

LAW OFFICE OF GARY A. ABRAHAM

170 No. Second Street
Allegany, New York 14706
716-372-1913; fax is same (please call first)

gabraham44@eznet.net
www.garyabraham.com

April 18, 2008

VIA EMAIL TO: dspitzer@hodgsonruss.com

Daniel A. Spitzer, Esq.
Hodgson Russ, LLP
140 Pearl Street, Suite 100
Buffalo, NY 14202

**Re: Comments on proposed Noble Allegany Windpark, Application and
Draft Environmental Impact Statement (DEIS)**

Dear Mr. Spitzer:

Please accept the comments below together with enclosed attachments on behalf of Centerville's Concerned Citizens (CCC), regarding the above-referenced DEIS. CCC is an unincorporated association of Centerville residents and landowners.

Introduction

The proposed project involves the installation of 67 GE Energy model "GE 1.5sle" utility-scale wind turbines manufactured in Germany, each with rated or installed capacity of 1.5 megawatts (MW) and a design life time of 20 years, on approximately 7,453 acres. Application at 1; DEIS at R-51 and R-52. Fifty-five of these turbines would be installed in the Town of Centerville, the remainder in the Town of Rushford. Application at 1.

The proposed project is being reviewed under both the Town of Centerville Local Law No. 1 of 2006, regulating "wind energy conversion systems,"¹ and under the State Environmental Quality Review Act and its implementing regulations (SEQRA).² The local law does not preempt SEQRA. Therefore, where adverse impacts are identified, SEQRA requires avoidance or mitigation of such impacts even though project plans may comply with local regulations.³

The stated purpose of SEQRA is "to promote efforts which will *prevent or eliminate*

¹ The local law is reproduced in the DEIS, Appx. O.

² N.Y. Env'tl. Conserv. L. (ECL), Article 8; 6 NYCRR Part 617. The local law also specifically requires SEQRA review. *See* DGEIS, Appx. M, Sections 10(Q), (T); 11(I); 17(A).

³ 6 NYCRR § 617.11(d)(5).

damage to the environment and enhance human and community resources.”⁴ Under the SEQRA regulations, a DEIS “must analyze the significant adverse impacts and evaluate all reasonable alternatives.”⁵ If analyses in the DEIS are deficient, the lead agency should require a supplemental DEIS, particularly in light of changes proposed for the project not fully analyzed in the DEIS, discovery of new information provided in comments on the DEIS, or any other change in circumstances related to the project.⁶

Before approving a DEIS, the Town Board must certify that all requirements of the SEQRA regulations have been met,⁷ and certify specifically that the project as proposed “avoids or minimizes adverse environmental impacts to the maximum extent practicable.”⁸

CCC has significant objections to the DEIS, which this letter and attached supporting documentation discuss in detail. In brief, the project sponsor has failed provide sufficient information to consider whether the project’s adverse impacts can be avoided or, if they cannot, how such impacts can be minimized or mitigated, as mandated by SEQRA. Among other deficiencies, the DEIS fails to discuss all reasonable alternatives to siting wind turbines in sensitive wildlife habitat and close enough to homes to result in adverse visual and noise impacts.

A NASA study’s conclusions about noise impacts that can be expected when wind farms are sited in quiet populated communities applies equally to noise and visual impacts, particularly in areas where, as here, several wind power projects are sited or proposed for siting nearby:

Wind turbine generators . . . are producing electricity both singly and in wind power stations that encompass hundreds of machines. Many installations are in uninhabited areas far from established residences, and therefore there are no apparent environmental impacts in terms of noise. There is, however, the potential for situations in which the radiated noise can be heard by residents of adjacent neighborhoods, particularly those neighborhoods with low ambient noise levels.⁹

⁴ ECL § 8-0101 (emphases added).

⁵ 6 NYCRR § 617.9(b)(1).

⁶ 6 NYCRR § 617.9(a)(7).

⁷ 6 NYCRR § 617.11(d)(4).

⁸ 6 NYCRR § 617.11(d)(5).

⁹ H. Hubbard and K. Shepherd, “Wind Turbine Acoustics,” NASA Technical Paper 3057 (1990), cited and quoted in R.H. Bolton, Evaluation of Environmental Noise Analysis for “Noble

Under SEQRA visual and noise impacts are required to be assessed not only as discrete environmental impacts, but as significant components of a change to “existing community or neighborhood character.”¹⁰ Environmental consultants have a limited ability to know and understand the local neighborhoods and community. The Town Board is in the best position to determine whether adverse visual and noise impacts that would result from the proposed project will change the existing community or neighborhood character. However, the DEIS offers insufficient information to make this determination.

In addition, review of the Application and DEIS has been seriously hampered by the manner in which the DEIS has been provided to the public. Although copies of these materials have been provided locally, at the Town Hall, the Town Hall is open for less than two hours each week at an unspecified time Thursday afternoons. Pursuant to amendments to SEQRA in 2005,¹¹ the project sponsor posted these materials on its website, but with password encryption to block the printing, copying or quoting by cutting and pasting from the documents, and in the form of 82 separate digital files many of which lack descriptive or sequential filenames.¹² This circumvents the policy underlying the posting on the internet requirement, to promote public participation, a long established SEQRA policy.¹³ As a practical matter, the obstacles to reviewing the Application and DEIS created by the project sponsor has made it impossible to comment on the entire document, and the added effort required to understand the project and its potential impacts imposed by the sponsor’s chosen format has likely deterred people from preparing well-informed comments.

Finally, CCC does not believe that no utility-scale wind project whatsoever could be developed in Centerville. However, this project as proposed fails to avoid or mitigate the most intrusive nuisance-type effects on local residents and improperly defers meaningful assessment of

Allegany Windpark Project” (March 19, 2008) at 20, attached hereto.

¹⁰ 6 NYCRR § 617.2(l).

¹¹ ECL §§ 8-0109[4], -0109[6], -0113[2][f].

¹² The Application and DEIS are available at <<http://www.noblepower.com/our-projects/allegany/index.html>>.

¹³ *Cf.* 6 NYCRR §§ 617.2(n) (“An EIS provides a means for agencies, project sponsors and the public to systematically consider significant adverse environmental impacts, alternatives and mitigation. “), 617.3(d) (“The lead agency will make every reasonable effort to involve project sponsors, other agencies and the public in the SEQR process.”), 617.14(b) (“Individual agency procedures to implement SEQR must be no less protective of environmental values, public participation and agency and judicial review than the procedures contained in [the SEQRA regulations].”).

the destructive potential for natural resources in the community. If the project is not abandoned in the face of these deficiencies, it should be reconfigured.

CCC expects that as the project sponsor provides more information to address deficiencies identified in public comments, additional issues will emerge. We look forward to an opportunity to comment further at that time.

1. The DEIS lacks a required analysis of consistency with the state energy plan.

The SEQRA regulations require a DEIS for an electric generating facility to “include a demonstration that the facility will satisfy electric generating capacity needs or other electric systems needs in a manner reasonably consistent with the most recent state energy plan.”¹⁴

The DEIS assumes a wind power plant project is consistent with the state energy plan, (*cf.* DEIS at 1-32), but makes no attempt to demonstrate how the project advances the plan or is otherwise consistent with the state plan. The DEIS should therefore be supplemented with the required demonstration.

Under the regulation, (*see supra*, note 14), any supplement responsive to this comment will need to address the goals adopted by the most recent state energy plan. The state’s most recent energy plan is the 2002 New York State Energy Plan (the “Plan”).¹⁵ This Plan adopts five goals:

1. Supporting the continued safe, secure, and reliable operation of the State’s energy and transportation system infrastructures;
2. Stimulating sustainable economic growth, technological innovation, and job growth in the State’s energy and transportation sectors through competitive market development and government support;
3. Increasing energy diversity in all sectors of the State’s economy through greater use of energy efficiency technologies and alternative energy resources, including renewable-based energy;
4. Promoting and achieving a cleaner and healthier environment; and
5. Ensuring fairness, equity, and consumer protections in an increasingly

¹⁴ 6 NYCRR § 617.9(b)(5)(iii)(e).

¹⁵ The Plan was issued by the state Energy Planning Board as “2002 State Energy Plan and Final Environmental Impact Statement,” available from NYSERDA at <http://www.nyserda.org/Energy_Information/energy_state_plan.asp>.

competitive market economy.¹⁶

Goal #3 has the clearest potential to be satisfied by the project. For example, the Plan recommends that “the State’s share of renewable energy, as a percentage of primary energy use, . . . increase from ten percent in 2000 to 15 percent by 2020.” This emphasis on “energy use” requires any supplement addressing the Plan to specify the actual electric generation rate the proposed project can make available for use. As discussed at greater length in the next numbered comment, actual generation rates from utility-scale wind power projects fall well below the expectations in the Plan. *See id.* at 3-60, Table 4 (anticipating that at “peak capacity,” “wind farms” in 2022 will generate 45% of installed capacity in winter, 19% in summer). However, current wind farm actual annual generation rates are 10%. *Infra* text at notes 20-21.

To meaningfully assess the project’s consistency with expectations in the Plan, the DEIS should discuss each of the “major constraints” on wind utilization, identified in the Plan, including:

- Land availability and land-use patterns;
- Surface topography;
- Offshore conditions;
- Infrastructure constraints;
- Environmental constraints;
- Wind turbine capacity factor;
- Wind turbine availability; and
- Grid availability.¹⁷

In addition, a supplemental discussion must clearly demonstrate the manner in which the project is consistent with the Plan as a whole, including the other four goals in the Plan.

