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May 26, 2011

Bob Phillips, Planning Board Chair
Town of Allegany
52 West Main St.
Allegany, NY 14706

Re: Everpower project proposal; supplement to comments on the FEIS

Dear Mr. Phillips:

Thank you for extending the opportunity to comment on this project. This letter supplements comments on the FEIS on behalf of Concerned Citizens of Cattaraugus County submitted to you on May 11.

Specifically, I am augmenting my May 11 comments on noise impacts by submitting supporting documentation with brief summaries of each document, and adding new comments on the topics of property value impacts, environmental benefits, economic impacts, and a comparison between the Allegany review and a similar review of a wind project by a central New York town.

A list of supporting documents submitted with this letter is provided on the last page. Copies of each of these documents is also posted on my web site, <www.garyabraham.com>, under "Documents."

I am also attaching technical comments on the FEIS by CCCC's acoustic consultant Richard James.

Noise Impacts

I am submitting copies of the 2009 Minnesota Health Department review of information on wind turbine noise, and the 2006 van den Berg study on wind turbine noise, both discussed in my May 11 letter. The van den Berg study was prompted by a question the Planning Board should ask: why are there commonly several complaints about noise once a wind farm begins operations, when the noise assessment provided by the project sponsor predicted noise levels would be so close to background that turbines should be inaudible?

Van den Berg's answer, widely accepted by independent acoustic experts, is that stable atmospheric conditions occur frequently at ground level during times when wind speeds in the elevated atmosphere exceed three meters per second (or 6.7 mph), the cut-in speed for wind turbines. By contrast, the Everpower FEIS models a condition where ground level wind speed is "normalized" or calculated (not measured) based on a wind speed of 7 m/s (or

15.7 mph) in the elevated atmosphere, or 80 meters (262 ft.) in height, the height of a wind turbine tower where the blade hub is located.

When stable (calm) ground-level atmosphere exists, most commonly at night, normalizing wind speeds based on elevated wind speeds does not predict noise levels emitted by wind turbines because the assumption that strong winds move both lower and elevated air masses breaks down. Basic atmospheric physics establishes that “strong wind . . . can occur in day as well as night time, though not very often in a temperate climate and over land.” (Van den Berg, at p. 2.)

Van den Berg's study is actually a compilation and updating of several studies he conducted at a number of different wind farms before 2006 to explain why complaints occurred where pre-operational studies had concluded there should be none. Mr. Hessler complained that the Rhede, Germany wind farm studied by van den Berg is near the ocean on flat terrain; it is actually over 100 miles from the ocean, and the wind shear problem identified by van den Berg is more common for sheltered valley locations like Allegany's than for flat terrain, not less. *See* FEIS, ch. 4.8, at p. 19.

Van den Berg found that wind turbine noise is actually greater at long distances than it is close to the turbines. When ground level wind speeds are about 4 meters per second, high winds aloft enable turbines to operate at full power, resulting in sound levels up to 15 dBA higher than modeled at distances of 400 meters, or 1,312 feet from the turbines. *See* p. 18. Sound levels decline with additional distance. “At distances greater than 50 feet from a sound source, every doubling of the distance produces a 6 dB reduction in the sound,” according to DEC's guidance document, at page 8. Therefore, at 2,624 feet from turbines, under wind shear conditions modeling can be off by 9 dBA.

In addition, the impulsive or thumping character of the noise is most pronounced at long distances because the receptor is facing the turbine at a near perpendicular angle, and so hears the rhythmic turbulence of the blade passing the tower. Closer to the turbine, at about 100 meters, most turbine noise is radiated downward from the blade and the perpendicular direction of the turbulence with the tower is heard less. *See* van den Berg, p. 19. The turbulence of the blade passing the tower generates more low frequency sound, which travels farther.

