bat mortality levels Cedar Ridge and Forward Wind. This means that if Renew and Clean Wisconsin achieve their lobbying goals of siting an additional 200 to 300 wind turbines each year until 2025 the bat deaths would reach a staggering 131,200 to 192,700 bats killed per year for the 4,753 wind turbines in the state. To reach the RPS goal of 5,562 GWh with 12,000 to 15,000 wind turbines the bat deaths would climb to 486,400 to 608,000 per year.

These kill rates are unsustainable, and it is unlikely that we would see the higher bat kill numbers as the surviving populations would crash, or be driven from the million plus acres occupied by wind turbines. We could see periodic migration season death spikes as bats, which do not know of the wind turbine areas (the young), enter Wisconsin wind project sites. It would devastate Wisconsin's balance of nature for decades to lose our bats to a greedy few.

It is the size of the industrial wind turbine that is causing the bat deaths. Bats are not being struck by the blades, but are suffering catastrophic damage to their lungs as they fly into the low-pressure zone that is created by the spinning blades. This drop in pressure causes the bats' lungs to expand rapidly, rupture, fill with fluid and blood, and they drown. It is called – Barotrauma – deep-sea divers get a version of it called "the bends", when raised to quickly from the depths. Birds have different lung structures, so they are not as readily affected, but bats are mammals with lungs similar to ours, so take a deep breath, imagine you can stop inhaling until your lungs burst, and you are drowning to death. Could this pressure flux be what wind project residents are suffering from, along with the noise, disturbed sleep, and shadow flicker?

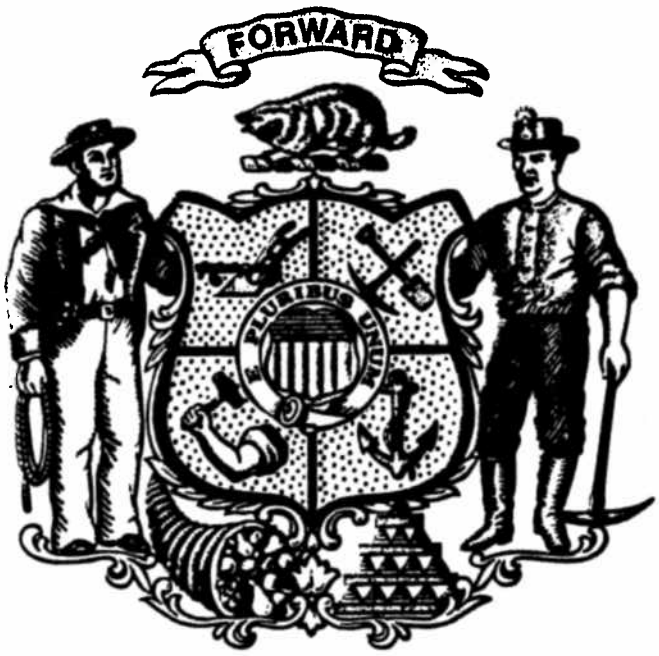
In Conclusion

Perhaps now with the physical evidence of dead bats, the images of physical impacts from photos and radar, and the absence of clear proof that coal burning is reduced in our nighttime or early morning electrical generation mix by adding wind turbines, this Committee, and the PSCW will consider adding a true environmental voice or voices, for our citizens, wildlife, and environmental concerns to the Wind Siting Council, and correct the errors in the current PSC Rule 128.

To begin, I would like to recommend Shari Koslowsky, Conservationist with the DNR, at sharikoslowsky@wisconsin.gov (608) 261-4382, to be seated and consult with the Wind Siting Council, and begin to assess the full impact of industrializing rural Wisconsin to be made clear as a part of PSC Rule 128.

Respectfully submitted, Kevin Kawula, 13133 W. Dorner Rd., Broadhead, Wi, 53520
lonerockprairienursery@gmail.com

Kevin A. Kawula 10.13.10


FORWARD
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It's difficult to tell you all the affects of large industrial wind turbines in only three minutes for something that has been going on for two years, 7 months and 10 days. I will submit more in written testimony.

I am Larry Wunsch's alternate on the wind siting council attending all but 3 of the early meetings I want to touch briefly on a few items I saw and heard or did not see or hear at the wind siting council meetings. It was obvious that at least 7 of the members have a direct financial interest in siting wind turbines and they were being allowed to make the irresponsible rules adopted in August by the PSC.

Near the end of one of the council meetings Larry Wunsch explained that he volunteered for the council to bring his first hand experience before the committee and went on to explain his thoughts on the loud sounds and shadow flicker due to a turbine being placed 1100' directly west of his home. He went into much more detail than I am also talking about property value protection etc and trying to help with guidelines so others don't have to endure what we are. When he finished with his last word Chair Dan Ebert said, "Do I hear a motion to adjourn"? Do I need to say how rude this was? Not even an acknowledgement of Larry's plight.

No discussion ever took place on the high cost of wind energy and the large subsidies and production credits given to this industry.

There was no discussion on the gross inefficiency of wind turbines nor that they are designed to be 27 to 30 percent efficient.

Wind is free and emission free. No discussion took place on the energy and emissions to dig the ore and smelt it. What about transportation road building and machinery running all night in winter.

Completely ignored were the wind ordinances adopted by Wisconsin towns and counties that were concerned about the health and safety of their residents.

One siting council member and energy company owner on numerous occasions told about that train that runs near his home. One member told about her friend in Milwaukee that lives near the interstate and airport. Trains, planes and traffic sounds have nothing in common or compare to the audible and inaudible sounds of large industrial wind turbines.

What I did not see at the siting council conclusion was any protection what so ever to the residents of Wisconsin of future wind projects. This is very disappointing.

Yes, I live in a wind factory. The Forward project by Invenergy. I was not anti wind as one council member wrote about me. In fact after the first informational meeting put on by Invenergy I was trying to think of a way I could get one on my 6 acres of land. I was neutral, naïve and ignorant until March 3, 2008 when turbine 4, 1560' directly north of my house began turning. I have 5 turbines within 3300' and 11 turbines within a mile.

Health: Within days my wife and then 13 year old son began having headaches and not sleeping well. At least I was sleeping. It was later that I realized I no longer had dreams unless I was away from home. Soon after the turbines began operation I lost my motivation and had trouble making calculations that in the past were simple to do. I was angry and tense and some days would take 2 or 3 naps to try and recoup my lost sleep and feeling of exhaustion.

In spring of 2009 I realized I was gaining 6 to 7 pounds, leveling off for a while then gaining again. I ate less to combat this and no snacks late at night yet this pattern continued. A doctor suggested I have my cortisol level tested. On July 27, 2009 I did the test. The Mayo Clinic does the evaluation. The level should be less than 100. Mine was 254. In all I gained about 35 pounds. In late September, early October all 86 turbines shut down for 21 days. I realized I had lost 17 pounds so the day after the turbines began turning I checked my cortisol level again. It was 35. From 254 to 35. In Green Bay Dr. McFadden stated cortisol levels are inconclusive. What in the world does it take to get an epidemiological study going to study all the complaints about health issues from people living near large industrial wind turbines. World wide where ever there are turbines there are health issues. How can this keep being swept under the carpet?? Lives are being ruined.

Siting standards of 2640 feet from property lines and a sound level of 5 dba above ambient are a big compromise as noted doctors and other specialists are recommending one mile or more.

Additional information:

Council member Dwight Saddler lives ¾ mile outside the Blue Sky Green Field wind factory. He stated that he does not have any affects from the single turbine near him. That gives a strong indication that ¾ of a mile should be a safe set back to homes.

Concerning my dreaming. When we go on vacation I even dream in hotels 100' from the interstate right of way or near airports. Again, there definitely is a different affect from large industrial wind turbines compared to cars, trains and airplanes.

I have blood work done about ever 6 month due to a low thyroid level and elevated blood pressure. I am on medication for both. Sleep deprivation causes diabetes, heart disease, fibromyalgia, high blood pressure and weight gain. My last 2 blood tests my glucose level was 109 (should be less than 100). That seems to be heading toward diabetes. Yes, I am eating very little sweets. I have a crackling in my ears that I never had before. My wife has a loud ringing in her ears that is 2 octaves above middle C.

My father has essential tremors. It can be misdiagnosed at Parkinson 's disease. This is hereditary. I have had minor shaking in the past, however it is getting more noticeable. My wife just showed me a fact sheet on essential tremor in which it states sleep deprivation or fatigue causes symptoms to be worse.

I am concerned. My tremors or more severe and my glucose level has become more elevated.

Patch work of regulations; How angry this term makes me feel. Towns and counties around the state have many ordinances (non wind related) different from the township or county next to it. Wind companies and legislators should not be using this term unless they are going to take over local control on all other ordinances.

Submitted by
Gerry Meyer
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C-Rule 10-057? Date?