¹⁶ *Id.* at Section 1.3.

¹⁷ Plan at 3-60.

2. The DEIS substantially overestimates need for the project and potential project benefits.

SEQRA requires a DEIS to provide a sufficient account of the project's "purpose, public need and benefits, including social and economic considerations."¹⁸ The state's adoption of a comprehensive energy policy promoting renewables in general does not justify further development of wind-generated energy if wind energy is the least efficient available renewable energy source.

Using the rated (or "installed" or "nameplate") capacity for the 67 GE 1.5 MW turbines proposed to be installed, the DEIS states that the project "will produce approximately 100.5 megawatts (MW) of power from a renewable resource." DEIS at 1. *See also* DEIS at 1-29 (the project will result in "the benefits of adding approximately 100.5 MW of clean, renewable electric energy to the power grid"). The DEIS then estimates the project's 100.5 MW rated capacity will reduce "about 4,590 tons of nitrogen oxides (NO_x), 9,631 tons of sulfur dioxide (SO₂), and 3,041,992 tons of carbon dioxide (CO₂) over 20 years by displacing fossil fuel based electric generation." DEIS, Executive Summary at 9. However, these estimates are not based on the energy that can be *actually produced* by the project.

According to the manufacturer's specifications for the wind turbines that would be used, the turbine blades "cut in," or begin to rotate, when wind speed reaches 6.7 miles per hour (mph) (3 m/s), and "cut out," or stop rotating (for safety reasons) when wind speed exceeds 55.9 mph (25 m/s). DEIS at R-51. Rated capacity assumes a sustained wind speed of between 22.8 mph and 23.9 mph (10.2-10.7 m/s). *Id.* Thus, when wind speeds are between 6.7 and 22.8 mph, actual power generation will be a fraction of the rated capacity. Winds less than 6.7 mph (or more than 55.9 mph) will generate no power. *Average* monthly wind speeds for nearby Rochester, NY, range from 7.7 mph (August) to 11.6 (January).¹⁹ Clearly, wind speeds required to achieve rated capacity will occur in the Centerville area infrequently.

A study for NYSERDA completed by GE Energy quantifies the "effective capacity" of land-based wind power plants, concluding as follows:

Capacity factors of inland wind sites in New York are on the order of 30% of their rated capacity. Their effective capacities, however, are about 10%, due to both the seasonal and daily patterns of the wind generation being largely "out of phase"

¹⁸ 6 NYCRR § 617.9(b)(5)(i).

U.S. Department of Commerce, National Climatic Data Center, "Wind – Average Wind Speed (MPH), available at <<http://lwf.ncdc.noaa.gov/oa/climate/online/ccd/avgwind.html>> (monthly average wind speeds over the last 62 years for Rochester, NY).

with the NYISO load patterns.²⁰

In other words, wind power is minimally available in the summer, when electricity is needed most, and is most available in the winter, when it is needed least. In addition, wind power is most available in the evening, when the system load is diminishing.

Utility-scale wind farms will also be out of service throughout the year as they are required to shut down to maintain system reliability.²¹

Before the Town Board can determine project need and benefits, the project sponsor should provide an accurate analysis of the effective capacity of the project to generate electricity. If the project's effective capacity will be about 10% of its rated capacity, the Town Board should consider that an insignificant contribution to the state's energy needs and weigh the project's purpose, public need and benefits accordingly.

3. The DEIS analysis of alternatives is deficient.

SEQRA requires a DEIS to provide a sufficient account of "alternatives" to the project,²² including alternative siting strategies for the project as a whole or alternative siting of wind turbines. The DEIS provides no meaningful account of possible alternatives. The Town Board therefore has no basis on which to consider alternatives and must therefore reject the DEIS as insufficient.

The DEIS states that a smaller project and the no-build alternatives were rejected because the no-build alternative "would force continued reliance in the northeast on non-renewable energy resources (*e.g.*, fossil fuels and nuclear materials)" and therefore result in "a plethora of severe direct and indirect adverse environmental impacts." DEIS at 1-28 and 1-29 (discussing such adverse impacts). The DEIS states that a smaller project, reduced by eliminating 14 turbines, would result in "the loss of up to 21 MW of generating capacity." DEIS at 1-24. However, at an effective capacity of 10% of rated capacity, reducing the proposed project by 14

²⁰ GE Energy, THE EFFECTS OF INTEGRATING WIND POWER ON TRANSMISSION SYSTEM PLANNING, RELIABILITY, AND OPERATIONS, March 4, 2005, at 7.16. NYISO is a not-for-profit corporation that manages the state's electricity grid.

²¹ *Id.* at 2.3 ("for system reliability reasons, NYISO should require a power curtailment feature on new wind farms as a mechanism to posture the power system to handle temporary local transmission limitations (*e.g.*, line out of service) or in anticipation of severe weather (*e.g.*, intentionally curtail wind generation in advance of a severe storm affecting a large portion of the state).").

²² 6 NYCRR § 617.9(b)(5)(ii).

turbines would result in a loss of only 2.1 MW. Similarly, when effective capacity is considered, the assertion in the DEIS that “a plethora” adverse impacts would result is called into serious doubt. Since, contrary to the DEIS, the loss of “social and economic benefits” related to this degree of loss of generating capacity, (*id.*), would be insignificant, the DEIS has not justified rejecting the alternatives of a smaller project or not building the project.

Importantly, no demonstration is provided that reliance on baseload power plants would be reduced, and no analysis is provided to estimate the degree to which any other reliance on non-renewable energy resources would be meaningfully reduced. In addition, the reference to needs and benefits in the “northeast” is misplaced, since this project would be connected to the New York power grid and would not be expected to contribute to the energy needs of other states in the northeast.

Before the Town Board can rely on the DEIS to determine the need for and benefits of this project, the DEIS should be supplemented with a reasoned analysis of benefits and impacts of the project for both the local community and New York State. Any such supplement should address the following specific deficiencies.

i. The DEIS fails to show why comparable benefits for New York would not result from a smaller project that avoids the most intrusive local impacts.

With effective capacity of 10% of installed capacity, the marginal benefit to New York of adding no more than 10.05 MW of power to the state electricity grid would not change substantially should the project be scaled back to avoid the most intrusive impacts to local residents. The DEIS offers no substantiation for its conclusory assertions that a smaller project would produce less “clean energy, emissions reductions, and reductions in fossil fuel use” and “fewer local economic benefits to the region and the state, without any necessary corresponding reduction in environmental impacts.” DEIS at 1-25. Moreover, noise and visual impairment are environmental impacts under SEQRA, and some of these would clearly be avoided by a smaller project.

In addition to a realistic assessment of the magnitude of statewide benefits that would be expected from the actual production of power from this project, a supplemental DEIS should address the added cost to the state grid operator, and ultimately state ratepayers to manage the on-again off-again nature of power generation from this project.

One way to make the project smaller without reducing the actual amount of clean energy, emissions reductions, and reductions in fossil fuel use that can be expected from this project is to install fewer turbines with higher capacity. If 2.5 MW rated turbines were used instead of the proposed 1.5 MW rated machines, and assuming the actual generation increase would be proportional to the 75% increase in rated capacity, 40 2.5 MW turbines can be expected to generate about the same amount of electricity as 67 1.5 MW turbines. 2.5 MW machines are currently available and are about the same height and require a comparable land footprint as the

proposed 1.5 MW machines. However, the total impacts of a 40-turbine wind power plant would be significantly less than a 67-turbine plant, and those turbines with the greatest potential for nuisance effects on Centerville residents could be eliminated from the project or set back to distances from homes that are more protective.²³

ii. The DEIS has not shown how reliance on existing power plants would be reduced.

The effective capacity of wind power also affects the need for existing energy sources, because the intermittent nature of wind power means existing power plants must remain available.

Most existing and operating power plants in New York provide steady generation of electricity around-the-clock at nearly 100% of their rated capacity. This is called **baseload capacity**, that is, a determinate amount of electric power required over a given period of time at a steady rate.²⁴

Daily demand for electricity is usually highest in the afternoon and early evening, “with about 16 hours of ‘on-peak’ time in the day and about 8 hours of ‘off-peak’ time during the night.”²⁵ As a New Jersey “blue ribbon panel” found, its unreliability makes wind power unable to respond to fluctuations, peaks or spikes in customer power demand and therefore provides no baseload capacity:

wind power alone cannot reduce the state’s dependence on fossil fuels. Nor can wind power provide “base load” power needed to meet every day energy demands. Due to these limitations, wind power cannot remedy the current energy related

²³ As noted in comments submitted under separate cover by CCC member Dennis Gaffin, a trained anthropologist, avoiding local nuisance impacts to the maximum extent practicable is not only required under SEQRA, it will avoid or reduce fracturing of the community already in evidence as those expecting lease payments from the project sponsor are pitted against those trying to preserve their peace and quiet.

²⁴ U.S. Department of Energy (DOE), Energy Information Agency (EIA), “Glossary,” (“load capacity, and “base load plant”). See also Wikipedia, “Base load power plant,” at http://en.wikipedia.org/wiki/Base_load_power_plant (visited October 5, 2007).

