

## APPENDIX O.

### Responses to Comments and Questions Raised At Public Hearing For the Town Board of The Town of Villenova Ball Hill Wind Energy Project Hamlet Methodist Church, September 4, 2019

A complete list of comments and questions from the Villenova Public Hearing follows a topical summary of those comments and others submitted to the Villenova Town Board during the public comment period in this proceeding.

#### A. Eagles

The potential impacts of the Proposed Action on eagles in the vicinity of the Ball Hill Wind Project area is a key issue of focus in this supplemental SEQRA proceeding.

The expanded discussion of this issue contained in the revised SDEIS (Section 2.1.2.7) draws the following conclusions on this issue:

1. The risk to eagles is low from the wind turbines proposed for the Project, and in particular the taller turbines with larger rotor swept areas referenced in the Proposed Action., A range of expected mortality of all avian species was presented in the FEIS in 2016. While the rotor area associated with the proposed taller turbines will be higher and larger, predicted avian mortality for all species is expected to remain within the range predicted in 2016. As discussed in the SDEIS, eagles are diurnal flyers with keen vision and can easily avoid the rotor blades of the proposed turbines.
2. There are a number of objective bases for the conclusion in point 1 above. Wind turbines have been operating in New York State for approximately two decades. During that time only one (1) eagle death has been documented as being associated with a wind turbine in the state. In addition, numerous communications have occurred between Ball Hill Wind Energy and state and federal agencies with jurisdiction over eagle protection, and whereas the NYSDEC has issued the Project a permit under Article 11 of the NYS Environmental Protection Law (dealing with threatened and endangered species), no agency has formally recommended that the Project seek an incidental take permit for eagles.
3. To help reduce the potential for eagle mortality, Ball Hill will implement a voluntary **Bird and Bat Conservation Strategy**, including an **Eagle Management Plan** (contained in Appendix N of the revised SDEIS).

#### B. Health Effects

A number of commenters expressed concern about alleged health effects of commercial wind turbines.

Evan Davis, a registered nurse in Chautauqua County (Comment 3), made reference to “an increase in referrals of patients with idiopathic vestibular issues, syncope, migraines, seizures and strokes” “in the last six months following the Arkwright Wind Project”. One may infer from the context of this comment that Mr. Davis was alleging that such referrals were based on legitimate health problems and that they were

somehow caused by the Arkwright Wind project, although no evidence has yet been offered about any of these presumptions. A cursory review of information on the internet reveals a number of known causes for these ailments, but this reviewer has not found anything attributing them to wind turbines.

On the contrary, a recent report of the **Iowa Environmental Council, “Wind Turbines and Health”** concluded “There is no authoritative evidence that sound from wind turbines represents a risk to human health among neighboring residents.” (Wind Turbines and Health, by Peter S. Thorne, David Osterberg and Kerri Johannsen, 2019). The IEC report (Attachment 1 hereto) reviewed the extant peer-reviewed critical reviews of the available research done on the topic of wind turbines and health and found that “neither review found a link between health outcomes and wind turbines”. Rather:

*The only causal link identified is that wind turbines may pose an annoyance to some who live near them. However, annoyance is likely influenced by a person’s feelings about the impacts of wind turbines on viewsheds, whether they receive economic benefit from the turbines, whether they have had a say in the siting process, and attitudes about wind power generally. Given the evidence and confounding factors, and the well-documented negative health and environmental impacts of power produced with fossil fuels, we conclude that development of electricity from wind is a benefit to the environment. We have not seen evidence that wind turbines pose a threat to neighbors. We conclude that wind energy should result in a net positive benefit to human health.<sup>1</sup>*

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<sup>1</sup>IEC, page 6.

Alleged health effects of the Proposed Action were not identified for review by the Court.

### **C. Infrasonic**

The results of Epsilon Associates, Inc. research indicate that there is no audible infrasound either outside or inside homes at 1,000 feet from a wind turbine. The wind turbine sound levels meet the ANSI standard for low frequency noise in bedrooms, classrooms, and hospitals, meet the ANSI standard for thresholds of annoyance from low frequency noise, and there should be no window rattles or perceptible airborne induced vibration of light-weight walls or ceilings within homes. In homes there may be slightly audible low frequency noise beginning at around 50 Hz (depending on other sources of low frequency noise); however, the levels are below criteria and recommendations for low frequency noise within homes. [1] Low frequency noise and infrasound from wind turbines, R. O’Neal et al, Noise Control Engineering J., 59(2), 2011.

As noted in the 2011 NARUC report, “the widespread belief that wind turbines produce elevated or even harmful levels of low frequency and infrasonic sound is utterly untrue as proven repeatedly and independently by numerous investigators.” [2] Assessing Sound Emissions from Proposed Wind Farms & Measuring the Performance of Completed Projects, NARUC, prepared by Hessler Associates, Inc., October 2011.