Health Effects We Feel From Living Near Industrial Wind Turbines

13 year old son -: Can't sleep or interrupted sleep, headaches, tells us and teachers "It feels like my head is spinning 100 miles an hour. In general more anger than in the past. Most nights sleeps with one radio and some night two radios running to cover the turbine sound.

wife:- Headaches, lack or loss of sleep – often up in the middle of the night to read and try and get tired again due to either direct sound from the turbines or low frequency noise not heard but felt by the body. Ringing and buzzing in the ears. In early April, 2010 we went on a vacation to Montreal, Canada. It took 4 to 5 days for the ringing to go away. We came home after dark. When we turned on to our road she said, "The ringing is back". Updated July 19th, 2009. After being to the Dr. in January and advised to watch blood pressure went back today as it has been continuing to climb. Also gaining weight. Dr told my wife, lack of sleep will cause both of these issues. Now she has been prescribed a sleep aide to see if this will help first. If not then I will need to go on blood pressure meds. Also she (doctor) said that lack of sleep can cause heart disease and fibromyalgia. We know some people who have that and I certainly do not want this.

Gerry: -Tenseness, anxiety, occasional headaches (in the past rarely got headaches), light headed, unusual feeling in the base of the neck, nausea, anger (that elected officials have allowed this to happen) (anger from the constant sound), lack of motivation, tired most of the time, having trouble remembering names and facts, lack of feeling happy, not dreaming at home. Only dream when away from the wind farm which would show not getting into deep sleep or REM sleep. Added April 9th, 2009 Recently I have been experiencing chest pains. When I go away for a few days the chest pains go away. Crackling or hissing in my ears is now constant. I also have been gaining weight, especially the last month. In all 26 pounds since the turbines began turning even with eating less and not in the late evening. At question is my cortisol which I hope to have checked soon. Updated August 17, 2009: On Friday 8-14-9 I received the results from my Dr. from my cortisol check. I was told it is moderately high and recommended that I see an endocrinologist for further testing. I have now gained 27-37 pounds. During the worst sleep deprivation (July 29, 2009) my cortisol level was 254. It should be less than 100. On October 19th after all 86 turbines were shut down for almost 21 days and noticing that I had lost 17 pounds, I again tested my cortisol level and found it to be 35. More recently I get about 2 hours sleep a night. After that I am either consciously awake or toss and turn. When YOU get a normal nights sleep you don't even think about the chemical changes and nourishment your body and brain during sleep. Now that my sleep is deprived I am learning. Those affects you can read about in other documents I will submit. One is from my federal health insurance while looking for an approved endocrinologist due to my high cortisol level. Updated 6-20-2010. I have blood tests about every six months to most specifically check thyroid levels but other tests as well. This is the first time that my glucose level was above standards and a concern to my Dr. Diabetes is one of the diseases connected to sleep deprivation. Yes, I am concerned.

Our dog – He will walk down the sidewalk and look at the turbine because of the noise. I have commented to my wife and oldest son that "Trigger is acting like an old dog (he is 7) he walks around slow, sleeps a lot and does not have much motivation". When I finally admitted and wrote down my motivation issues I realized our dog was experiencing the same.

This is due to five industrial wind turbines being erected within ¾ of a mile from our home. One is 1560', one 2480', one is ¾ of a mile and 2 are 5/8 of a mile. Occasionally I hear one to the east 7/8 mile away and one directly south 1 mile away. Sometimes the first three mentioned are equal in sound and can be heard inside the house sometimes in all rooms. Some say, "You can hear the train or you can hear traffic and that is not a problem". That is correct. That is not a problem, but the large, loud, industrial wind turbines emit a different sound, a constant sound that does not go away and a

low frequency sound that penetrates the house and body that sometimes the body does not consciously hear, but feels.

You maybe know of Dr. Nina Pierpont. http://www.windturbinesyndrome.com/ . Most of the symptoms listed above we were experiencing before we even knew of Nina and her work.

On March 3 of 2008 I went out the door of our house and heard the sound of a jet flying over. It was not a jet. It was turbine #4 of the Invenergy industrial wind farm. The sounds we hear are at times like those not in the terminal at O'Hare airport, but if you were outside of the terminal hearing the sounds of jets taking off and landing. Sometimes the sound is not quite as loud and that of just a jet flying over, but never going away. The sound just continues. Sometimes it sounds like one or two Chinook helicopters lifting a heavy load. Turbines 4 and 73 are especially annoying at this sound. Remember they are 1560' & 2480 away respectively. Sometimes turbine 6 gets involved with the same sound. Turbine 6 is ¾ mile away. Often turbine 6 is louder than turbine 4 and 73. Therefore I believe wind turbine siting needs to be at least 1 mile from a residence. Some in the medical profession feel 2km or 1.2 miles is a safe standard. Inside our home the thumping sound is loud and sounds similar to listening to your heart in a stethoscope. Sometimes it is just the whooshing sound. All these sounds are unacceptable and have completely taken away our quality of life.

The states sound standards are completely unacceptable. No one in the capital will answer the question who wrote the states model for wind turbine siting. Did Invenergy write them with the PSC's rubber stamping? Why is 50 decibels OK? It is not. It is way too loud. Sound pressure on the ears is not linear, but logarithmic. That means it is similar to the scale for measuring earth quakes. A small increase in the decibel reading is a large increase in pressure on the ears.

Wind energy is terribly inefficient. The 2nd quarter of 2008 the Forward project by Invenergy was 28% of it's capacity. The 3rd quarter only 17.5% of it's capacity. Mr. Andy Hasselbeck the project manager for the Johnsburg Blue Sky project told me personally (project open house 2009) that wind turbines are designed to be 27-30% efficient. Why in the world are our legislators and government promoting such inefficiency while at the same time forcing car companies to increase there café standards?

It is very frustrating to hear the energy companies tell residents that the turbines make very little noise, can be barely heard at 1000' away, make about as much noise are your refrigerator, not any louder than a conversation, sound like the wind blowing in the trees, sound like the waves on the ocean, that shadow flicker is minimal or can ("can" but isn't) be eliminated and actually increases property values and government leaders believe that BS. Lies, lies, lies. When the residents that are affected tell what life is really like in a wind farm they are called NIMBY's, put down and ridiculed. That is so frustrating. I have listed the sounds of living in a wind farm. Shadow flicker to many residents is a terrible issue. I can take you around showing you homes that have been for sale over a year, some with price reduced signs on them. No one wants to live in a wind farm. There are a variety of homes in this project for sale. Why don't energy company employees, renew Wisconsin members and legislators buy some of these homes, stimulate our neighborhoods and see what life is like living in an industrial wind farm.

Wind energy will only produce one to two percent of our energy needs and is exorbitant in cost. If it is a viable source of energy take away the tax incentives, the

production credits and other tax payer resources and see where private industry takes wind energy.

Renewable portfolio standards were voted on by our legislature in a hasty manner with no regard for potential health affects caused by industrial wind turbines. These renewable portfolio standards need to be reduced not raised and a moratorium on wind factory construction enacted until all the negative health affects can be solved. Lies spewed from wind company mouths need to be evaluated and ignored and victims of wind factories need to be listened to and not denounced.


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C-Rule 10-057?

Date?

Transcript of Testimony
By Dr. Carl V. Phillips
Wind Siting Council Hearings
June 2010

Submitted by:
Carl Johnson
1893 Wayside Road
Greenleaf, WI 54126

This is a transcript of the oral testimony of Dr. Carl V. Phillips at the Wind Siting Council hearings this summer. His written testimony was also posted on the Wind Siting Council Docket at the Public Service Commission.

PSC: Please raise your right hand. Do you swear to tell the truth, the whole truth, and nothing but the truth?

Carl V. Phillips: Yes, I do.

PSC: OK, spell your name.

PHILLIPS: Carl V. Phillips, C-A-R-L, initial V as in Vincent - Phillips - P-H-I-double L-I-P-S

PSC: All right, go ahead.]

I'm an epidemiologist and policy researcher. I'm specifically expert in how to optimally derive knowledge for decision making from epidemiologic data.

I have a PhD in public policy from Harvard University, and I did a postdoctoral fellowship in public health policy and the philosophy of science.

I've spent most of my career as a professor of public health and medicine, most recently at the University of Alberta and I currently direct an independent research institute.

I reviewed the literature on health effects of wind turbines on local residents, including the reports that have been prepared by industry consultants and the references therein, and I have reached the following conclusions which I present in detail in a written report that I believe will be submitted [to the commission].

First, there is ample evidence that some people suffer a collection of health problems, including insomnia, anxiety, loss of concentration, general psychological distress, as a result of being exposed to turbines near their home.

The type of studies that have been done are not adequate to estimate what portion of the population is susceptible to the effect, the magnitude of the effects, or exactly how much exposure is needed before the risks become substantial, but all of these could be determined with fairly simple additional research.

What is clear is there is a problem of some magnitude. The evidence may or may not be enough to meet the burden of a tort claim about a specific disease, but in my opinion it's clearly enough to suggest that our public policy should not just be to blindly move forward without more knowledge.

The best evidence we have - which has been somewhat downplayed in previous

discussion - is what's known as "case cross-over data," which is one of the most useful forms of epidemiologic study when both the exposure and the disease are transitory. That is, it's possible to remove the exposure and see if the disease goes away, then reinstate it and see if the disease recurs, which is exactly the pattern that has been observed for some of the sufferers who physically moved away and sometimes back again.