²⁵ EIA, THE CHANGING STRUCTURE OF THE ELECTRIC POWER INDUSTRY 2000: AN UPDATE, p. 9n.16 (October 2000), available at http://www.eia.doe.gov/cneaf/electricity/chg_stru_update/update2000.html (visited October 5, 2007).

environmental issues facing New Jersey.²⁶

Thus, even if substantial wind-generated electricity is added to the grid there will be little or no impact on the need for baseload plants. In fact, adding substantial amounts of wind-generated electricity increases the fluctuation in the grid as wind power comes on and off, and may increase the demand for responsive baseload plants. Fluctuations caused by integrating wind power into the regional electricity grid also require additional “balancing” services from the grid operator, increasing the cost of electricity.²⁷

Baseload plants may also be operated at reduced capacity when electricity from wind plants is added to the grid. If operated at reduced capacity (for example in the winter, when substantial wind-generated electricity might be added to the grid), power plants that burn fossil fuels operate less efficiently, emitting more pollution per unit of energy produced than if they were allowed to run continuously at maximum capacity. “Combined with the pollutants emitted and CO₂ released in the manufacture and maintenance of wind towers and their associated infrastructure, substituting wind power for fossil fuels does not improve air quality very much.”²⁸

No basis is offered in the DEIS for its assertion that reliance on traditional power plants will be reduced by this project. In fact, as discussed above, the available evidence shows that wind generated power is unlikely to reduce the state’s reliance on existing power plants, and may increase reliance on such plants. The DEIS should be supplemented with a reasoned basis for determining the quantity of emissions reduced by the project, which are now overestimated and not justified. Cf. DEIS, Executive Summary at 9.

²⁶ New Jersey Blue Ribbon Panel on Development of Wind Facilities in Coastal Waters, Final Report, p. 21 (April 2006), available at <<http://www.njwindpanel.org/docs/finalwindpanelreport.pdf>>. Compare the contrary view of industry advocate Alliance for Clean Energy New York, “New York State Wind Facts,” available at <http://www.aceny.org/cleantechnologies/new_york_state_wind_facts.cfm> (“20 percent of the total wind energy can be considered base load, like traditional fossil-fuel plants, and that . . . helps to improve overall utility system reliability.”).

²⁷ Department for Business, Enterprise and Regulatory Reform (UK), ENERGY WHITE PAPER: OUR ENERGY FUTURE - CREATING A LOW CARBON ECONOMY (2003) at 53.n.23, available at <<http://www.berr.gov.uk/files/file10719.pdf>>.

²⁸ H. Sterling Burnett, Ph.D., “Wind Power: Not Green but Red,” testimony presented to the American Legislative Exchange Council Task Force on Energy, the Environment, Natural Resources and Agriculture Austin, TX (May 1, 2004), available at <<http://www.ncpa.org/prs/tst/20040501hsburnett.htm>> (visited October 5, 2007).

iii. The DEIS fails to estimate the project's contribution to air pollution and waste.

The DEIS asserts the project would generate “zero emissions or waste discharge.” DEIS at 1-31. *See also id.* at 3-16 (“Collectively, the [five area wind power] projects [proposed Noble Allegany, Noble Wethersfield, Noble Bliss, Horizon Dairy Hills, Invenergy High Sheldon and the operating Wethersfield wind farm] will generate approximately 460 megawatts (MW) of electricity from a renewable resource without any fossil-fuel emissions.”). No basis is provided to support this conclusion. The DEIS appears to assume that the construction and operation of wind farms does not generate emissions or waste.

Even when operating at effective capacity the Allegany Windpark will generate air pollution and waste. Oil leaks, spills and turbine fires, however infrequent, are an expected occurrence. Maintenance will generate vehicle emissions and waste. More significantly, emissions and waste will be generated in (1) the manufacture of 67 1.5 MW wind turbines, and (2) the production of cement, truck traffic emissions and land clearing that installation of these turbines requires.

Without further information there is no basis in the DEIS to judge whether emissions and waste reductions that would result justify the project compared to other alternatives. The DEIS should therefore be supplemented with a reasoned analysis of emissions and waste reductions.

iv. The DEIS fails to identify any adverse impacts that would result from the no-build alternative or from a smaller project.

All adverse impacts identified in the DEIS inappropriately assume project is already approved and operating. For example, the DEIS considers loss of revenue to local easement holders to be an adverse impact if the project is not built. DEIS at 1-30. But a loss of revenue from the project is not an adverse impact on the current situation of the community. Adverse local impacts of the no-build alternative or a smaller project must be determined in light of the current situation, without assuming the project's operational revenue. Since only impacts related to the loss of the project are identified, the DEIS has failed to identify adverse impacts that would result from a smaller project.

v. The project's local benefits do not justify adverse impacts that would result from the project as proposed.

No electricity would be provided to the local community by the proposed project. Beneficial economic impacts would be confined to the building stage, and the DEIS fails to provide any realistic estimate for how many local contractors would be engaged during this stage. Nevertheless, following construction of the infrastructure (which involves a year or so of activity), only about three low-wage part-time jobs inspecting and maintaining wind turbines would remain.

Temporary benefits that could result during the construction phase of the project will be felt almost entirely outside Centerville:

Construction of the Project will create an increase in local economic activity, including purchases of thousands of room-nights at local motels/hotels, automotive fuel, meals, and other items. The Project will extensively utilize and support provider of local services, suppliers, and area manufacturers during construction and operation of the Project. (DEIS at 7.)

However, there no motels or hotels in Centerville, no major restaurants, and no manufacturing facilities.

Similarly, the project sponsor has offered no more than vague allusions to the job benefits that could result for Centerville:

A significant percentage of the construction workers employed during the construction period will be hired from within the local community to the extent that qualified workers are available. (DEIS at 9.)

No specific commitment to hire any Centerville residents is made, and no information has been provided to estimate how many qualified workers are available in Centerville. We are reliably informed that in other communities hosting utility-scale wind farms, the project developer has contracted with out-of-area firms for all highly qualified, high-paid work, and no local workers were hired. The project sponsor acknowledges a similar result can be anticipated here: "Personnel specially trained in specific procedures for wind turbine construction will be brought in and temporarily housed in the area during the construction phase of the Project." *Id.*

There can be little confidence that all local farmers will benefit from the project, as the DEIS implies: "Most of the landowners are farmers, and the additional income from these payments is expected to help stabilize their income and provide some relief from the cash-flow fluctuations that are inherent in the agricultural industry." DEIS at 10. It may be that most local landowners are farmers (but no basis is provided for this assertion), but it is not the case that most local farmers will be receiving payments for the project sponsor's use of their land. A glance at any of the project maps, (*e.g.*, DEIS at 1-6, Fig. 1.1-3 and Appendix G), shows that turbine locations and transmission lines are located on a fraction of the land in the project area, and the project area covers much but not all of the Town of Centerville. Without further specific information, it is unreasonable to conclude that more than a small minority of local farmers will see income from the proposed project.

The minimal local benefits anticipated pale in comparison to the long-term alteration of the visual landscape, elevated noise impacts that can realistically be expected to affect homes within one mile of the project, and degradation of area natural resources, all discussed further below. Moreover, the small fraction of landowners who will benefit from annual payments for the direct

use of their land should be weighed against the larger fraction of landowners who will suffer unwanted nuisance effects. This division of burdens and benefits among local landowners can be expected to adversely impact the character of the community. Indeed, evidence of fracturing of the community is already apparent as those for and against the project, respectively, have organized to criticize or support their community leaders. This division in the community has the potential to grow after the effects of the project are realized.

Because virtually all local benefits are temporary and are unlikely to be felt for much more than one year, the Town Board should conclude the project will result in few local benefits. Because the local benefits of this project to the community hosting the project are minimal, the Town Board should conclude local burdens outweigh local benefits.

4. Reviewing this project without considering other phases of development planned by the project sponsor is impermissible under SEQRA.

Where additional phases of project development are planned by the project sponsor, the Town Board must “clearly state” why “circumstances warrant a segmented review”:

Considering only a part or segment of an action is contrary to the intent of SEQRA. If a lead agency believes that circumstances warrant a segmented review, it must clearly state in its determination of significance, and any subsequent EIS, the supporting reasons and must demonstrate that such review is clearly no less protective of the environment. Related actions should be identified and discussed to the fullest extent possible.²⁹

The project under review includes a transmission line to the Town of Freedom in Cattaraugus County. DEIS, Appendix D at D-54. On February 26, 2007, the project sponsor applied for state Public Services Commission (PSC) approval for the Noble Farmersville Windpark in Cattaraugus County, which would also be adjacent to and interconnected with the proposed project.³⁰ However, the Town Board’s positive declaration of environmental significance does not identify the Farmersville project, (*id.* at D-83), and the Town of Farmersville was not contacted as an interested or involved agency. *Id.* at D-77-78.

²⁹ 6 NYCRR § 617.3(g)(1).

³⁰ PSC, INTERCONNECTION REQUESTS AND TRANSMISSION PROJECTS / NEW YORK CONTROL AREA, updated April 15, 2008, available at <http://www.nyiso.com/public/webdocs/services/planning/nyiso_interconnection_queue/nyiso_interconnection_queue.pdf>. See also DEIS at 3-2 (acknowledging the this project is planned). The project sponsor previously obtained all required approvals for an adjacent project, the Noble Bliss Windpark in Wyoming County, that would be interconnected to the proposed project. No review of the proposed project was conducted during the review of approvals for the Bliss Windpark.