While the Vestas V136/3.45 wind turbine proposed for this site is slightly larger than those studied in the citations above, the conclusions on low frequency/infrasound from the V136 are consistent with these studies.

In their report, Infrasound and low frequency noise from wind turbines: exposure and health effects (Attachment 2) Bolin, et al conclude:

*The dominant source of wind turbine low frequency noise, LFN (20–200 Hz), is incoming turbulence interaction with the blade. Infrasound (1–20 Hz) from wind turbines is not audible at close range and even less so at distances where residents are living. There is no evidence that infrasound at these levels contributes to perceived annoyance or other health effects. LFN from modern wind turbines are audible at typical levels in residential settings, but the levels do not exceed levels from other common noise sources, such as road traffic noise. Although new and large wind turbines may generate more LFN than old and small turbines, the expected increase in LFN is small.*

.....

*It has been argued that infrasound and low frequency noise from wind turbines may cause serious health effects in the form of ‘vibroacoustic disease’, ‘wind turbine syndrome’ or harmful infrasound effects on the inner ear. However, empirical supports for these claims are lacking.<sup>2</sup>*

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<sup>2</sup> Karl Bolin, Gösta Bluhm, Gabriella Eriksson and Mats E Nilsson, *Infrasound and low frequency noise from wind turbines: exposure and health effects*, Env. Res. Lett. 6 (2011), Sweden.

Alleged infrasound effects of the Proposed Action were not identified for review by the Court.

#### **D. Setbacks**

Several comments were expressed about the adequacy of turbine setback distances from residences. In particular, some commenters expressed concern that the 1,000-foot minimum residential setback contained in the Villenova Town Wind Energy Law is inadequate for a wind turbine that might stand as tall as 599 feet. What these comments overlook is the fact that, as proposed and approved in 2016, the closest turbine to a residence would actually be over twice the turbine’s total proposed maximum height of 599 feet, or **1,207 feet**, not 1,000 feet. Of course, all remaining 28 turbines are even farther from residences. The reasonableness of these setbacks is discussed in the attached report by Dr. Christopher Ollson, Ph.D. and QP<sub>RA</sub> (Response to County Planning Board, 2018 (Attachment 3)).

The reasonableness of setbacks in the Proposed Action were not identified for review by the Court.

### E. Bats

Ball Hill has been granted a permit under Article 11 of the NYS Environmental Protection Law, which requires the Project to cause a net conservation benefit to the State- and federally listed northern long-eared bat (NLEB). The protective measures put in place for NLEB will also benefit other bat species. The Ball Hill Net Conservation Benefit Plan is detailed in SDEIS Appendix K.

Potential impacts of the Proposed Action on bats were not identified for review by the Court.

#### Individual Comments from Public Hearing Transcript

Number	Page	Commenter	Comment	Response
1	6	Tina Graziano	<ol style="list-style-type: none"> <li><i>The SDEIS notes that many of the expected impacts associated with the specific Proposed Action (height increase and undergrounding of interconnection lines) are not expected to change from the 2016 Approvals.</i></li> <li><i>The legal minimum setback of the turbines from residences has not changed with the proposed height increase.</i></li> <li><i>The Hanover turbines are located in a “strong migratory bird flyway”.</i></li> </ol>	<ol style="list-style-type: none"> <li>Most impacts and mitigations remain as described in the FEIS. The Proposed Action comprises only two Project design changes.</li> <li>Please see <b>D. Setbacks</b> above.</li> <li>Bird migration pathways were discussed in the Supplemental Draft EIS; see section 2.6.2.1.</li> </ol>
2	8	Mark Twichell	<ol style="list-style-type: none"> <li><i>“We are assured that no additional birds or bats will be killed as a result of [the proposed height increase].”</i></li> <li><i>“SEIS makes no mention of additional infrasound created by larger blades....”</i></li> <li><i>SEIS makes no mention of the additional impact [on] Doppler radar as a result of taller machines with larger blades.”</i></li> <li><i>The SEIS is not clear on whether the larger machines will require deeper concrete foundations.”</i></li> </ol>	<ol style="list-style-type: none"> <li>Please see expanded Avian and Eagle discussions in revised SDEIS.</li> <li>Please see <b>C. Infrasound</b>, above.</li> <li>It is not uncommon for operating wind farms to corrupt Doppler weather radar data on occasion, giving rise to “false positive weather events”. Meteorologists have acknowledged this issue from several New York wind farms and typically manage it by adapting data interpretation techniques and utilizing data suppression methods. There has been no change in the risk of Doppler</li> </ol>