With that study design in mind, we actually have very substantial amounts of data in a structured form, contrary to some of the claims that have been made. And more data of this nature could easily be gathered if an effort was made.

Moreover, people's avoidance behavior—their moving from their homes, and so forth—is a clear (what's called) "revealed preference measure" of their suffering. Such evidence transforms something that might be dismissed as a subjective experience or perhaps even fakery, to an objective observation that someone's health problems are worth more than the many thousands of dollars they've lost trying to escape the exposure.

My second observation . . . is that these health effects that people are suffering are very real. The psychologically mediated diseases that we've observed, and in fact overall mental well being, are included in all modern accepted definitions of either individual health or public health. It's true that they are more difficult to study than certain other diseases, but they probably account for more of the total morbidity burden in the United States than do purely physical diseases. Therefore [they] should not be in any way dismissed.

Third, the reports that I have read that claim there is no evidence that there is a problem seem to be based on a very simplistic understanding of epidemiology and self-serving definitions of what does and what does not count as evidence. I don't think I can cover too much of this in the available time right now, but I explain it in detail in my report—why these claims, which probably seem convincing to most readers *prima facie* [at first glance], don't represent proper scientific reading. Moreover, the conclusions of the reports don't even match their own analyses. The reports themselves actually concede that there are problems, and then somehow manage to reach the conclusion that there is no evidence that there are problems.

And my final point, as I've already alluded to, is it's quite possible to do the studies it would take to resolve the outstanding questions, and they could actually be done very quickly by studying people who are already exposed.

This isn't the type of circumstance where we cannot really know more until we move forward and wait for years of additional exposure. The only reason we don't have better information than we do is that no one with adequate resources has tried to get it.

That's the conclusion of my points.

Wind Siting Council
Final Recommendations
To the Public Service Commission
Wind Siting Rulemaking
Pursuant to 2009 Wisconsin Act 40
August 9, 2010

The Minority Report Section

Submitted by:
Carl Johnson
1893 Wayside Road
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APPENDIX E: MINORITY REPORT

Introduction

We appreciate the opportunity to attach a minority opinion to the Wind Siting Council's final report to the Commission. As described in the report, the Council worked very hard for over four months to make sure that the viewpoints of the varying interested parties were heard, and we have reached consensus on a number of issues. However, there are several issues—which we believe are the most important issues—on which the Council simply was not able to reach consensus. We believe that this inability can in large part be explained by the make-up of the Wind Siting Council and by a process that did not insist on the best quality information and did not elicit critical thinking in the participants.

We acknowledge and respect the vast range of facts, opinions, and interests represented in the Council's membership. The motivation of individual Council members to protect the economic investments of each of the parties involved—property owners, turbine hosts, local governments, developers, and energy companies—is clear and easy to understand. The primary concern of this minority report, written by persons living among wind turbines, by realtors, and by a town official, is protecting the quality of life for people living near wind energy developments who have not chosen to participate in those developments. We believe it is the responsibility of a governmental body to provide an opportunity for citizens to consent on some on the most contentious issues relating to wind energy development.

We believe that our views are not adequately addressed in the straw proposal and the report presented by the Council to the Commission. We worked hard to listen to ideas that differ from our own, and we appreciate the opportunity to hear differing views over the many hours of meetings. However, our concerns with the product of the Wind Siting Council is not with the loss of votes on particular issues, it is with the failure of the process to address the realities of the effects of large wind turbines on nearby populations, to bring quality information into critical areas, and to explore the economic implications of locating an industrial facility next to a residential area.

We would ask the reader to be tolerant of the varying writing styles that result from multiple authors and to excuse indications of frustration that were not removed from the text. Council members supporting this minority opinion include a member representing towns, both realtor members, and a landowner living in the vicinity of a wind energy system. Our opinions are also supported by another landowner living in the vicinity of a wind energy system, Gerry Meyer, who served as one of our alternates to the Council.

Our issues of concern include:

- The Composition of the Wind Siting Council
- Health
- Noise
- Shadow Flicker
- Property Values

APPENDIX E: MINORITY REPORT

Wind Siting Council Membership

Wind turbine siting has been a contentious issue in this state—separating families, communities and abandoning Wisconsin residents to their fate. Recognizing this state of affairs, the legislature in Act 40 designated appointments to a Wind Siting Council that were intended to produce an evenly-balanced composition. Unfortunately, the appointments made were heavily weighted on the side of members having a direct or indirect financial interest in promoting wind development in the state.

It may have been more appropriate to have had all three Commissioners discuss these appointments at one of their open meetings. In future, there may be need for some legislative committee oversight in future Wind Siting Council member selection, since these decisions ultimately promote outcomes that could unnecessarily burden Wisconsin citizens in the name of "the greater good."

The following is the language in the statute that prescribed the composition of the Wind Siting Council:

2009 WISCONSIN ACT 40
The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

SECTION 1. 15.797 of the statutes is created to read:
15.797 Same; council. (1) WIND SITING COUNCIL.
(a) In this subsection, "wind energy system" has the meaning given in s. 66.0403 (1) (m).
(b) There is created in the public service commission a wind siting council that consists of the following members appointed by the public service commission for 3–year terms:

1. Two members representing wind energy system developers (Developer Members)
2. One member representing towns (Towns Member) and one member representing counties (Counties Member)
3. Two members representing the energy industry (Energy Members)
4. Two members representing environmental groups (Environmental Members)
5. Two members representing realtors (Realtor Members)
6. Two members who are landowners living adjacent to or in the vicinity of a wind energy system and who have not received compensation by or on behalf of owners, operators, or developers of wind energy systems (Landowners)
7. Two public members (Public Members)
8. One member who is a University of Wisconsin System faculty member with expertise regarding the health impacts of wind energy systems (UW Faculty Member)

The Table following indicates the degree of compliance with the legislation and identifies those with direct or indirect financial or organizational interests in the promotion of wind energy systems in the state. Commentary is found on the pages following the table:

APPENDIX E: MINORITY REPORT

Membership on the Wind Siting Council called for in 2009 Wisconsin Act 40
As appointed by the Public Service Commission
a check with the legislative language and
identification of financial or organizational interests in the promotion of wind energy systems

SECTION 1. (b) There is created in the Public Service Commission a wind siting council that consists of the following members appointed by the Public Service Commission for 3-year terms:

NAME	AFFILIATION	APPOINTMENT MATCHES LEGISLATIVE LANGUAGE?	INDEPENDENT OF FINANCIAL OR ORGANIZATIONAL INTEREST IN THE PROMOTION OF WIND ENERGY SYSTEMS?
1. Two members representing wind energy systems developers.			
Tom Green	Wind Capitol Group	YES	NO
Bill Rakocy	Emerging Energies of Wisconsin, LLC; CREWE Member	YES	NO
2. One member representing towns and one member representing counties.			
Doug Zweizig	Town of Union (Rock Co.) (Town wrote an ordinance)	YES	YES
Lloyd Lueschow	Green County (no industrial wind activity)	YES	YES
3. Two members representing the energy industry.			
Andy Hesselbach,	WE Energies; CREWE Member	YES	NO
Dan Ebert,	WPPI Energy; CREWE Chair	YES	NO
4. Two members representing environmental groups.			
Michael Vickerman	RENEW Wisconsin	YES	NO
Ryan Schryver	Clean Wisconsin	YES	NO
5. Two members representing realtors.			
George Krause Jr.	Choice Residential LLC	YES	YES
Tom Meyer	Restaino & Associates	YES	YES
6. Two members who are landowners living adjacent to or in the vicinity of a wind energy system and who have not received compensation by or on behalf of owners, operators, or developers of wind energy systems.			
Dwight Sattler	Landowner 3,700 feet from a turbine	YES	YES
Larry Wunsch	Landowner 1,100 feet from a turbine	YES	YES
7. Two public members.			
David Gilles	Godfrey & Kahn former WPSC General Council	NO	?
Jennifer Heinzen	Lakeshore Technical College, Pres. RENEW WI	NO	NO
8. One member who is a University of Wisconsin System faculty member with expertise regarding the health impacts of wind energy systems.			
Jevon McFadden	Assigned to the Wisconsin Department of Health Services. Employed by the Federal CDC. Admitted non-expert on this subject.	NO	?
Number of members not matching the legislative language		3	
Number of members independent of financial or organizational interest			6

APPENDIX E: MINORITY REPORT

Commentary on the composition of the Wind Siting Council:

- Three of the members of the Wind Siting Council were also members of the Coalition for Clean, Responsible Energy for Wisconsin's Economy (CREWE), having a history of working in concert on the wind siting issue. "CREWE is a coalition group that formed to advocate meaningful energy policy change consistent with the Governor's Global Warming Task Force final report, which will have a positive impact on Wisconsin's economic development and security and foster job creation. CREWE's membership consists of Alliant Energy, EcoEnergy, Johnson Controls, Xcel Energy, C5•6 Technologies, Madison Gas and Electric, Orion Energy Systems, Forest County Potawatomi Community, Wisconsin Energy Corp., Emerging Energies of Wisconsin, MillerCoors, American Transmission Co. and WPPI Energy." http://wicrewe.com/