5. The DEIS fails to consider potential impacts on all threatened or endangered species' habitat found in the project area.

If threatened or endangered species are identified in the project area, SEQRA requires consideration of potential impacts on “the habitat of such a species.”³¹

Without information on the habitats available in the vicinity of the project site for rare, threatened or endangered plant species, it will be impossible to evaluate potential project impacts to such habitats. The Town Board will therefore be unable to certify that any findings it makes comply with SEQRA’s requirement that it consider potential impacts to such habitats.

For example, the DEIS acknowledges that both U.S. Fish and Wildlife Service and the project sponsor's biology wildlife consultant observed Bald Eagle in the project site, (DEIS at 2-78 and 2-97), and at least two independent local observations of the Bald Eagle are reported in comments submitted under separate cover by Richard Rosche and Centerville resident Devi Conley. Bald Eagle are a threatened species under state regulations, (see DEIS at 2-107), and less than ten percent of the nesting pairs of Bald Eagle estimated to be thriving when the bird was adopted as the national symbol exist today.³² In addition, Golden Eagle, classified as endangered under state regulations, was observed in the project area. DEIS 2-107. However, the DEIS addresses only the impacts on these species during the construction phase of the project, not the operational phase. See *id.*

Although the Bald Eagle was recently removed from the federal lists of threatened and endangered species under the Endangered Species Act, the bird remains protected under the Bald and Golden Eagle Act, 16 U.S.C. § 668 et seq. (the “Eagle Act”), and the Migratory Bird Treaty Act (“MBT Act”). The Eagle Act prohibits actions that “disturb” the Bald Eagle, defined in new post-delisting guidance by U.S. Fish & Wildlife Service (“FWS”).³³ Under the FWS guidance, “disturb” means “to agitate” or “bother” an actual eagle, or to cause nest abandonment “by substantially interfering with normal breeding, feeding, or sheltering behavior.”³⁴ FWS has issued the National Bald Eagle Management Guidelines to advise those engaging in activities affecting lands with bald eagles of the protective measures of the Eagle Act.³⁵ FWS has stated that

³¹ 6 NYCRR § 617.7(c)(1)(ii).

³² Lawrence P. Mellinger, “Symbolic Recovery: The Bald Eagle Soars Again,” 22:4 NAT. RESOURCES & ENVT. (ABA) 54 (Spring 2008).

³³ 72 Fed.Reg. 31332 (June 5, 2007).

³⁴ *Id.*

³⁵ *Id.*

disturbance of bald eagles or their nests that results from flagrant disregard of the Guidelines face possible enforcement action under the Eagle Act. The DEIS should therefore be supplemented with information demonstrating that project operations can and will comply with these protections.

6. The project as proposed does not avoid or mitigate adverse visual impacts.

The assessment of visual impacts in the DEIS shows that, as proposed, over 100 turbines (including FAA lighting at night) from the proposed project, existing nearby wind power projects, and additional nearby proposed wind projects would be visible from the Finger Lakes Trail along Rushford Road, and 288 turbines would be seen from NYS Route 39 in the Village of Arcade. DEIS at K-201 to K-205. As comment #8 below indicates, not all planned and existing wind power projects were included in this analysis, so the number of turbines visible at these locations can be expected to be larger. Clearly the project has not been planned to avoid such significant impacts. Not only are these impacts adverse to aesthetic interests; they can be expected to have an impact on traffic accidents as a result of driver distraction.

The DEIS includes no information whatsoever to justify why significant visual impacts at locations of local importance or where adverse traffic impacts could result have not been avoided. The project should therefore provide a justification or, where none can be made, reconfigure the project to avoid these impacts.

In addition, the visual impact study in the DEIS unreasonably concludes that significant changes to the local viewshed cannot be mitigated. The DEIS states that compliance with FAA regulations requires wind turbines to be conspicuous in the daytime to the maximum extent possible. DEIS at K-13 (“Turbines should be painted either bright white, white or off-white, to provide the maximum daytime conspicuity.”). In addition, “approximately 25 of the proposed turbines will be illuminated at night for aviation safety.” *Id.* These will be strobe lights (“rapid discharge style L-864 fixtures”) and “must flash in unison.” *Id.* at K-14.

For this proposed project, it is reasonable to mitigate expected adverse visual impacts by relocating or eliminating specific locations for turbines, since “traditional treatments such as fences, earthen berms and vegetative screening cannot be applied in an effective manner to screen these major structures.” *Id.* at K-65. It would therefore be unreasonable if relocation of specific turbines were not considered where adverse visual impacts are likely, including shadow flicker. However, the DEIS asserts “there is no opportunity to relocate the windpark or any of its components to other sites in the Centerville area where it would be substantially less visible.” *Id.* at K-65. This is a fundamental flaw in the project’s visual impact study. In order to comply with its obligations under SEQRA, the Town Board should direct the project proponent to consider relocation of specific turbines to mitigate significant impacts identified in public comments.

In addition, the visual impact study failed to consider many residential properties valued for their visual setting. The DEIS acknowledges that confirming the accuracy of the viewshed as

modeled in the DEIS is not possible. *Id.* at K-20. Despite the fact that “the visibility of wind turbines will most commonly affect local residents from rural homes and during daily travel along local roads, and most open vistas of the Project typically occur in isolated locations along rural roadways,” (*id.* at K-50), the DEIS viewshed study did not include all areas where viewshed degradation, including driver distraction might occur. *Id.* at K-31. Residential areas with less than one dwelling per acre were specifically excluded from the study. *Id.* at K-32. Thus, visual impacts on many local roadways and residential properties valued for their visual setting were not considered.

Photo simulations were limited even more, to twelve “key receptors,” none of which include residences. *Id.* at K-50.

In addition, the DEIS “Shadow Flicker Study” fails to identify all locations where shadow flicker may be caused by the project. Local law No. 1 of 2006, Section 10.17(A), requires “a study on potential shadow flicker,” and requires the study to “identify locations where shadow flicker may be caused by [the project] and the expected durations of the flicker at these locations.” In addition, the study must “identify areas where shadow flicker may interfere with residences . . .” *Id.* However, by its terms, the local law does not excuse failure to identify all “locations where shadow flicker may be caused” when, as here, a project impact study identifies residences that may be subjected to shadow flicker.

Shadow flicker interferes with the enjoyment of property and the outdoors generally, not just life inside a dwelling. However, the DEIS shadow flicker study considers only impacts to people inside dwellings.

The DEIS Shadow Flicker Study did not consider the times of the year sunlight will cast shadows. However, we are reliably informed that it is possible and feasible to calculate the times and distances of shadow flicker impacts for minutes of specific calendar days and distance in feet from the shadowing sources. No such calculations are provided in the DEIS.

Instead, the Visual Impact Study was limited to photographs that recorded “sunlight settings approximating the date and time of day the base photograph was taken,” (*id.* at K-51), May 2, 2007 and August 30, 2007. *Id.* at K-50. However, sunlight casts shadows at widely differing angles throughout the year, as the study concedes. See *id.* at K-54. In addition, the study acknowledges that shadow flicker can affect homes within “approximately 2,526 feet [of] this Project.” *Id.* at K-55. However, no consideration was given to persons with special sensitivities to shadow flicker, such as those with pre-existing migraine or vertigo conditions. Instead, the study assumed all people react to shadow flicker aesthetically, and in the same way.

7. Consideration of adverse noise impacts in the DEIS is deficient.

CCC requested a technical review of the noise impact assessment included in the DEIS. A report on the results of this review, by Richard H. Bolton, together with Mr. Bolton’s resume are

attached hereto and incorporated by reference (hereafter, “Bolton Report”).

Mr. Bolton has a degree in physics and a background in engineering and environmental compliance. In addition, CCC requested a review of the DEIS noise assessment and the Bolton Report by George Kamperman, an acoustical engineer with 55 years of experience in industrial environmental noise control. Relying in part on the recent doctoral dissertation of G.P. Van den Berg,³⁶ Mr. Kamperman fully concurs with the conclusions of the Bolton Report and finds the DEIS noise assessment to be at best in error, and at worst unprofessional. Mr. Kamperman’s review and resume are attached hereto and incorporated by reference.

A summary of the most significant conclusions of Mr. Bolton’s analysis follows. As noted below, some references on which Mr. Bolton relies are attached hereto as supporting information, and a recent study of actual noise levels at the Maple Ridge Wind Farm in Lowville, New York by Clifford P. Schneider (hereafter, “Schneider Study”),³⁷ confirming some of Mr. Bolton’s conclusions is discussed and attached hereto as additional supporting information.

The Bolton Report does not analyze noise from the turbine machinery because “most noise emissions are the result of aerodynamic effects of the large rotors.” Bolton Report at 4. Accordingly, these comments are limited to the audible aerodynamic noise that can be expected from the project. *Id.*

i. NYSDEC guidance for assessing intrusive noise impacts should apply here.

The DEIS purports to comply with NYSDEC guidance for assessing noise impacts. DEIS at L-26 and L-27.³⁸ The NYSDEC guidance document was prepared to facilitate the evaluation of

³⁶ G.P. van den Berg, THE SOUND OF HIGH WINDS: THE EFFECT OF ATMOSPHERIC STABILITY ON WIND TURBINE SOUND AND MICROPHONE NOISE, DOCTORAL DISSERTATION, Groningen University, Netherlands (May 12, 2006) (hereafter, “Van den Berg Study”). A copy of this dissertation is attached hereto as further supporting documentation for the sub-points made in this comment.