Mr. Hessler's assertion that the condition where it is “nearly calm and therefore quiet at ground level (i.e. stable atmospheric conditions) . . . is more of an extreme case than a commonplace situation” is not supported by any research, and none is cited by Mr. Hessler. *See* FEIS, Appendix K, p. 4. This assertion was made in criticism of CCCC's acoustic consultant, who urged that van den Berg's findings be made part of the “worst case” condition the FEIS should assess. This type of assessment has been avoided in the FEIS.

Mr. Hessler also rejects Dr. Paul Schomer's criticisms of his “normalization” of ground level wind speeds, which elevates the estimated background sound level available to “mask”

wind turbine noise. Hessler asserts that Schomer retracted his criticisms. *See* FEIS, Appendix K, pp. 6-7. However, the letter from Schomer to Hessler offered to show this plainly says, "This letter does not mean we now agree with all of your methods and conclusions." *Id.*, attachment. In fact, in his review of Hessler's methods and conclusions (not provided by Mr. Hessler), Dr. Schomer specifically recommended the approach developed by Kamperman and James to rectify this problem. This is the approach detailed in comments to the Planning Board in this matter by Richard James, and is based on ANSI standards as required by the Allegany local code. I have enclosed a copy of Dr. Schomer's review of Hessler's work.

Schomer's criticisms were prepared on behalf of my client in Cape Vincent, New York, Wind Ethics Power Group. However, the Cape Vincent Planning Board also hired independent acoustics consultant Cavanaugh and Tocci (CTA) who came to the same conclusions. CTA recommended that no wind masking be assumed in order to account for calm wind conditions at ground level when elevated winds are sufficient to operate wind turbines and, contrary to Hessler (and consistent with earlier comments I have submitted to you), recommended that a discount on wind turbine noise for "ground attenuation" not be used. In both Cape Vincent and Allegany Hessler applied this discount, which is prohibited by ANSI standards for noise sources elevated 30 meters or more. I have also enclosed the CTA report.

These project-specific expert reports are consistent with a 2009 review of the technical acoustic literature on wind turbine noise by the Santa Fe, New Mexico based Acoustic Ecology Institute, submitted to the board last May by Chipmonk resident Al Henderson. *See* Jim Cummings, "AEI Special Report: Wind Turbine Noise Impacts," Acoustic Ecology Institute (Santa Fe, NM) 2009, <AcousticEcology.org/srwind.html>. The AEI report finds that the wind industry view that "wind masking" will always make wind turbine noise inaudible, because wind-induced background noise will always be elevated at ground level when turbines operate, has been consistently rejected by independent acoustic experts.

The board should seriously question the wind masking theory, based on the "normalization" method relied on in the FEIS, coupled with the sound emissions provided by IEC 16400. As van den Berg notes, "In the 1998 publication IEC 16400 only the neutral logarithmic wind profile is used." (Van den Berg, p. 19.) That is, IEC 16400 does not take into account stable atmospheric conditions and instead assumes strong winds characterize both ground level and turbine hub heights. Since the IEC 16400 was published research has shown this assumption is contrary to basic atmospheric physics and specifically fails to predict wind turbine noise impacts, especially at long distances from turbines. As a result, the FEIS has substantially failed to assess a reasonable worst case scenario.

Property value impacts

Another question the board should address is whether property values will decline as a result of the visual and noise effects of the Everpower project such that erosion of the town's

property tax base over time will offset financial gains the town obtains for a limited period. The FEIS confidently answers this question in the negative, but the basis for that answer is a now discredited analysis of property value impacts of wind farms.

To counter the intuitive belief that fewer people will wish to live where 505-foot wind turbines are visible (just as they would not want to live within sight of transmission lines, for example), thus depressing the market for and value of such property, the FEIS relies on Ben Hoen et al., "The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi-Site Hedonic Analysis," sponsored by the U.S. Department of Energy's National Renewable Energy Laboratory. *See* FEIS, at 4.10-7 (citing Section 3.9.2.2.1 of the DEIS). In 2010 Albert R. Wilson, an expert in the financial impacts of environmental and other risks on business and real property values, reviewed the Hoen report and found it lacks credibility. Specifically, Wilson found that standards published by the International Association of Assessing Officers (IAAO) require a "hedonic" analysis of property devaluation achieve an explanatory power of 0.90, but the Hoen analysis explains only 0.78 of the variables that go into assessing impacts on property value, 13% less than the IAAO standard. "There is no evidence whatever that the Report employed any standards," according to Wilson (at p. 2). I have attached a copy of the Wilson review of Hoen's report.