- The legislation called for two "public members," presumably, in the simplest term, persons who represent the best interests of the public.
  The definition of "general public" found at allwords.com (http://www.allwords.com/word-general+public.html) would be:
  1. *Those members of the public who have no special role in a specific public area, such as an airport, hospital or railway station; there will typically be restrictions on their access.*
  2. *Members of the public not in the attentive public of any given issue; laypersons.*

  The two people appointed were far from laypersons on the issue of wind energy systems in Wisconsin:

  "**David J. Gilles** is a shareholder and a member of the environmental and energy law practice group in the Madison office and has expertise in energy regulatory law matters. He also works with the antitrust, consumer protection and government practice team. Prior to joining the [Godfrey & Kahn] firm, Dave served as General Counsel to the Public Service Commission of Wisconsin (2003-2007). The Commission is an independent regulatory agency, responsible for overseeing public utilities providing electric, gas, water and telecommunications services to the public.
  As General Counsel, Dave was responsible for all legal matters affecting the agency. Dave supervised and directed legal representation in state and federal courts and before the Federal Energy Regulatory Commission and Federal Communications Commission. While at the agency, legislation streamlining procedures for approval of energy facilities was enacted (2003 Wisconsin Act 89). In addition, legislation setting renewable resource portfolio standards for energy providers became law (2005 Wisconsin Act 141)." (http://www.gklaw.com/attorney.cfm?attorney_id=300)

  Jennifer Heinzen is the President of RENEW Wisconsin. For an example of her advocacy for increased use of wind energy systems in Wisconsin, see her response to perceived anti-wind comments of State Representative Bob Ziegelbauer. http://renewmediacenter.blogspot.com/2009/01/response-to-comments-of-state-rep-bob.html

APPENDIX E: MINORITY REPORT

- Probably the most problematic appointment to the Wind Siting Council was the person appointed to serve as the "University of Wisconsin System faculty member with expertise regarding the health impacts of wind energy systems." The person appointed is an employee of the Wisconsin Department of Health Services, an agency that has taken a position on the issue of wind turbines and health: "the information currently available to the Division of Public Health does not support the conclusion that existing setback criteria would result in adverse health impacts to the public." (Letter from Seth Foldy, State Health Officer and Administrator, Division of Public Health to Kendall Schneider, Chair, Town of Union (Rock County) Town Board, September 4, 2009) This carefully worded conclusion is strikingly similar to McFadden's conclusion in his presentation to the Wind Siting Council on May 17, 2010: "Evidence does not support the conclusion that wind turbines *cause* or are *associated with* adverse health outcomes." As an employee of the Bureau of Environmental and Occupational Health, McFadden is presumably subordinate to Foldy and therefore constrained in his conclusions to those of his agency.

  Act 40 called for an independent researcher, a faculty member in the University of Wisconsin system. The person appointed is not a faculty member, but an adjunct assistant professor:

  > Definitions are found in the **Wisconsin Administrative Code: UWS 1.04 Faculty.** *"Faculty" means persons who hold the rank of professor, associate professor, assistant professor, or instructor in an academic department or its functional equivalent in an institution.*
  >
  > and the **Faculty Policies and Procedures University of Wisconsin—Madison** (As approved by the Faculty Senate on 15 May 1978, with subsequent amendments as of 4 May 2009)
  > *1.02. UNIVERSITY FACULTY. A. The university faculty consists of all persons who hold the rank of professor, associate professor, assistant professor, or instructor with at least a one-half time appointment in UW-Madison, or with a full-time appointment jointly between UW-Madison and UW-Extension.*)
  >
  > Directory search at the University of Wisconsin—Madison:
  > 1 match
  > Name JEVON MCFADDEN
  > E-mail
  > Phone
  > Title ADJUNCT ASST PROF
  > Division SCHOOL OF MEDICINE AND PUBLIC HEALTH
  > Department POPULATION HEALTH SCIENCES

Adjunct professors, as can be learned from Wikipedia, are "Typically part-time non-salaried, non-tenure track faculty members who are paid for each class they teach. This position does not always require a completed PhD." (http://en.wikipedia.org/wiki/Professor#United_States_and_Canada) Therefore the Wind Siting Council did not have the quality of instruction in the peer-reviewed literature on the health impacts of wind energy systems envisioned by the legislators. Instead of a researcher who is accountable to the University and the community of scholars for the quality of assessment on this question, the Council had a member who only looked like a faculty member, who has not published any investigation into such questions, and acknowledged that he had only informed himself in the relevant literature for a few years.

We want to be clear that our concerns about the composition of the Wind Siting Council are not criticisms of the individuals appointed. In each case, these individuals were appropriate

representatives of their roles and organizations. They were hard-working and conscientious members of the Council. Our critique is with the effect that these appointments had on the process of the Council's deliberations and with the pre-determination of the recommendations contained in the Council report.

The legislatively-desired diversity of the Council was clearly distorted in the appointment process, and the consequences of that act can be seen in the conduct and product of the Council. At the first meeting, Council members are described in the Council report as sharing "his or her background, experience and thoughts on wind development." However, none of the three members of CREWE mentioned that part of their experience, even though they had been working together to advance that organization's agenda at that time. It is clear that those expecting regulation from the Commission's rules and those Council members associated with them would have a strong voice in the recommendations for those regulations.

The Council Chair repeatedly urged the Council to work toward a consensus and even suggested specific ways in which opposing positions might be accommodated, but the majority operated to deflect information or proposals that might interfere with the agenda of ensuring that local jurisdictions would not be able to restrict wind farm development. The imbalance in favor of increased ability to site wind farms resulted in

- an inadequate and biased review of the scientific literature,
- little review of state and national regulations,
- no examination of the ordinances passed in Wisconsin by local jurisdictions (even though these ordinances were frequently cited as the rationale for the Council), and
- a series of majority votes in favor of relaxed regulation of wind energy systems.

The pattern of voting by this block of members can be seen in the *Wind Siting Council Straw Proposal Amendment Ballot: Data Tabulation* distributed on July 9, 2010.

Had the Commissioners vetted the Wind Siting Council applicants as a group in an open meeting, perhaps the council would have been a more diverse group applying equal consideration for the promotion of wind development and minimizing burdens for the residents of Wisconsin.

Health

The Wind Siting Council failed to address health issues adequately in their recommendations for the wind siting rules.

The following pages are a personal account from a resident in the Forward Energy project. They illustrate how some Wisconsin residents' health is being impacted while living in a wind facility, his increasing awareness of how his neighbors are affected, and his experience in interacting with health professionals.

> World wide, wherever large industrial wind turbines are erected, there are numerous complaints of health effects. Most common, and immediately after turbines begin to turn, are headaches and loss of sleep.

APPENDIX E: MINORITY REPORT

On May 17th wind siting council member Jevon McFadden gave a presentation titled "Wind Turbines: A Brief Health Overview." His research did not include any visit or interview with current wind farm residents, nor did it include overnight stays in homes within a wind farm. It mostly included information obtained from reports obtained on the internet. I feel there are serious flaws in that presentation. I will only cite two of those slides. On slide 68 the second bullet point reads, "Persons with sleep problems should be medically evaluated". That seems to be a needless visit to the doctor as wind farm residents did not have this sleep problem before the turbines began turning. It is not because some of those residents are getting older as one council member suggested; it is the frequent jet-flying-over sound or thumping sounds that often last for days at a time that are the catalyst of the problem. The third bullet point of slide 68 states, "Symptoms of sleep disturbance, vertigo, tinnitus, anxiety, etc. may represent serious underlying medical conditions." Again, these symptoms were not present before the turbines were installed.

In correlation to the symptoms beginning just after or shortly after the wind turbines began turning, the symptoms (depending on their severity) go away immediately after leaving the wind farm for vacation or in some cases abandoning homes out of desperation. Sleep returns immediately, and headaches cease right away. Some residents report that they no longer dream, however dreams return when they sleep away from their home. Ringing in the ears takes several days to clear up, while more serious internal problems may take months to improve.

One young woman in the Forward project had intestinal ulcers that began after the turbines began turning that went away in the following months after her family abandoned their home and moved to a peaceful cul-de-sac in a nearby village. The mother of the same family and a woman in a home less than a mile away both had compromised immune systems. Of course, this was diagnosed by doctors. After moving from their homes,, their health and weight improved observably. These, of course, are only a few of an unknown number of persons in the state who have been affected by the placement of wind turbines adjacent to their properties. We urge the Public Service Commission to determine the extent of the problems before permitting the siting of additional turbines.

Before continuing, we will list some, however probably not all, of the health effects experienced by residents living where wind turbines are not responsibly sited: headaches, sleep deprivation, anxiety, dizziness, chest palpitation, stress, depression, anger, nausea, exhaustion, irritability, lack of motivation, loss of short term memory, tinnitus, intestinal ulcers, and reduced immunity system.

The Wind Siting Council heard numerous times from member Larry Wunsch (an uncompensated landowner living adjacent to or in the vicinity of a wind energy system member) about what it is like to live 1,100 feet from a large industrial wind turbine regarding sound, health, and shadow flicker. Council member Dwight Sattler has stated he only hears the turbine to the south east of his home sometimes and does not experience shadow flicker. Mr. Sattler estimated to the council that the single turbine is at least ½ a mile from his home (Other estimates are 3000+ feet away.). This difference between these two members demonstrates irresponsible vs. responsible siting. Those of us in the minority were expecting responsible siting rules from this council.