³⁷ Clifford P. Schneider, “Accuracy of Model Predictions and the Effects of Atmospheric Stability on Wind Turbine Noise at the Maple Ridge Wind Power Facility, Lowville, NY - 2007” (April 10, 2008). Both the cover letter and the Schneider Study are attached hereto. Mr. Schneider is an electronics technician and retired NYSDEC fisheries biologist.

³⁸ New York State Department of Environmental Conservation (NYSDEC), ASSESSING AND MITIGATING NOISE IMPACTS (February 2, 2001), available at http://www.dec.ny.gov/docs/permits_ej_operations_pdf/noise2000.pdf.

technical noise assessments pursuant to SEQRA by NYSDEC staff.³⁹ According to the guidance, an increase in sound levels of five decibels is experienced as “intrusive,” and “[a]n increase of 6 dB(A) may cause complaints.”⁴⁰

Although Town of Centerville Local Law No. 1 of 2006 provides that a wind energy project may be permitted if the sound level at the outside wall of a residential building does not exceed 50 dBA 10 percent of the time, this standard was adopted by the Town without consulting any environmental or noise experts. *Cf.* Bolton Report at 5.⁴¹ Thus, this is the first opportunity to assess noise impacts of a wind power project in the town. Moreover, under SEQRA’s regulations this project cannot be approved by the Town Board unless it finds that adverse noise impacts, including noise impacts on residential land or public locations where noise impacts would be intrusive have been avoided or mitigated to the maximum extent practicable.⁴²

ii. The DEIS measurement of normal background sound is seriously flawed.

The NYSDEC noise guidance calls for an initial assessment of ambient or background sound levels:

³⁹ *Id.* at 1, 4.

⁴⁰ *Id.* at 15, 14.

⁴¹ Even the DEIS questions the propriety of the noise standard adopted by the Town: “It is not clear why the 50 dBA noise limit in both laws is expressed as an L10 statistical level [i.e., the sound level exceeded 10 percent of the time]. . . . the L10 captures the near maximum level occurring during the measurement, which, from a practical standpoint, usually consists of contaminating events like cars passing by or dogs barking. In almost all cases an L10 level is significantly higher than the average, or Leq, level and much higher than the L90 [i.e., the sound level exceeded 90 percent of the time], which captures the near minimum level during the measurement and excludes contaminating events.” DEIS at L-25. Under the L10 limit set by the local regulation, “a project-only sound level of 60 dBA would be permissible at a wind speed of 10.5 m/s [meters per second, or 23.5 mph].” *Id.* As discussed below, this dramatically underestimates the noise impact when, as is common, significant wind speeds occur at the wind turbine tower height (80 meters, or about 260 feet) at the same time as wind speed near the ground surface is slow.

⁴² 6 NYCRR §§ 617.2(l) (environmental impacts include noise impacts), 617.7(c)(1)(i) (a “significant” impact occurs when “a substantial adverse change in existing . . . noise levels” occurs), 617.20 (EAF, Part 1, item 20, requires determination whether “project [will] produce operating noise exceeding the local ambient noise levels”). *Cf. also* 6 NYCRR § 617.11(D)(5) (prior to approval the Town Board must certify that the project as finally configured “avoids or minimizes adverse environmental impacts to the maximum extent practicable”).

A noise can only intrude if it differs in character or SPL [sound pressure level] from the normal ambient sound. Most objective attempts to assess nuisance noise adopt the technique of comparing the noise with actual ambient sound levels or with some derived criterion.⁴³

However, out of the 24 square mile project area, normal ambient sound was determined for only seven sites, and no justification was provided for omitting other sites or for deeming these seven sites representative of all other sites within the project area. *See Bolton Report at 5.*

More importantly, the DEIS measurements of normal ambient sound were seriously flawed, primarily by including the noise made by wind across the surface of the microphone used to measure sound, a noise that would not ordinarily be heard. *Id.* at 6-13. Thus, the DEIS substantially overestimates the normal ambient sound level at the seven chosen sites. *Id. See also Schneider Study at 9 and 18.*

Rural farming communities like Centerville typically enjoy normal ambient sound levels of about 33 dBA during daytime (nighttime ambient sound levels are lower, *id.* at 17, Fig. 14), compared to urban setting where normal ambient sound levels can reach 77 dBA. Bolton Report at 16 (quoting a study by the U.S. Environmental Protection Agency). Actual measurements near the Maple Ridge Wind Farm found ambient sound levels near 30 dBA. Schneider Study at 12 and 14.

Because the DEIS significantly overestimated ambient sound levels in Centerville, it should be supplemented with accurate ambient sound level measurements taken at sites representing all types of topography found in the project area, including hollows with residents near a proposed turbine location, and residential and recreational areas that could hear the noise generated by multiple turbine locations.

iii. The noise modeling software on which the DEIS relies is inappropriate for highly elevated noise sources like utility-scale wind turbines.

The DEIS relies on international standard ISO 9613 to estimate noise impacts from this project, even though ISO 9613 advises that its use be limited to “ground-based noise sources” or noises sources no higher than 30 meters from the ground. *Id.* at 17-18 (quoting ISO 9613). The ISO 9613 standards are incorporated into the CadnaA computer model used to predict noise impacts by the project sponsor, (*id.* at 17, *see also Schneider Study at 19*), and these are the same standards “nearly all of the current wind farm projects use.”⁴⁴

⁴³ NYSDEC, ASSESSING AND MITIGATING NOISE IMPACTS at 11.

⁴⁴ Letter from Clifford P. Schneider to Steve Tomasik, Energy Projects and Management, Division of Environmental Permits, NYSDEC (April 13, 2008). This is the cover letter to the

The Schneider Study and the Bolton Report confirm the experience in Europe, where utility-scale wind power projects have been sited in populated rural areas for much longer than in the United States, namely that wind power project sponsors' predictions of insignificant noise impacts on residents are at odds with the pattern of complaints about noise after the projects begin operation. Schneider Study at 5 (citing Pedersen and Waye (2007), attached hereto).⁴⁵ Two aspects of wind turbine noise account for these complaints, amplitude modulation and near-ground atmospheric stability at times when turbine-height wind speeds are significant. *Id.* at 5-6.

Amplitude modulated noise can be simulated by tuning an AM radio between two stations, where static is heard, and then increasing the volume every 1-2 seconds. This is not pleasant. (*Id.* at 5.)

Near-ground atmospheric stability results in intrusive noise levels from wind turbines because there is little or no wind to mask wind turbine noise:

The Dutch environmental physicist, G.P. van den Berg, has published extensively on the relationship of atmospheric stability and wind turbine noise (2003, 2004, 2005 and 2006). During the day, the land is heated and the air rises and the near-ground atmosphere is considered unstable; winds that blow at ground level are even more intense at wind turbine hub-heights (e.g., 80m). At evening, the land begins to cool and vertical air movements disappear; wind can be calm near ground, but continue to blow strongly at hub-height. This is considered a stable atmosphere. (*Id.* at 6.)

Neither of these phenomena are considered in the computer model on which the DEIS is based, according to the Bolton Report.

What the Schneider Study identifies as near-ground stable atmosphere is also known as "wind shear, the progressive increase in wind speed above ground and which occurs frequently." Bolton Report at 18-20. Alternative standards for estimating highly elevated noise sources subject to wind shear result in estimates between 6 and 13 decibels higher than ISO 9613. *Id.* Actual measurements at two locations near the operating Maple Ridge Wind Farm in August-September, 2007 found that during a 35-hour period, sound levels "averaged 42.5 dBA or 22.6 dBA above the expected background L₉₀ level" at one location, at the other location noise impacts of the turbines were more intrusive. Schneider Study at 13 and 15. During these times ground-level wind speeds were below the cut-in speed for the wind turbines but the turbines were

Schneider Study, and is attached hereto.

⁴⁵ See also Van den Berg Study at 19-20 (citing Rudolphi, E., "Wind turbine noise emission: Wind speed measurements below hub height give poor accuracy," PROCEEDINGS OF THE NORDIC ACOUSTICAL MEETING, Stockholm (1998), attached hereto).

operating. *Id.* at 17. Actual noise attributable to operation of the turbines exceeded impacts predicted in the Maple Ridge project sponsor's EIS by 3.4 to 7.0 dBA. *Id.* Under DEC's guidance these sound levels would be classified as "very objectionable to intolerable." *Id.* at 18.

Similar noise impacts as were found near the Maple Ridge Wind Farm can be expected to result with greater frequency from the Noble project because the terrain in Centerville is dominated by ridge lines where turbines are proposed to be sited, and most residents live in valleys or hollows below. By contrast, the Maple Ridge Wind Farm is located on the Tug Hill Plateau, which generally lacks ridge lines. The frequency of differential wind speeds in valleys or hollows can therefore be expected to be greater in Centerville than at the Tug Hill Plateau. "Generally wind increases with elevation so in most wind situations the turbines will experience higher winds than the terrain below, exposing residents to the turbine generated noise." Bolton Report at 24. *See also id.*, Attachment 1.