As noted by Wilson, the Hoen report combined urban and rural markets, markets where property values were declining independently with healthy markets, and less than 10% of the property sales considered in the report had any view of turbines, which is the effect being assessed. The Hoen report failed to identify any local market, and instead uses a national market to evaluate a fundamentally local market phenomenon. Sales comparison, income and cost approaches are not considered in the Hoen report, even though these are the standard methods of real estate appraisal. Wilson concludes 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." (p. 6.)

An independent study of the effect of wind farms on a local property market in Wisconsin concluded that visual exposure to wind turbines has a significant negative effect on property values. This study by Wisconsin-based Appraisal Group One, "specializing in forensic appraisal, eminent domain, stigmatized properties and valuation research," also included a survey of opinions of area realtors and a literature review to validate the market analysis. I have enclosed a copy of the Appraisal Group One study.

Appraisal Group One's sales study concluded that a 30%-40% decrease in property values can be expected for residential parcels in the area of wind farm influence, defined as parcels within sight of turbines. The realtor survey found a negative impact of property values of 24%-43% would be expected depending on the distance from the wind turbine, up to one-half mile away. (By contrast, the Hoen study is limited to parcels two or more miles away.) The literature review found that all studies conducted on the topic, other than those conducted by wind developers or advocates, show a significant loss of property value for

those lands located near wind farms. The average decrease in value in the literature was 20%.

The board should also consider another strongly worded evaluation of the effects of wind farms on property values by an professional appraiser in Illinois. Last year Michael S. McCann evaluated cost effects, use effects, and risk (stigma) effects of environmental contamination on the value of real property resulting from proximity to industrial wind turbines in Adams County, Illinois. I have enclosed a copy of the McCann report.

McCann found that noise impacts have a measurable effect on the value of real property within two miles of a wind farm, based on paired sales analysis, environmental case studies, and multiple regression analysis. For the specific wind project under consideration in Illinois, McCann concluded that the value reduction within two miles would be \$6.5 million, although unlike the Everpower project, for that project several homes existed within the footprint of the wind farm. (See p. 16.) To mitigate this effect McCann recommended a property value guarantee plan funded by the project sponsor or, alternatively, a specialized insurance policy from a high-risk insurance carrier or insurer, noting that unwillingness to obtain such insurance would indicate that such projects are too risky to be insured. (See p. 6.)

Environmental benefits

Part of the Planning Board's SEQRA review of the Everpower project proposal requires the board to evaluate the ability of the project meet its environmental goals, in order that the board may balance the benefits of the project against other essential considerations. The FEIS states that the Everpower project will provide substantial environmental and energy benefits, including the ability to displace or avoid fossil-fuel combustion utilized in conventional power plants, and a corresponding reduction in harmful emissions including greenhouse gas.

The ability of the project to achieve these goals is unsupported by analysis of the actual electricity generation rate that can be expected from the project, as stated in the Appendix to my comments submitted to you on April 23, 2010. See FEIS, Appendix N, Comment 4, pp. 5-18. Those comments were subsequently updated and published in *New York Zoning Law & Practice Report*. A copy of the article is enclosed.

However, my April 23, 2010 letter already showed that wind farms operate at best at 20% of their designed capacity, on average, and the intermittent nature of wind energy requires substantial capacity from non-intermittent sources, including fossil fuel powered sources, to be maintain running in reserve to back up wind farms when there is no wind.

The FEIS did not respond to these comments. See FEIS, p. 4.1-1 ("Comment noted."). The FEIS therefore provides little basis for its conclusion that the project's emissions reduction and other environmental benefits will be realized.