				<p>weather radar effects from increasing turbine heights, as compared with the 2016 approved heights. NOAA, the federal agency with jurisdiction over Doppler weather radar filed no objections to the FAA Determinations of Non-Hazard for the Ball Hill turbines, at either their 2016-approved heights or the proposed increased heights.</p> <p>4. As discussed in the SDEIS Section 1.1.2.1, the foundations for the proposed taller turbines will be wider than those for shorter turbines but excavated to the same depth: approximately 10 feet.</p>
3	10	Evan Davis	<ol style="list-style-type: none"> <li>1. <i>(As a result of the Arkwright wind project) we have had a major increase in referrals of patients with idiopathic vestibular issues, syncope, migraines, seizures and strokes.</i></li> <li>2. <i>Has anyone done any surveys on the long-term effects of these wind turbines on human, let alone the animals?</i></li> <li>3. <i>The proposed road is thirty feet from my drinking water (886 Bartlett Hill Road).</i></li> </ol>	<ol style="list-style-type: none"> <li>1. Please see <b>B. Health Effects</b>, above. In addition, please see “Wind Turbine Health Impact Study: Report of Independent Expert Panel January 2012, Prepared for: Massachusetts Department of Environmental Protection and Massachusetts Department of Public Health, Findings ES 4.1.a Production of Noise and Vibration by Wind Turbines: <i>Claims that infrasound from wind turbines directly impacts the vestibular system have not been demonstrated scientifically. Available evidence shows that the infrasound levels near wind turbines cannot impact the vestibular system.</i></li> <li>2. Thousands of commercial wind turbines operating continuously for decades throughout the world have yielded no scientific evidence of harmful health effects.</li> <li>3. The attached Google Earth screenshot shows that no proposed Ball Hill wind energy facility or access road would be</li> </ol>

				placed within 2,800 feet of the residence at 886 Bartlett Hill Road in Hanover (Attachment 4).
4	11	Joni Riggle	<ol style="list-style-type: none"> <li>1. Residential setbacks and noise limits are inadequate.</li> <li>2. Hancock Wind Project in Maine has larger actual distances from turbines.</li> <li>3. Low frequency noise.</li> <li>4. WHO recommends 45 dBA to avoid adverse health effects.</li> <li>5. Brown County (Wisconsin) Board of Health declared the Shirley Wind Project a “public health human hazard”.</li> <li>6. Madison County (Iowa) County Board of Health acknowledges adverse health effects from (an) improperly sited wind project and recommend at least one and a half mile setbacks to avoid adverse health effects.</li> <li>7. Shadow flicker.</li> <li>8. Avian studies have not been updated since 2016.</li> </ol>	<ol style="list-style-type: none"> <li>1. Please see <b>D. Setbacks</b>, above.</li> <li>2. The fact that distances from turbines at a different project are greater does not prove the inadequacy of setback distances in the proposed Ball Hill project.</li> <li>3. Please see <b>C. Infrasound</b> above.</li> <li>4. While no evidence has been offered to demonstrate that the Town of Villenova noise limit of 50 dBA is inadequate, <b>it should be noted the proposed taller turbines are generally quieter than the shorter turbines, is less than the WHO 45 dBA standard at 760 of the 769 modelled receptors, and where it exceeds this level it is only by an imperceptible 1-2 dBA (i.e. 46dBA at 8 receptors and 47 dBA at only 1 receptor).</b></li> <li>5. It is unclear what the Brown County Board of Health declaration about a different project might have to do with the proposed Ball Hill project in Villenova.</li> <li>6. No evidence has been offered in this proceeding to indicate that the proposed actual setbacks in the Ball Hill project are unreasonable. On the contrary, please see <b>D. Setbacks</b> above and the report of Dr. Ollson attached. Moreover, please refer to the 2019 Report of the Iowa Environmental Council cited in <b>B. Health Effects</b>, above, finding no scientific evidence from health effects from wind turbines.</li> </ol>