In addition, warmer air near the ground surface compared to the air temperature at the higher elevation of a wind turbine may result in the refraction of noise within the warmer air, concentrating noise nearer the ground level and generating "sound at great distances from the turbine." *Id.* at 20.

Finally, the DEIS noise assessment relies on microphone measurements for wind speed at 10 meters height and assumes that increases in wind speed at turbine height always result in comparable increases in ground-level wind speed. *See id.* at 10 (citing DEIS at Appendix L, Section 2.3). *Cf. also* Schneider Study at 18. This ignores the effect of wind shear or near-ground atmospheric stability on noise.

Because the DEIS relies on measurement methods and a computer model for estimating noise impacts that does not take noise refraction due to wind shear and temperature gradients into account, the DEIS must be supplemented with accurate modeling that reflects the complex wind and temperature conditions that can be expected in the project area.

iv. The DEIS fails to take into account the fact that noise generated by wind turbine clusters diminishes at half the rate of common noise sources.

According to a NASA study cited by Bolton, wind turbine clusters create a refraction effect in addition to the atmospheric refraction effects that affect each turbine. *Id.* at 20-21. However, the DEIS assumes that noise from the project will diminish with distance at the rate common for single noise sources. *Cf. id.* The DEIS thus substantially underestimates the effect of siting turbines in clusters, as proposed. *Id.* at 21.

v. Modulating noise sources like wind turbines generally are not masked by background sound, contrary to the DEIS.

According to the American National Standards Institute (ANSI), "it is impossible to

determine the degree of masking from A-weighted sound levels.” *Id.* at 23 (quoting ANSI). However, the DEIS relies throughout on A-weighted sound levels alone (including L90 and L10 measures) for the conclusion that normal ambient sound in the project area will mask the sound of wind turbines. There is no place in the DEIS noise assessment where bandwidths within the spectrum of audible sound generated by a wind farm are distinguished, nor where modulation within the sound spectrum is discussed. However, sound generated by wind farms modulates or “beats” substantially, but generally broadband sound sources (i.e., lacking significant modulation) are masked by background sound. *Id.* at 22-27.

In addition, modulation effects are magnified where, as here, several sound sources are modulating at once within audible range of residences and at the same time. Under such conditions, modulating sounds are particularly annoying. *Id.* at 24-27.

In addition, like the rime icing of airplane wings, icing of wind turbine blades can increase the aerodynamic cause of wind turbine noise, increasing the noise 3 to 5 dBA above what would be expected from wind turbines without icing. *Id.* at 28.

Notwithstanding the lack of any analysis of modulation effects, the DEIS acknowledges such effects (“a periodic swishing sound where the sound level rises and falls slightly with a frequency of about 1 second”), and notes that it will be “noticeable . . . well before it exceeds the background by 6 dBA.” DEIS at L-33. Based on a sound contour map estimating the area within which modulation sounds will be noticeable, the area “includes most of the entire project area and over 100 homes.” Bolton Report at 27. Once the DEIS is supplemented with realistic estimates of noise levels expected from the project at residences near the project area, the modulation effects of such levels can be expected to exacerbate intrusive noise levels.

In addition, noise above normal ambient sound has a greater potential for intrusion in the summer, because people spend more time outdoors and when indoors spend more time with windows open. *Id.* (quoting NYSDEC noise guidance).

The DEIS provides no assessment of the impacts to be expected from the substation transformer, a necessary component of the proposed project located near homes that would emit 100 decibels (A-rated). Bolton Report at 3. Moreover, this decibel level is reported in the DEIS as a sound power level, (DEIS at L-30), but the DEIS acknowledges that “the sound pressure level of the source can be calculated at any distance.” DEIS at L-28. *Cf.* Bolton Report at 3.n.3. The DEIS should therefore be supplemented with sufficient information to assess the impact of this noise source at the location of nearby homes.

vi. The weight of evidence from acoustical analysis of wind turbine noise suggests noise impacts resulting from the project are likely to be annoying for residents within one mile of the turbines.

Wind farms in Scotland where the distance from turbines to homes is less than one mile

have been disapproved on the basis of noise impacts. *Id.* at 28-29. The Swedish Environmental Protection Agency has reported that under conditions, as occur in Centerville, where residences are located in valleys below wind turbine sites, winds sufficient to propel the turbines are not masked by winds in the valleys, which can be much quieter, explaining survey results that show such residents are regularly annoyed by wind turbine noise. *Id.* at 29-32. In fact, 85% of residents at the Swedish site reported being annoyed by wind turbine noise in the range of 35-37.5 dBA. *Id.* at 32. These results are discussed and acknowledged in the DEIS, (at L-34), but without basis are dismissed as the result of psychological oddities. *Cf.* Bolton Report at 33.⁴⁶

Finally, international health standards established by the World Health Organization identify night time noise levels above 42 dBA measured outdoors as a cause of sleep disturbance leading to secondary adverse health impacts. *Id.* at 34.

To determine whether the project will avoid or minimize adverse noise impacts, meaningful information must be provided on existing background noise levels within 1,000 meters (3,280 feet) of wind turbine locations designated in the DEIS. Nighttime noise levels under a variety of weather conditions at an operating wind power plant such as Maple Ridge should then be provided to assess the increase in noise expected from the project.

8. The DEIS provides an insufficient basis to consider the potential cumulative impacts of the Project.

SEQRA requires a DEIS to provide a sufficient account of “reasonably related short-term and long-term impacts, cumulative impacts and other associated environmental impacts.”⁴⁷ The project sponsor’s Bliss Windpark, which is nearly complete, this project, and the sponsor’s planned Farmersville Wind Park would comprise about 200 utility-scale wind turbines in a single multi-county contiguous area. Additional wind farms nearby include Noble Wethersfield, Horizon Dairy Hills, Invenergy High Sheldon and the operating Wethersfield wind farm. In addition, the project sponsor has plans to add to the Wethersfield wind farm 85 turbines with the same height as those proposed for Centerville. DEIS at K-201. However, the DEIS discussion of visual impacts considers some of these projects, and not all are considered. *See* DEIS at K-191 to K-239 (“Supplemental Visual Resource Assessment”); *id.* at K-199 (considering “Noble Allegany Windpark, Noble Wethersfield Windpark, High Sheldon Wind Farm, Dairy Hills Wind Farm, the existing Wethersfield Wind Farm, and Noble Bliss Windpark”) and K-217.

⁴⁶ An updated study by Pedersen and Waye, incorporating references 21 and 22 to the Bolton Report, and relied on by Schneider, is attached hereto in support of this conclusion: Pedersen, E. and K. Persson Waye, “Human Response to Wind Turbine Noise: Perception, Annoyance and Moderating Factors,” 64 OCCUP. ENVTL. MED. 480 (2007).

⁴⁷ 6 NYCRR § 617.9(b)(5)(iii)(a).

Planned projects such as the Farmersville Windpark should be included among long-term impacts and cumulative impacts should include long-term impacts.⁴⁸ Consideration of long-term and cumulative impacts is therefore manifestly incomplete. The Town Board therefore has insufficient basis on which to consider cumulative impacts and must therefore reject the DEIS as insufficient.

In addition, the DEIS inappropriately relies on the large area around the project area for the conclusion that cumulative impacts will be minimal:

construction of the Windpark and Transmission Line is minor in comparison to the overall acreage of forested land located in the total area associated with the combined projects. (DEIS at 8.)

This approach to assessing cumulative impacts is unreasonable, as it would justify projects with the largest area impacts, and would justify minimal consideration of impacts that could be considered diluted by large area settings. As the Town Board has stated repeatedly, this is the largest project to have ever been considered locally. It should therefore receive enhanced rather than diminished scrutiny. The project sponsor's approach, if accepted, would dismiss the Board's own recognition of the magnitude of this project's potential impacts.

Such impacts are, in any case, not confined to the specific area of land disturbance that would result from the project. Cumulative impacts to birds and bats reach the ground and air habitats these species use to nest, migrate, and forage. Fragmentation of habitat resulting from miles of turbine site access roads, transmission lines, and interference by turbines with bird flyways may result in substantially greater adverse impacts to wildlife than combined footprint of turbine sites, new access roads and transmission lines and their service roads. Habitat fragmentation is a long-term impact neglected in the DEIS. In the absence of an assessment of this long-term impact, the DEIS relies on the state-wide benefits of the project. DEIS at 8 ("Cumulatively, construction and operation of the wind power projects will have significant long-term beneficial effects on the use and conservation of energy resources."). However, as shown above in comment #2, these benefits have been dramatically overstated. Without further information, no meaningful determination can be made that the habitat fragmentation effects of the project will be acceptable.

9. The DEIS provides insufficient information to determine whether local groundwater resources will be adequately protected.

The DEIS notes that all residents in and around the project area rely on groundwater wells for their drinking water, and groundwater in the area is located at depths from five below the ground surface to the ground surface itself. DEIS at 2-29. However, the DEIS does not provide

⁴⁸ 6 NYCRR § 617.9(b)(5)(iii)(a).

sufficient information to determine the nature of the risk to groundwater resources that would result from project construction activities. Instead, the DEIS says the details will be set forth in “permit requirements provided by NYSDEC and the USACE subsequent to the submittal of the Joint Wetland Permit Application.” DEIS at 2-42.