APPENDIX E: MINORITY REPORT

Slide 72 of Dr. McFadden's presentation states, "Encourage concerned individuals to report symptoms or illness to a healthcare provider" and "Encourage health officials to continue to assess new evidence as it becomes available." The actual words stated were, "Health officials both at the state and local levels are advised to continue to assess new evidence as it becomes available. This is standard practice with regards to all issues of potential public health impact."

The following is one personal account (An interested Department of Health Services could easily learn of many others.): *On May 18, 2010, I called my clinic. Both my wife and I have been to the doctor concerning our symptoms. My wife especially had a doctor patient conversation of the diseases caused by sleep deprivation. Those diseases include high blood pressure, diabetes, heart disease and fibromyalgia. I called the clinic to find out if they report our visits concerning the negative health affects of living too close to large industrial wind turbines to the county or state health departments. The answer, "No, we do not," "We only report communicable diseases and specific requests from the health department." I again called our doctor on July 27, 2010 to see if they had been requested to submit information to the county and state health departments concerning patients with illnesses due to wind turbines too close to their homes. "No, no such request had been made". Based on the information received from my doctor and clinic, I do not believe health issues caused by wind turbines will "filter" to the state health department from visits to our "local health care provider."*

How many people go to their doctor and then report to their county or state health departments that they made a medical appointment and the results of that visit? How many residents living in a wind farm would even think about calling their county or state health department to let them know of their symptoms? I think the health departments would admit that not many would. Yet, locally we hear many complaints of residents with sleep deprivation, headaches (caused by sound and shadow flicker), and many other health concerns.

In a public meeting of the Brown County health department, Dr. McFadden stated that cortisol levels are inconclusive. If a patient has a cortisol level of 254 (A person's cortisol level should be less than 100.) during a period of high sleep deprivation caused by five wind turbines with ¾ of a mile of his home and the day after a 21-day shut down of the Forward Project the patient's cortisol level is 35, it should raise high red flags to the state Department of Public Health and the public health representative on the wind siting council that there could be a health concern related to the wind turbines.

Residents that self-report health issues seem to be in question of their reliability by Dr. McFadden. If we go to our doctor for any symptom not necessarily wind energy-related, our doctor will ask us what brings us today. Our doctor will ask questions related to the issue at hand, often very detailed, to help him/her assess the situation and determine the next steps in tests or treatment. Those answers would be self reported. I believe many patients would anticipate those questions and may even have details mentally prepared or written down

On June 9th, Wind Siting Council Chair Dan Ebert introduced his straw proposal. In his statements explaining his proposal, he concluded: "Having read through a number of the studies and having heard Jevon's presentation, I don't believe there is sufficient analysis

and evidence to suggest that we need to weigh in on the health issues at this point." That was taken as a slap in the face to council member Larry Wunsch and his alternate Gerry Meyer and many other wind farm residents in the Wisconsin wind farms and wind farms around the world that are suffering from the effects of industrial wind turbines being irresponsibly placed too close to their homes. The "majority" has downplayed the health issues during the Council's work time.

We agree that, like many other sounds and daily happenings, some people are more sensitive to surroundings than others. In the case of wind energy there seem to be many residents that are sensitive to not just the loud, very obvious sounds, but also the low frequency sound that often is not heard, but felt by the body. Low frequency sound was barely addressed or was downplayed by the Council. The peer-reviewed literature of Nina Pierpont, and studies done by Dr. Christopher Hanning, Dr. Carl, Phillips, Dr. Robert McMurtry, Dr. Amanda Harry, Dr. Michael Nissenbaum and others, including sound engineer Rick James, were ignored or dismissed.

Numerous times during the wind siting council meetings it was brought up that any decisions on health had to be based on science. If government agencies are not willing to do epidemiological studies, how will science ever determine the health issues related to wind energy? At the Brown County Health Department meeting on May 25th, concerned residents challenged Dr. McFadden and the state health department representatives at the meeting to come up with a questionnaire for current wind farm residents. Part of that request was based on the observation that there were already enough "lab rats" to study rather than create more victims of wind energy. The **fact** is: That wherever large industrial wind turbines are erected there are health issues.

This conclusion is supported by a physician who has surveyed studies conducted on those affected by wind turbines: "*Large industrial wind turbine developments do not belong in close proximity to locations where people live and work.*"[his italics] (Herbert S. Coussons, MD, "Re: Health Impacts and Setback Guidelines for Wind Siting Council," PSC REF#: 130689) Dr. Coussons cites authoritative sources to document the levels of sound that disturb sleep, and summarizes: "At 30—40dB measurable objective sleep disturbances are seen. At 40—55dB adverse health effects are seen. Above 55dB is dangerous to public health. Experience has shown industrial wind turbines cause noise that exceeds 40 dB when in close proximity." This summary suggests that the Wind Siting Council report is recommending a sound level—45 dBA at night and 50dBA during the day—that will disturb sleep and flirts with producing adverse health effects. The problems that result from disturbed sleep are "deficits of concentration, attention and cognitive performance, reduced vigilance, malaise, depressed mood, and irritability," problems that have distinct implications for health.

While those seeking to minimize the health effects of wind turbines argue for clear causality in order to permit any attention to health concerns, there is recent work that points to the mechanisms through which disturbance from infrasound wind turbine noise takes place. Where Dr. McFadden's presentation dismisses the possibility of lower levels of infrasound being a problem, since it cannot be "heard," Alec N. Salt and Timothy E. Hullar have identified the mechanism in the inner ear that could account for the complaints resulting from proximity to working wind turbines: "In most studies of wind turbine noise, this high level, low frequency noise is dismissed on the basis that the sound is not perceptible. This fails to take into account the fact that the OHC [outer hair cells] are stimulated at levels that are not heard." (Alec N. Salt

and Timothy E. Hullar, Department of Otolaryngology, Washington University School of Medicine, "Responses of the ear to low frequency sounds, infrasound and wind turbines," June 2010) This work is now part of the peer-reviewed scientific literature and is likely to be followed by more conclusive evidence of a causal path from wind turbine noise to health effects.

Dr. Carl Phillips, an epidemiologist familiar with the science of epidemiology and with the state of research on questions of wind turbines and health effects, concludes that there is reason for investigation to ensure that siting decisions would not cause harm:

> In summary, there is substantial evidence to support the hypothesis that wind turbines have important health effects on local residents. If forced to draw a conclusion based on existing evidence alone, it would seem defensible to conclude that there is a problem. It would certainly make little sense to conclude that there is definitely no problem, and those who make this claim offer arguments that are fundamentally unscientific. But there is simply no reason to draw a conclusion based on existing evidence alone; it is quite possible to quickly gather much more useful information than we have.

(Carl V. Phillips, MPP PhD, "An Analysis of the Epidemiology and Related Evidence on the Health Effects of Wind Turbines on Local Residents," PSC REF#: 134274)

On pages 25-26 of his report, Dr. Phillips sketches out a research design that could be used to examine Wisconsin residents' experience with wind farms already permitted and operating. It is irresponsible to neglect to evaluate the effects of decisions already made before making further decisions. Chairman Callisto has attempted to reassure those concerned with the upcoming rules by saying, "I think they're going to be flexible to accommodate new studies," he said. "Rules get modified all the time. Nothing's written in stone." (quoted in "Wind turbine debate spins toward Sept. 1 deadline," The Daily Reporter, June 29, 2010.) Unfortunately, wind turbines are installed in concrete foundations weighing hundreds of tons that will not be modified for decades. In the case of Council-member Larry Wunsch, the turbine permitted under PSC rules to be placed 1,100 from his home has been operating for over five years and will likely continue to operate, though the Council Chair has acknowledged that it should not have been permitted given what we know now. We believe that it would be better to aggressively pursue knowledge of the potential for effects on human health now than to make decisions again that will be regretted later.

Health issues are not limited to humans. One Forward resident, before abandoning their home, also had problems with their alpacas birthing at not normal times of the day and in three cases had still-born or aborted births, where before the turbines were erected there were no reproductive problems. In a neighboring wind project, a man who has raised chickens all his life now has a variety of health issues in his chickens. When the chickens were moved to a relative's property outside the area of the wind farm, the chickens' health returned. In the smaller Wisconsin Public Service project near Algoma, a beef farmer who had not had health concerns with his animals prior to the wind farm had some animals get ill and others die after the turbines were erected. In the Forward project, few if any deer are seen; however residents two miles outside the project are seeing more deer than ever. The same results are reported for turkeys. The concern for wildlife was not addressed in the Wind Siting Council proceedings (such concerns were stated to be the responsibility of the Department of Natural Resources) even though "environmental" groups were part of the make up of the Council.

APPENDIX E: MINORITY REPORT

Noise

Given that noise from large wind turbines is the source of most complaints from Wisconsin residents, the approach taken by the Wind Siting Council to understanding this issue and to proposing reasonably protective noise standards was seriously flawed.