Economic impacts

In earlier comments I noted that no more than a handful of permanent jobs would be created by this project, and construction-related jobs would be limited to an intense period of development lasting about one year. The FEIS confirms this conclusion and argues that such permanent jobs are commonly drawn from the local work force. *See* FEIS, p. 4.10-2. However, the FEIS provides no commitment that any of these few jobs will in fact be filled by area workers.

In addition, the FEIS adds nothing to the basis for its conclusion that substantial economic benefits will trickle down to the local economy from project expenditures found in the DEIS. As noted in my April 23, 2010 letter to you, the National Academy of Sciences recommended against relying on the JEDI model for estimating such benefits, urging instead that permitting agencies look to jobs that will be directly created by the project, and whether it is likely that local workers will be qualified to take such jobs. *See* FEIS, Appendix N, Comment 4, pp. 13-14. The FEIS does not respond to this comment.

The Planning Board should not rely on so speculative an analysis of socioeconomic benefits as has been provided in the FEIS. In the absence of credible evidence of significant socioeconomic benefits, the board should conclude that such benefits are small and fail to offset the adverse effects of the project.

A comparison case: Town of Italy, NY

Finally, I urge the Planning Board to consider the SEQRA findings statement issued by the Town of Italy on October 6, 2009, in support of denial of approval of a wind project under similar circumstances the board faces here. A copy of the findings statement is enclosed.

The Italy Town Board as lead agency for the review of the project placed important value on its scenic character, and acknowledged that visual and noise impacts of the project would be unavoidable. Because they were unavoidable, the board identified these impacts as a basis for disapproving the project, after finding that the benefits of the project were not adequate to offset those impacts. It is submitted that the same is true for the Everpower project.

In Italy, significant adverse impacts fell particularly on non-participating residential properties in the vicinity of the project. The project sponsor offered a post-construction noise monitoring and complaint resolution program to mitigate these impacts, but the board found that was insufficient to protect residents from serious impacts.

The Italy board was considering an incentive zoning plan that would be overlaid on an area permitted for residential development, similar to the requirement in Allegany to add an overlay zone to accommodate the Everpower project. However, in the end the board found

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that the SEQRA balancing test required the conclusion that the burdens of the project did not outweigh its benefits.

I should note that Allegany's special counsel Daniel Spitzer represented the project developer, and I represented a citizens group in opposition to the project. Mr. Spitzer took the position that the town should allow 50 dBA at non-participating residential property. Following denial of approval the project sponsor brought a lawsuit challenging the town's action. Another law firm was retained to represent the company in the litigation, the town retained me to defend its action, and the litigation has not concluded.

Conclusion

For the reasons provided in my May 11 letter and this letter, based on the attached supporting information and previous submissions inadequately addressed in the FEIS, the Planning Board should conclude that the purported benefits of the Everpower project do not justify imposing serious long-term burdens on the community, and should accordingly exercise its authority under SEQRA to deny approval for the project.

Sincerely yours,


Gary A. Abraham

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cc: Patrick Eaton, Allegany Town Supervisor (w/o encs.)

Enclosures:

1. Richard James, Comments (May 26, 2011)
2. Minnesota Health Department, *Public Health Impacts of Wind Turbines* (2009)
3. G.P. van den Berg, *The Sounds of High Winds* (2006)
4. Paul Schomer, Letter to Cape Vincent Town Supervisor (April 23, 2010)
5. Cavanaugh Tocci Assocs., Sound Report for Cape Vincent Planning Board (2010).
6. Albert R. Wilson, Review of Hoen et al. (2010)
7. Appraisal Group One, *Wind Turbine Impact Study* (2009)
8. Michael S. McCann, Wind Farm Property Impact Study (2010)
9. Gary A. Abraham, *Inconvenient Truths About Wind Energy* (2010)
10. Town of Italy, SEQRA Findings Statement (2009)