Activities required by the project that could pollute groundwater include construction of culverts in streams, construction of roads over streams, “introduction of pollutants to groundwater from spills of petroleum and other chemicals during operation of the Project.” DEIS at 2-39.

“Any soil compaction that takes place during construction is not expected to extend to the water table,” according to the DEIS at 2-37, but excavation of the concrete pads for turbines would reach at least five below the surface, the maximum depth to groundwater according to the DEIS at 2-29. Despite mapping of all 67 proposed turbine locations there is no information on the depth to groundwater at the sites where excavation would occur. No plan is offered to protect the quality of groundwater, despite acknowledging that all nearby residents would be adversely affected if groundwater in their vicinity becomes polluted. The Town Board should insist that the DEIS be supplemented with specific plans for preventing localized groundwater contamination, including site specific information on the depth to groundwater at each of the 67 turbine sites. Local residents must have an opportunity to comment on the accuracy and sufficiency of these plans.

10. The project sponsor has deferred several mitigation measures, depriving the Town Board of the ability to certify that relevant adverse impacts will be adequately mitigated.

SEQRA requires that when proposing to defer analysis of adverse impacts and measures to avoid or mitigate impacts, the Town Board must provide a reasoned basis be provided that “demonstrate[s] that such review is clearly no less protective of the environment.”⁴⁹ The DEIS proposes to defer analysis of impacts and avoidance or mitigation measures in several areas, but provides no basis on which the Town Board can justify accepting these proposals

i. Transmission line impacts.

Noble will submit to PSC an Application for a Certificate of Environmental Compatibility and Public Need, pursuant to Article VII of the New York State (NYS) Public Service Law for the construction of a 13.1-mile overhead 115-kilovolt (kV) transmission line and substation in the Town of Centerville in Allegany County, the Town of Arcade in Wyoming County, and the towns of Freedom and Yorkshire in Cattaraugus County that will connect the Windpark to the New York State power grid. In accordance with the State Environmental Quality Review Act

⁴⁹ 6 NYCRR § 617.3(g)(1).

(SEQRA), actions reviewed by PSC under Article VII of the New York State Public Service Law are not subject to review under SEQRA (6 NYCRR Part 617.5); therefore, the scope of this DEIS includes only the Windpark. DEIS at 1.

However, the DEIS specifically and without any stated basis segments its assessment of impacts of the wind energy facility, comprised of clusters of wind turbines, their construction and operation, from the construction and maintenance of the transmission line, which is also subject to PSC review. DEIS at 1-1 and 1-2. See also *id.* at 1-9 (“A detailed description of the transmission line sections and an evaluation of its impacts will be provided in the Article VII Application, which Noble plans to submit to the PSC in the second quarter 2008.”). The Town Board is therefore not provided with any information to assess the impacts of the transmission line, which is an integral feature of the project. Since the two elements of the project are being segmented, the Town Board is required to provide a reasoned basis why separate PSC review of the transmission line is no less protective of the environment and provides equivalent opportunity for public input than an integrated review of the project that includes the transmission line impacts. There seems to be no such basis available, as the transmission line construction and maintenance can be expected to have similar impacts on habitat fragmentation as the construction and maintenance of turbine sites and their access roads. In addition, the Centerville substation, said to be part of the transmission line but not the project, (DEIS at 1-2), has similar noise impacts on at least two nearby homes as the wind turbines. See Bolton Report at 3.

ii. Impacts on wetlands.

Impacts on wetlands that would result from the project are identified, but no more than a “conceptual mitigation plan” is offered, and no discussion of alternatives that would avoid wetland disturbance is offered. DEIS at 2-3 and I-9 (“Noble has developed this mitigation plan as a conceptual document to demonstrate the adequacy of suitable *wetland mitigation opportunities*”) (emphases added). Although there is a section of the plan titled “Mitigation Area Description,” (DEIS at Section 2.2), the description says only that a yet-to-be-disclosed mitigation area will be located “in the vicinity of an existing wetland.” *Id.*, p. 2-5. The project sponsor says the wetland mitigation plan will require it to obtain conservation easements from private landowners at a location to be determined in the future. *Id.*, p. 2-5.

Noble acknowledges that no mitigation has been chosen. DEIS at 3-1. Instead, the DEIS defers analysis of wetlands impacts “in conjunction with the NYSDEC and USACE as part of the permitting process.” DEIS at 3, 4-4.

iii. Impacts on wildlife habitat.

Similarly, the DEIS defers meaningful assessment of adverse impacts to wildlife habitat:

If construction takes place in suitable nesting habitat for endangered or threatened species in the spring to early summer – during breeding season – the work area

will be surveyed by an environmental monitor in advance of construction. With implementation of monitoring activities, no significant adverse impacts from construction on threatened or endangered species are anticipated. (DEIS at 4.)

Without sufficient information on whether construction will in fact disturb sensitive nesting habitat, there is no basis for the stated conclusion, that “no significant adverse impacts from construction on threatened or endangered species are anticipated.” For example, impacts on migrating birds are assessed based not on a comprehensive, four-season survey of the project area, but instead on general literature reviews, studies of such impacts at other wind power plant sites distant from the project area, and the finding that “there are no features in the Project Area that attract or concentrate large numbers of migrating birds.” *Cf.* DEIS at 4. Similarly, adverse impacts on bat populations is based on the finding that “there are no features in the Project Area that attract or concentrate large numbers of bats.” However, no comprehensive investigation of the project area was performed to determine whether the area in fact attracts or concentrates large numbers of bats or migrating birds.

Nor was any site-specific investigation of bat populations outside the area performed. For example, there is no discussion of the major bat hibernaculum at Letchworth State Park, near the project area. *Cf.* DEIS at 2-99 (“Surveys identified no major rock outcroppings, cave dwellings, or hibernacula where bats may roost *within the Project Area.*”) (emphasis added). Therefore, no basis exists for the conclusion that “[i]t is anticipated that bat fatality rates for the Project will be within the range of the NWCC national average and the 2006 Maple Ridge post-construction weekly bat fatality results.” *Id.* “Postconstruction mortality monitoring” is offered, (*id.*), but this provides no basis for avoiding or mitigating anticipated adverse impacts on wildlife in the first instance, as SEQRA mandates. The DEIS instead inappropriately seeks to defer a determination on proper avoidance or mitigation measures to the operational stage of the proposed project. *Id.* at 5 (“This management approach will allow mitigation measures to be developed/modified during the course of Windpark operation that are responsive to site-specific conditions and to the growing and evolving database of information regarding bird/bat interactions with turbines.”). The DEIS must therefore be supplemented with sufficient site-specific information to determine adverse impacts on birds and bats that can be anticipated.

iv. Visual impacts.

The DEIS finds that the project will result in a significant change to the visible landscape of the community, including adverse visual impacts on properties eligible for the National Register for historically significant buildings, (DEIS at 7), and that “[moving] [s]hadows from the turbines will fall on some residences.” DEIS at 6. However, the project sponsor inappropriately proposes to defer a meaningful assessment of the specific impacts of visual blight and shadow flicker to the operational stage of the project: “Mitigation measures will be taken on a case-by-case basis where shadow flicker or other adverse visual impacts pose a significant problem for a landowner in accordance with the Complaint Resolution Process.” *Id.* Similarly:

“The final mitigation plan will be approved by the NYSHPO [New York State Historic Preservation Office] prior to construction.” DEIS at 8.

Since shadow flicker is now a well-known adverse impact on health and aesthetic value of public and private property near wind farms, there is no reason the project sponsor cannot provide an assessment of such impacts based on the latest methods. Moreover, if the project sponsor defers review of a plan to mitigate visual impacts on historically valuable buildings (such as the Town Hall, *cf.* DEIS at 10), the Town Board will be unable to assess the sufficiency of the plan. The project sponsor must therefore provide any plan that will be submitted to NYSHPO and otherwise supplement the DEIS with sufficient site-specific information to determine adverse visual impacts that can be anticipated.

Impacts that would result from night time lighting cannot be determined at this time because the project sponsor has no determination from FAA as to the amount of lighting that will be required. DEIS at 1-13 and 1-14 (“if allowed by the FAA, lights will be installed on towers around the Project perimeter, and those within the perimeter spaced a half mile apart, rather than on all structures”). The Town Board therefore cannot determine whether these impacts are acceptable until further information from FAA is provided by the project sponsor.

v. Mitigation of the risk of accidents (emergency measures).

No plan for emergency measures is provided in the DEIS. DEIS at 1-19 (“the operations staff will develop a site-specific Emergency Action Plan (EAP) prior to the start of construction”).

Appendix R to the DEIS promises to develop a Project Health and Safety Plan in phases as design, construction and operational phases occur, but no such plan is included in the DEIS. *See* DEIS at R-7. For example, during the construction phase, emergency measures will be developed, but none are available now:

During this phase Noble will incorporate new and relevant information into an Emergency Action Plan (EAP) specific for the Allegany Windpark. A draft EAP in Attachment B. . . . The EAP will detail the actions to be taken in the event of an emergency from initial notification through the arrival of responsible first responders. Planning and coordination with the local fire departments and emergency response organizations is paramount. In addition, the EAP will set forth guidelines for seamless communication in the event of a fire or other emergency. (*Id.*)

“The electrical collection system is currently under design and will be included in the DEIS once complete. Additionally in the DEIS will be plans of all proposed facilities, including storage or maintenance units, and fencing. Furthermore, surveyors are identifying existing utilities and other rights of way. Because information on both is currently being gathered, locations were not

included on the map.” Application at Section II.1.