- Where Act 40 stipulated that a member of the Wind Siting Council be "a University of Wisconsin system faculty member with expertise regarding the health impacts of wind energy systems," the person appointed was not a member of the UW—System faculty but was an adjunct assistant professor whose primary work location was a state agency with an established position on the question of health impacts of wind energy systems. Further, he publicly stated that he was not an expert.
- The Wind Siting Council report is in error in stating that the Council surveyed peer-reviewed scientific research regarding the health impacts of wind energy systems. The Council was given a PowerPoint-assisted talk on the subject. The PowerPoint slides have been made available, but the presenter has publicly refused to provide the text of the report, even though this text has been used by others to make presentations elsewhere in the state.
- The summary regarding "Noise" in the Council report relies on sources that have not been provided to Council members, either in copies or links. In addition, a significant number of the sources in the Council report were not included in the presentation given to the Council. It is impossible to claim that the Council surveyed literature to which they were not given access or of which they had no knowledge.
- The oral report provided to the Council and the presentation included in the Council report shows the selection and use of sources to justify a pre-determined conclusion and does not reflect either an expert or objective survey of the relevant literature. In contrast, the report provided on the docket by Carl V Phillips, "An Analysis of the Epidemiology and Related Evidence on the Health Effects of Wind Turbines on Local Residents," (PSC REF#: 134274) provides a discussion of the issues by an expert and experienced analyst. Phillips details the flaws and limitations of industry-sponsored reports that minimize the effects of noise and proposes timely and efficient approaches to studying the effects of wind turbine noise on the Wisconsin residents already exposed. Neither the Phillips report nor any other assessment of the effects of noise from wind turbines on proximate populations has been considered in Council meetings. After the PowerPoint presentation, the issue was declared closed.
- Selection and use of sources to support a pre-determined point is illustrated by the casual setting aside of recommendations from such organizations as the World Health Organization, Vestas, the New Zealand Wind Energy Association, The National Research Council of the National Academies, and the Minnesota Department of Health (Environmental Health Division) while basing the recommendation for sound levels on studies done in Europe with smaller turbines and greater setbacks than are presently permitted in Wisconsin.
- The majority on the Council that voted for the recommended standard cannot explain the meaning of the noise standard they have voted for. This can be seen in the following two-minute video from a Council meeting: http://www.youtube.com/watch?v=29RmKZ8raT0 This discussion took place July 15, 2010 after the decisive vote was taken on the noise standard. In an earlier written "straw" ballot, five members of the Council had voted for a

standard to allow 25 dBA over the ambient or background sound. (This was not one of the choices on the ballot, "25 dBA" had to be written in under "Other.") In the July 15 meeting, Council members were asked how much louder a 25 dBA difference was. Initially, no one on the Council could say. Finally, Dr. McFadden volunteered 500 times louder, probably meaning 500 percent or five times louder. Because of the logarithmic nature of the decibel scale, the difference is closer to six times louder. What is remarkable is that none of those who had just voted for a standard they did not understand sought to clarify or reconsider what they had just decided. This is an unfortunate demonstration of the quality of decision making on which recommendations in the Council report have been based.

- Since the Council approach to the examination of this central issue fails to meet the literal requirements of Act 40, the recommendations of the Council regarding a noise standard should be set aside, and a process that matches what was required in the Act (a survey of the literature by the Council guided by an independent and qualified researcher) should be initiated.

James P. Cowan, INCE BD. Cert. presented "Wind Turbine Generator Noise Issues" to the Council on June 2, 2010. (http://psc.wi.gov/apps 35/ERF_search/content/SearchResult.aspx Noise Presentation Cowan 06-02-10) Mr. Cowan said that in his experience a 2 megawatt 100-meter wind turbine generator would produce 45 dBA at a 2,000 foot setback and that in central New York state, 2,000 feet was a typical setback. He added that at a 1,000 foot setback the sound would be approximately 6 dBA louder, or about 51 dBA.

Setbacks, other than for safety, were not recommended in the Council report because Council members were agreed that setbacks are a crude device for addressing the problems of noise and shadow flicker. Nevertheless, distance is the only sure mitigation for these problems. In lieu of better information or the kind of study recommended below, we would recommend a 2,640-foot setback from homes with a sound level standard set to 5 decibels above ambient sound pressure to wind farm residents. This is a modest set back compared to the call of doctors, scientists, physicists and sound engineers from around the world for setbacks of 1.2 miles and more.

Shadow Flicker

We do not believe the Council has sufficiently addressed the issue of shadow flicker. We believe that a non-participating property owner should not have to deal with the annoyance of *any* amount of shadow flicker. Non-participating property owners should have the right to freely enjoy their property without shadow flicker annoyance.

A property owner has an interest in the private use and enjoyment of his or her land. What a neighboring property owner does on his or her own property needs to stay there, and should not have spillover effects on other properties. Shadow flicker is an annoyance that can affect the use and enjoyment of a non-participating landowner's property. This annoyance should not be taken lightly. Council member Larry Wunsch who lives in a wind farm is affected by shadow flicker on his property at various times of the year. He has stated that this effect in his home is like someone turning the lights on and off inside the house at a rate of 80 times a minute and lasting for an average of 50 minutes daily on non-cloudy days for six weeks in the spring and six weeks in the fall. Shadow flicker affects the total property for considerably longer periods.

APPENDIX E: MINORITY REPORT

Shadow flicker can be predicted at the time a wind turbine's placement is being considered, and shadow flicker can be prevented from falling on a neighbor's land or buildings through proper siting and setbacks. Therefore, such interference should be avoided unless a waiver is granted by a landowner. Further, we believe that property owners have a right to enjoy the entire property surrounding their residence; we recommend at a minimum that site planning should identify locations for turbines that do not result in shadow flicker at or around gardens, barns, and other areas of a property used on a regular basis.

Council-member Larry Wunsch is the only Council member that lives with shadow flicker. Mr. Wunsch has testified with and provided other members of the Council a DVD of how shadow flicker can take away the enjoyment of a person's land. Our recommendation is to eliminate the hours of exposure that is recommended in the Council report and instead have zero tolerance for shadow flicker on a non-participating property owner's land.

Property Value

The Council was clearly divided on the question of whether locating wind turbines next to a residential property would decrease that property's value. The Council heard testimony and reviewed studies that made the case for loss of property values. It was very apparent to the minority of the Council (The minority included a landowner living adjacent to a wind turbine who is trying to sell his property and two realtors.) that the majority's opinion varies greatly from the minority's opinion and seeks a much different outcome. In the minority's opinion, the evidence showing close proximity to wind turbines to be undesirable to buyers and negative with respect to one's property value is clear and convincing.

The main argument that was used to claim there is no effect of proximity of wind turbines to property values is that any loss of property values is directly and mainly related to the loss of value because of current economic conditions. The Council majority, most of whom have a vested interest in the development of wind energy, has relied heavily on what is known as the "Berkeley Study" as their main source of support that no value loss occurs due to wind turbines. (The "Berkeley Study" citation is: B. Hoen Wiser, R., Cappers, P., Thayer, M., and Sethi, G. (2009) "The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi-Site Hedonic Analysis," Ernest Orlando Lawrence Berkeley National Laboratory. It was funded by the Office of Energy Efficiency and Renewable Energy Wind & Hydropower Technologies Program of the U.S. Department of Energy under Contract No. DE-AC02-05CH1123.)

However, the Berkeley Study has not held up to the scrutiny of other investigators. Michael McCann of McCann Appraisal LLC in Illinois conducted a very thorough review and provided a written analysis in response to the Berkeley Study: "The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi-Site Hedonic Analysis" dated Dec 14, 2009 thoroughly details the flaws within the Berkeley Study.

Albert R. Wilson, a specialist in environmental financial risk management and impaired value analysis, concluded that the Berkeley Study does not meet professional standards ("Wind Farms, Residential Property Values, and Rubber Rulers," can be found at http://www.masterresource.org/2010/02/is-doelawrence-berkeley-labs-wind-power-impacts-study-junk-science/#more-7526):

APPENDIX E: MINORITY REPORT

While I have other issues with the Report (and again reiterate that I have no opinion on the influence of wind farms on residential sales prices), the concerns I have addressed here lead to the conclusion that the Report should not be given serious consideration for any policy purpose. The underlying analytical methods cannot be shown to be reliable or accurate.

Kevin F. Forbes, Ph.D (Associate Professor, Catholic University of America, "Reflections on the Integration of Wind Energy into the Power Grid") also demonstrated why we cannot rely on the study's conclusions (document provided to the Commission, pages 6 & 7). The sample used in the study was incapable of finding any effects of wind turbine proximity to property values, and therefore concluding that there are no effects is the scientific equivalent of a fisherman coming up empty and claiming there were no fish in the lake.

The Council minority would recommend that the proper method for arriving at a reasonable "value factor" would use credentialed professionals within the appraisal industry, rather than rely on speculations on the effects of the economy or dependence on such a deeply flawed study.

The Council minority found credible the direct testimony presented by Mr. Kurt Kielisch, ASA, IFAS, SR/WA, R/W-AC President and Senior Appraiser of the Appraisal One Group. His testimony was directly relevant to our local area and State. Appraisal One Group is an appraisal firm specializing in forensic appraisal, eminent domain, stigmatized properties, and valuation research. His presentation (based on "Wind Turbine Impact Study," Appraisal Group One, 9/9/2009) provided insightful and well-documented information on the impact on property values that wind farms and wind turbines have had locally.

His organization's study and report consisted of a literature review, a survey of real estate professionals, and comparable property appraisals in the area of three of Wisconsin's currently operating wind farms consisting of 88, 86, and 41 wind turbines. He informed the Council that value of any property was based on perceptions of a buyer. His findings have demonstrated that local buyer's perceptions of proximity to wind turbines have been found to be negative, resulting in an average of 30% decrease in the areas studied.

Mr. McCann produced an 82-page report, "Wind Turbine Setbacks," dated June 8, 2010, where he gives his professional opinion regarding wind turbine setbacks and how they affect property values. He provides opinions and recommendations on how to minimize these concerns correspond very closely with those in the report provided to the Council by The Appraisal One Group, dated 9/9/2009.

Some on the Council stated, if there were a negative effect on property values, the shared revenue provided to local jurisdictions would result in a reduction of property taxes and make up for any effects on property values. Andrew Reschovsky's analysis of how this has worked in Wisconsin is summarized as ("An Analysis of Shared Revenue Utility Aid," PSC REF#:134042):

> In Wisconsin, utilities are generally exempt from local property taxation. However, county and municipal governments are compensated for their loss of property tax revenue through a state-financed grant program known as shared revenue utility aid. This paper describes the utility aid program and explains why revenue from utility aid will most likely be used to increase spending on municipal or countywide public

> services or to reduce municipal or county property tax mill rates. The paper concludes that these benefits of utility aid accrue to all property owners within the recipient jurisdictions and that they would not provide disproportionally larger benefits to landowners who are within close proximity of a wind turbine farm.

So we can't rely on shared revenue to address the property value problem

Strong evidence from areas that have had wind farms sited and operating much longer than we have experienced here in Wisconsin allows us to predict what will happen in this state. The evidence is far too convincing to allow us to dismiss the reality that wind farms do greatly negatively impact property values and that this effect can no longer be ignored or minimized.

Council member Andy Hesselbach of WE Energies commented that it is the preference of wind energy developers to site wind turbines closest to property lines, as it provides the developer the largest area to maximize the number of wind turbines and minimize development costs. This preference was confirmed by Council-member Michael Vickerman, of RENEW Wisconsin. Encroaching on a non-participating neighboring property without a negotiated easement is a common cause of conflict, results in a loss of property value, and has been argued to be a "taking" of personal property rights. ("Takings: Balancing Public Interest and Private Property Rights, *Wisconsin Briefs* from the Legislative Reference Bureau, Brief 98-2 April 1998)

Given that locating a wind farm adjacent to existing developed properties has been shown to negatively affect property values, providing an equitable Property Value Protection plan in the rules recommendations will help protect the interests of all parties involved.

Summary

Wind siting rules to adhere to the intentions of Act 40 need to be more restrictive than the ones proposed in the majority report in order to protect the health and safety of non-participating neighbors. The value of their property needs to have protection, and the quality of life rural residents intended to enjoy needs to be protected rather than taken from them.

The minority recommends three areas for study that could greatly increase understanding and reduce the contention that is likely to follow from following the recommendations of the Council report:

Health

Those seeking to minimize or deny the health impacts of wind energy systems do not deny that the operation of wind turbines has disturbed and will disturb the sleep of those living nearby. They also cannot deny the well-understood consequences of inadequate sleep. What they attempt is to have us ignore is the possibility that proximity to wind turbines is known to *directly* cause the symptoms that wind-farm neighbors experience. This narrow space on which they have based their argument is diminishing. In addition to the widespread reports of health effects and the phenomenon of neighbors abandoning their homes, there is an increasing amount of the kind of peer-reviewed scientific literature that wind farm proponents have been calling for that is documenting the symptoms and identifying the mechanisms by which wind farm noise can be found to cause them.

APPENDIX E: MINORITY REPORT

Wisconsin has a large number of residents living close enough to wind turbines already operating in the state. Carl Phillips ("An Analysis of the Epidemiology and Related Evidence on the Health Effects of Wind Turbines on Local Residents," PSC REF#: 134274) has provided a protocol by which a timely and affordable investigation could be conducted to learn about the health impacts that are occurring in this state. It would seem to be responsible to conduct such a study before permitting additional turbines. We would recommend a delay in the permitting of further wind development in Wisconsin until epidemiological studies can be conducted and evaluated.

Safety Setbacks

The Wind Siting Council's considerations of safety setbacks from a wind turbine were inadequate given the potential for harm. The only distances discussed were 1.1 the height of the turbine and 1 time the height of the turbine. The Council was not clear on the source for the 1.1 standard, though it seemed to be a standard used for cell towers. Wind turbines differ from cell towers in that there is a large weight at the top (the nacelle and blades) and in that there are large moving parts. A council member whose utility operates a wind farm reported that there have been cases of wind turbines falling over. Even though there was a request for staff to provide information from authoritative sources for the consideration of setback distance, the Chair said that it would not be necessary. The discussion became more bizarre when a Council member proposed landowners being able to ignore a safety setback, claimed that a safety setback was unnecessary, and said that it should be renamed as a "courtesy setback." In short, the recommendation from the Wind Siting Council cannot be relied upon, and an engineering study to establish safety setbacks from wind turbines is required.

Property Values

Since there is much contention about the effects of wind turbines and property values, and since the Appraisal One study might be dismissed because of its sponsorship, it might be productive for the Public Service Commission to obtain its own study of the issue. The two realtors on the Council would strongly recommend that the issue of property rights and property value effects need to be addressed in order to ensure that wind farm developers and operators are not benefitting from imposing economic hardship on their neighbors.

Wind industry advocates urge the use of science in developing policy for the regulation of wind energy systems. We agree that the discipline of science in the making of observations and reaching conclusions is indispensible to reaching sensible and long-lasting decisions. We also would promote direct observation of realities. When people are abandoning their homes, when they find it difficult or impossible to sell their homes, when symptoms experienced in the vicinity of wind turbines do not occur in other environments, it is not useful to dismiss such reports as inaccurate or hysterical. We would recommend that a body that permits wind turbine installations, whether local jurisdictions or the Wisconsin Public Service Commission, has a responsibility to inform themselves of the consequences of their permitting decisions.

By the same token, we have attempted to be as accurate as possible in our description of the working of the Wind Siting Council, of the literature we have cited, and of the experiences Wisconsin citizens are having living among wind turbines. If we have been in error, we would

desire to have the record corrected, so that we can proceed with a more accurate grasp of the situation.

Finally, we believe that all members of the Wind Siting Council have an interest in increased use of renewable sources of energy in Wisconsin. We in this minority are concerned that the recommendations in the Council report will not address the problems that led to the Council's creation. The standards recommended will, we believe, lead to continuing and increased dissention between proponents of wind development and local governments, and among citizens. We would prefer rules for the siting of wind energy systems that will reduce such conflict because we think that siting turbines in ways that people can live with will provide a sustainable source of energy for Wisconsin.

Respectfully submitted,

George Krause, realtor (Council member)

Tom Meyer, realtor (Council member)

Larry Wunsch, landowner living in the vicinity of a wind energy system (Council member)

Doug Zweizig, towns representative (Council member)


FORWARD
E PLURIBUS UNUM

C-Rule 10-057?

Date?

STATE OF MAINE
BOARD OF ENVIRONMENTAL PROTECTION

In Re:

RECORD HILL WIND, LLC	)	
Roxbury, Oxford County	)	**AFFIDAVIT OF**
RECORD HILL WIND PROJECT	)	**MICHAEL A. NISSENBAUM, M.D.**
L-24441-24-A-N (approval	)	
L-24441-TF-B-N (approval)	)	

I, Michael A. Nissenbaum, M.D., being first duly sworn, do depose and say as follows:

1. My name is Michael A. Nissenbaum, M.D. I am a graduate of University of Toronto Medical School with post graduate training at McGill University and the University of California. I am a specialist in diagnostic imaging, whose training and work involves developing and utilizing an understanding of the effects of energy deposition, including sound, on human tissues. I am a former Associate Director of MRI at a major Harvard hospital, a former faculty member (junior) at Harvard University, and a published author. A copy of my CV is attached to this Affidavit as *Exhibit A.*

2. I give this Affidavit in support of citizens of the Roxbury, Maine area who are requesting the Board of Environmental Protection ("BEP") to grant a hearing on the health effects of the proposed Record Hill Wind Project.

3. I developed an interest in the health effects of wind turbine projects after becoming aware of and investigating the wide spread and serious health effects suffered by most of the residents of Mars Hill, Maine who live in proximity to a linear arrangement of wind turbines comprising a ridgeline wind Industrial Wind Project. I am preparing a formal study, which includes a control group, on the subject for publication in a peer reviewed medical journal. The draft will be sent to the New England Journal of Medicine for consideration for publication.