Material Safety Data Sheets are provided for seventeen substances required to construct or operate components of each of the 67 wind turbines identified in the Application, including the nacelle, tower and blades. Application, Appendix A. These substances include paint, adhesives, sealants, lubricants and coolants. According to these sheets, many of the substances are highly flammable, poisonous and/or toxic or hazardous under applicable federal environmental laws, and vapors from a number of these substances are known to cause cancer, birth defects, or respiratory and lung diseases to those exposed to them, especially when combusted. *Id.* However, the Application and the DEIS provide no information about the typical duration of a turbine fire, the known emissions from such fires, and measures that would be taken in the event of a turbine fire, which would be expected to expose nearby residents to emissions from the combustion or release of these substances.

In addition, some substances (such as the lubricant Loctite “Heavy Duty Anti-Seize” and Fuchs “Lubritech”) can contaminate groundwater when released. *Id.* However, the DEIS does not identify any emergency response measures to contain such substances should they be released, spilled or otherwise mishandled. This deficiency should also be rectified in a supplement to the DEIS.

Deferring emergency response plans is unacceptable, especially for an experienced wind energy developer. At the very least the DEIS should provide specific information on the capacity of local fire departments and emergency response organizations to handle the kinds of emergencies than can be expected from this project, including an operational turbine fire. No information is provided in the DEIS on what local fire departments and emergency response organizations exists or where they are.⁵⁰ Fire and lightning strikes are identified in the draft EAP as potential hazards, (DEIS at R-41), but in such an event only generic responses are identified, such as calling Noble, the Centerville or Rushford fire departments, local hospitals, or “911”. DEIS at R-42 and R-43.

If the emergency response to a turbine fire is no more than to let the fire burn itself out (because no local fire department possesses equipment that would reach to the nacelle or hub height, where a fire is most likely to occur), it should say so. If more protective responses are available, the DEIS should provide relevant information on those responses. In either event, the DEIS needs to be supplemented with appropriate information to allow the Town Board to assess the magnitude of the risk to its residents from fire or other pathways of exposure to these substances and the emergency response the Board can expect.

In each of these areas, the DEIS must be supplemented by providing concrete emergency

⁵⁰ A sample checklist of emergency measures provided in the DEIS lists emergency responders in Clinton County, NY, in the Lake Placid area. DEIS at R-10 to R-28.

plans to mitigate the risk of accidents that can be expected from project operations.

11. The DEIS provides insufficient information to determine the risks to public safety of ice throw from wind turbines.

The risk of harm from ice throw at this location is unlikely to be addressed in later reviews, for example by PSC. The PSC review is required by statute to balance risks of harm against benefits to the state. To the extent that the risks to public health and safety from this project are comparable to other risks attributable to alternate power supply sources, PSC will probably find that the state's policy to promote renewable energy sources, including wind power, outweighs the risks to the state. However, the Town must balance the risks to local citizens against the benefits to the local community. Since all electricity generated by this project will be absorbed into the regional electricity grid, the project will provide no measurable benefit to the electricity needs of the community, nor to the interests of the community in renewable energy sources. This is especially true in light of the low capacity for wind generated electricity in particular.

Moreover, the intermittent nature of wind generated power can be expected to result in surges and brownouts as power from the project comes on and goes off, for those closest to the energy source. The community is therefore more likely to suffer degradation of its electricity service as a result of this project than electricity consumers elsewhere in the state. The risk of harm, in other words, is not outweighed by the benefits from the project. The only tangible local benefits that will result from the project are for those enjoying payments for the use of their land, a small fraction of the Town's population.

The DEIS does not provide sufficient information to assess the risk of harm from ice throw that would result from this project. An adequate analysis would require consideration of the following factors, considered in the 2005 review of the East Haven Wind Farm, a four-turbine, six MW wind energy project in Vermont:

1. Determining the periods when ice accretion on structures is technically possible, based on historical climatic observations.
2. Within those periods, determining when the wind speed conditions are within the operational range of the wind turbines.
3. Within the resultant periods, excluding those periods when the wind turbines will be shut down automatically by the wind turbine control system or by remote operators.
4. Using guidelines based on an estimate from the above of the amount of icing, arriving at the probability of fragments landing at distances from the turbines up to a conservative estimate of the theoretical maximum distance of ice throw (equivalent to a 280 acre area), considering the slope of the terrain and parameters of the proposed wind turbines.

5. Estimating the probability of people being present within the distances from the turbines that are being considered.

6. Arriving at the combined probability of people being hit by ice fragments.

7. Comparing that probability to a suitable benchmark risk – the most commonly used risk being that of being struck by lightning.⁵¹

Unlike the Allegany Windpark as proposed, there are “no permanent residences within five miles of [the East Haven Windfarm project location].”⁵² Moreover, for the East Haven Windfarm the probability of a person present within the area subject to ice throw is “zero,” and “forest cover throughout the 280 acre area” would “block ice fragments from striking a person.”⁵³

The DEIS should be supplemented with a comparable analysis that takes into account the proximity of public roads and residences to turbines within the ice throw area applicable to this project, and offers available mitigations for those roads and residences subject to risk of harm. Such mitigations should include relocating specific proposed turbine locations to avoid unacceptable risk.

Conclusion

The Applicant has:

- i) submitted an incomplete DEIS;
- ii) failed to provide sufficient information on practical measures to avoid and mitigate potential adverse environmental impacts, including reconfiguring the project;
- iii) failed to provide sufficient information on related applications for permits or

⁵¹ Prefiled Rebuttal Testimony of Marc Patrick Leblanc on Behalf of East Haven Windfarm, State of Vermont Public Service Board, Docket No. 6911, Petition of EMDC, LLC d/b/a East Haven Windfarm for a Certificate of Public Good, February 11, 2005, pp. 4-5, available at <<http://www.easthavenwindfarm.com/filing/feb/rtoml.pdf>> (hereafter, LeBlanc Testimony). Mr. LeBlanc is a senior engineer with Garrad Hassan and Partners Ltd. of Ottawa, Ontario, and had at the time of his testimony in favor of the East Haven Windfarm project reviewed 40 proposed wind farm sites. *Id.*, p. 1.

⁵² Recommendations of the Hearing Officer, State of Vermont Public Service Board, Docket No. 6911, p. 34, available at <<http://www.state.vt.us/psb/orders/2006/files/6911fnl.pdf>>.

⁵³ LeBlanc Testimony, pp. 5-6.

approvals required to be coordinated with this review; and

- iv) invited unauthorized piecemeal or segmented review of its project.

Because the project sponsor requests a permit for an activity for which practicable alternatives exist, it would remain unacceptable even if the deficiencies in the Application and DEIS were resolved. Thus, it would be entirely inappropriate to issue a conditional approval in this case. Furthermore, the failure of the project sponsor to provide concrete mitigation proposals in areas where its own DEIS identifies the likelihood of adverse environmental impacts, to address whether it has avoided or minimized several types of impacts, and to analyze whether it could comply with regulatory requirements of other involved agencies has made it impossible for CCC to comment on these essential elements of the project proposal at this time. Granting a conditional approval to allow the project sponsor to remedy the many deficiencies in the DEIS would deprive CCC and involved agencies of this opportunity, and is therefore inappropriate. Moreover, those deficiencies are so extensive that a certification that SEQRA's requirements have been met cannot be issued on the merits of the Application and DEIS. Thus, instead of issuing a conditional permit, the Town Board should request substantial supplementation of the DEIS because it is manifestly incomplete.

If the project sponsor supplements the DEIS we look forward to making further comments. If the project sponsor refuses to supplement the DEIS, the Town Board is authorized to disapprove the project.

Respectfully submitted,

/s

Gary A. Abraham

- gaa/encs:
1. Bolton, R., EVALUATION OF ENVIRONMENTAL NOISE ANALYSIS FOR "NOBLE ALLEGANY WINDPARK PROJECT" (March 19, 2008), with resume (Appendix 1)
 2. Letter from George Kamperman to Gary A. Abraham, Esq., "Proposed Noble Allegany Windpark DEIS" (April 1, 2008)
 3. George Kamperman resume
 4. Van den Berg, G., THE SOUND OF HIGH WINDS: THE EFFECT OF ATMOSPHERIC STABILITY ON WIND TURBINE SOUND AND MICROPHONE NOISE, Doctoral Dissertation, Groningen University, Netherlands (May 12, 2006)
 5. Pedersen, E. and K. P. Waye, "Human Response to Wind Turbine Noise:

Perception, Annoyance and Moderating Factors,” 64 OCCUP. ENVTL. MED. 480 (2007)

6. Clifford P. Schneider, “Accuracy of Model Predictions and the Effects of Atmospheric Stability on Wind Turbine Noise at the Maple Ridge Wind Power Facility, Lowville, NY - 2007” (April 10, 2008).

7. Letter from Clifford P. Schneider to Steve Tomasik, Energy Projects and Management, Division of Environmental Permits, NYSDEC (April 13, 2008) (cover letter to item 6, above)

8. Rudolphi, E., “Wind turbine noise emission: Wind speed measurements below hub height give poor accuracy,” PROCEEDINGS OF THE NORDIC ACOUSTICAL MEETING, Stockholm (1998)

cc: client
NYSDEC