I attach a slide show on the preliminary findings of my research project as *Exhibit B* to this Affidavit.

4. There are some differences in the Mars Hill Wind Project now operating and the proposed Record Hill Wind Project. However, there are also some similarities regarding the DEP assessments and permitting process applied which are generally acknowledged to have failed in Mars Hill, and yet were applied once again at Record Hill. It is my opinion that the BEP should hold a public hearing to examine the potential health effects of the Record Hill Wind Project given the potential seriousness of the health issues, and to ensure that an appropriately corrected modeling process (compared to the flawed model that was in fact used) is implemented to best predict the sound emissions that can be expected from the Record Hill Wind Project.

5. The Final Order in the Record Hill application states at page 10 that "Enrad stated that infrasound has been widely accepted to be of no concern below the common human perception threshold of tonal sounds." This statement is in error. **Infrasound has not been widely accepted to be of no concern other than by non-physicians doing work contracted by members of the Wind Industry, and some of the key non-physicians utilized by the Wind Industry have issued self conflicting and contradictory opinions on the issue. There has been no medical refutation of the potential negative health effects of infrasound emmited by Industrial Wind Turbines and the subject is at the least an open medical issue of concern warranting immediate investigation given the haste with which Industrial Wind Projects are being planned and established. There is additionally at this point a small body of unrefuted medical research indicating that there may be problems associated with infrasound. Regardless, there are clear issues relating to audible low frequency noise of a persistent, pulsatile nature such as created by Industrial Wind Turbines.**

6. The Final Order in Record Hill at pg. 10 also states that "MCDC found no evidence in peer- reviewed medical and health effects from noise generated by wind turbines other than occasional reports of annoyances." **While the word 'annoyance' has been used in European studies relating to this turbine noise, the term has been misinterpreted by the Wind Industry and the Maine CDC to mean an inconsequential disturbance, whereas the authors , not being medical doctors, and not being native English speakers, did not describe the health significance or severity of the 'annoyance' in medical terms. A review of the Mars Hill and Ontario findings, however, indicates that this 'annoyance' is one of the root causes of the sleep disturbances and secondary negative health effects suffered by the residents of Mars Hill, Maine.**

7. Furthermore, and more significantly, the Maine CDC did not investigate the cluster of health complaints in Mars Hill for potential significance. Given that Mars Hill potentially represents a new negative health phenomenon resulting from the interaction of a ridge line source of Industrial Wind Turbines sited too close to human dwellings after faulty pre installation sound modeling, this represents a failure of the Maine CDC to comply with its mandate to investigate newly arising health issues to better understand them and propose solutions for mitigation and future prevention where required. **As such, any statements emanating from the Maine CDC on this subject must be viewed as being based on incomplete information, at this point in time.**

8. **Ex-Governor Angus King, a principal in the Record Hill Wind Project, has publicly admitted to mistakes made in Mars Hill. To the extent that these mistakes relate to faulty pre installation sound modeling, he should be expected to agree that the same modeling mistakes should not be repeated in Record Hill.**

9. Credible evidence of negative health effects from Industrial Wind Projects has been collected in Ontario, Canada by Robert McMurtry, M.D. My own preliminary but significant findings from Mars Hill, Maine and a draft of a potential landmark book, "Wind Turbine Syndrome" by Nina Pierpont, M.D.., and others, are also new sources of concern. Dr. Pierpont is an accomplished and well respected physician who is making significant contributions to the body of knowledge on the health impacts of wind turbines. Her basic premises have been well received by some of the foremost experts in the field of Otorhinolaryngology and Otology. I furthermore agree with her statements and recommendations at pages 11-12 of an excerpt of her Draft Report attached hereto as *Exhibit C.*

10. On Saturday, September 12, 2009, the Maine Medical Association passed a resolution, attached hereto as *Exhibit D,* expressing enough concern about the potential health effects of wind projects to urge caution and appropriate sensitivity in siting and permitting, as well as further studies on the subject.

11. This resolution was passed over the prior objections (to a similar resolution in an MMA subcommittee) of the Director of the Maine CDC. The Maine CDC Director's refusal to recognize even potential negative health effects of wind power projects, and her public statements urging the rapid establishment of Industrial Wind Projects in Maine seem to be at odds with the caution expressed by the wider medical community, as indicated by the attached Maine Medical Association resolution, and, as noted above, appears based upon erroneously interpreted and incomplete information.

12. Pending the use of more appropriately designed modeling studies, and the establishment of more appropriate regulations, the DEP and LURC should exercise more caution and deliberation prior to permitting additional IndustrialWind Projects, recognizing that

there are still currently unknowns. The physical scale of the Industrial Wind Turbines used today is relatively new and we are only beginning to learn, as physicians, about the presence or absence of negative health effects that may result from poor siting decisions. In so doing, they will be better discharging their responsibility to protect the health and safety of Maine citizens.

13. I urge BEP to hold a public hearing on the appeal of the DEP Final Order for Record Hill on health effects of the approved Industrial Wind Project and, if that hearing is held, I will give testimony summarized in this Affidavit.

Dated: September 17, 2009

Michael A. Nissenbaum, M.D.

STATE OF MAINE
Aroostook, ss.

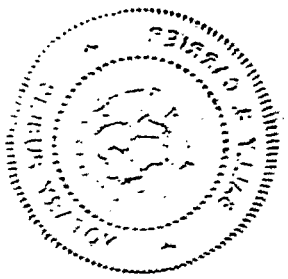
September 17, 2009

Personally appeared the above-named Michael Nissenbaum, M.D., and being sworn, made oath that the foregoing statements by him described are upon his own knowledge, information and belief and that, so far as upon information and belief, that he believes this information to be true.

Before me,

Notary Public/Attorney-at-Law
My commission expires:

SALLY CARRIER
Notary Public, Maine
My Commission Expires
February 1, 2014




FORWARD
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C-Rule 10057?

Date?

My name is Marilyn Nies. My husband and I signed a contract with a wind developer 3 ½ years ago. Since then we attended an informational meeting on wind power. We were shocked to hear about stray voltage. It never occurred to us when we signed the contract that our six year old daughter has three separate heart conditions. One of them is an electrical impulse disorder. What could happen to her if the electricity were to ground out in our pond and she is in there. I know it sounds farfetched but when we were at a Brown County board meeting Dr. Jevon Mc Fadden said "We know some individuals are more susceptible than others, for instance people with heart conditions".

No scientific studies have been done to prove or disprove whether living this close to turbines is safe. We are going to have to live with this for 35-40 years. What is it going to hurt to put a halt on things for a year or two and get the studies done? That is fraction of the time we have to live with this. The wind companies keep saying is there is no evidence of harm. Of course not, nobody has looked! The PSC siting panel says "go to the doctor, get a base line". Why do we have to be guinea pigs! There are tubines in other locations where the studies can be done.

We were lied to by the wind company. We were told the turbines would be 1000' - 1300' minimum from our house. Now all the sudden the PSC siting committee comes up with the recommendation of 1.1 times the turbine height for us fools that signed our rights away. ~~That's only a 10% safety factor, this is ridiculous and~~ OK ~~inadequate that is only 44' from our house.~~ If there is a turbine failure we deserve the same safety setbacks as anyone else. All SAFETY SETBACKS FOR FAILURE MUST BE FROM PROPERTY LINES TO PROTECT OUR PROPERTY RIGHTS AS TAXPAYERS BUT MOST OF ALL TO PROTECT OUR CHILDREN WHILE THEY ARE PLAYING OUTSIDE. We want protection while outdoors, not just in our homes. If there is a turbine failure everyone deserves to be safe whether or not they are signed up. What about people visiting our house? Just because a landowner signs up doesn't mean if the turbine fails pieces won't fall as far.....

I don't know about you, but we spend ALOT OF TIME OUTSIDE, both summer and winter. People who live in the country tend to do that. Gardening, playing, swimming, hunting, cutting wood, etc. enjoying and working on our property. We have a constitutional right to quiet use and enjoyment of our land.

Safety is safety and my families health and safety should not be compromised for the financial profit of a wind developer, the state or the local government..... I do not want my family to be the next collateral damage victim of the irresponsibly un-safe siting of wind turbines allowed by the PSC.

To top this all off the World Health Organization recommends 1/2 mile or 2640' set back. How come the PSC siting committee knows more than the WHO? (http://www.healthywindwisconsin.com/Health%20Impact%20and%20Setback%20G....pdf)

To make matters worse we have been avidly pursuing with the wind company to get out of our contract. We have sent the money back and now void all checks we receive. Our daughter's heart conditions and being lied to are our main reason for wanting out. They don't care, they will not let us out of our contract. Then they had the nerve to send us a letter saying no you can't get out of your contract and "Remember your confidentiality clause!"

The Brown County, Manitowac, and Kewaunee boards have all come out and said these do not belong here (front page of the Press Gazette newspaper). We have a sensitive karst rock topography here along the ledge. Everywhere they break through the karst rock the manure is going to follow the path of least resistance and enter our drinking water. NOBODY is listening! If we truly need that much electricity put up another nuclear plant. They work and they are efficient.

Don't want $

M. Nies

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