				<p>7. Any problems caused to residents from shadow flicker effects will be addressed through the Project’s Complaint Resolution process and mitigated on a case-by-case basis.</p> <p>8. An eagle point count survey and nest monitoring were completed in 2017. Also, please see <b>A. Eagles</b> above, and the expanded discussion of avian and eagle impacts and mitigations in the SDEIS.</p>
5	14	Susan Baldwin	<i>Reports on 911 cell calls being dropped.</i>	There has been no indication that dropped cell calls in the region are caused by wind turbines.
6	16	John Dudley Robinson	<ol style="list-style-type: none"> <li>1. <i>Concerns about scenic impacts.</i></li> <li>2. <i>Concerns about local brown bat colony.</i></li> <li>3. <i>Madison County Board of Health Dr. Kevin DeRegnier: flicker and infrasound.</i></li> </ol>	<ol style="list-style-type: none"> <li>1. The visual impacts associated with the Proposed Action are acknowledged and well detailed in the SDEIS Appendix B.</li> <li>2. Please see <b>E. Bats</b>, above.</li> <li>3. Please see Response to Comment 4.6 and <b>B. Health Effects</b>, above.</li> </ol>
7	19	Judy Phillips	<ol style="list-style-type: none"> <li>1. <i>Where is the eagle management plan?</i></li> <li>2. <i>Is the developer applying for a federal bald eagle incidental take permit?</i></li> <li>3. <i>Since the developer quoted and used (E&amp;E) to quote federal guidelines they should not be allowed to terminate the process before final results are determined.</i></li> </ol>	<ol style="list-style-type: none"> <li>1. Please see SDEIS Appendix N.</li> <li>2. No. Applying for a federal eagle take permit is a voluntary action. We are not aware of any operating wind project in New York State that has such a permit, nor did any state or federal agency formally recommend that one be obtained for Ball Hill Wind.</li> <li>3. The USFWS Eagle Conservation Guidance Plan is a voluntary process associated with application for an incidental take permit. As mentioned previously, no such permit has been sought for the Project. The Bird and Bat Conservation Strategy (BBCS) and Eagle Management Plan for the Project is included as Appendix N to the SDEIS.</li> </ol>

8	22	Julie Delcamp	<i>Complained about not being able to speak at August 14, 2019 Town Board meeting.</i>	Comment noted.
9	25	Julie Ortendahl	<i>Complained that her proposal to install a gas line in a ditch was disapproved by previous Town Board.</i>	Comment noted.
10	26	Patricia Ryan	<ol style="list-style-type: none"> <li>1. <i>Visual impacts</i></li> <li>2. <i>Health effects</i></li> </ol>	<ol style="list-style-type: none"> <li>1. Please see Response to Comment 6.1 above.</li> <li>2. <b>Please see B. Health Effects</b>, above.</li> </ol>
11	28	Matt Aldinger	<i>Supports Project because of its positive economic and fiscal impacts.</i>	Comment noted.
12	30	Patricia Greenstein	<ol style="list-style-type: none"> <li>1. <i>Concerned about impacts on residential property values.</i></li> <li>2. <i>Complained of “black iron and sulfur stuff” in well water as a result of Arkwright Wind project.</i></li> </ol>	<ol style="list-style-type: none"> <li>1. The Property Value assessment for the proposed Project indicated that it would not negatively impact neighboring residential property values. Please see SDEIS, Appendix G.</li> <li>2. It is difficult to respond to this comment without more specific information about the referenced situation. As discussed in the SDEIS 2.2.2.3, negative impacts on groundwater will be avoided through best construction practices, to be detailed in the Project’s SWPPP.</li> </ol>
13	33	Doug Fairbanks	<ol style="list-style-type: none"> <li>1. <i>Former Arkwright Planning Board Chair supports project for all its positive economic and fiscal impacts.</i></li> <li>2. <i>Personal interviews with turbine hosts indicate support.</i></li> </ol>	Comment noted.
14	36	Karen Harvey	<i>“I hope you will all take the precautions that have been given to you here to protect your water, your children, and your property values.”</i>	Comment noted.
15	38	Nancy Huber	<ol style="list-style-type: none"> <li>1. <i>Hanover turbines are in migratory flyway.</i></li> <li>2. <i>Adequacy of residential setback.</i></li> </ol>	<ol style="list-style-type: none"> <li>1. Bird migration pathways were discussed in the Supplemental Draft EIS; see section 2.6.2.1</li> <li>2. Please see <b>D. Setbacks</b> above.</li> </ol>
16	41	Kristin Baldwin	<i>Complained about “good neighbor agreement”.</i>	The signing of any agreement with the Project is strictly voluntary.

## Written Comments

1. Judy Phillips
  - a. Comment on eagles. 9/5 and 9/10/19  
Response: See expanded discussion of eagle impacts and Appendix N. to SDEIS.
  - b. Comment on shadow flicker. 9/24/19  
Response: Any problematic shadow flicker effects of the Project under actual operating conditions will be addressed through the Complaint Resolution process and mitigated case-by-case.
2. Joni Riggle 8/27/19
  - a. Comment on WHO Noise Guidelines  
Response: WHO Guidelines are not the standard for the Proposed Action but are predicted to be complied with at most receptors in the Project Area. The Proposed Action would reduce noise levels from the Project significantly as compared with the 2016-approved design.
  - b. Comment on alleged health effects.  
Response: See B. Health Effects.
  - c. Comment on infrasound.  
Response: See C. Infrasound.
  - d. Comment on shadow flicker.  
Response: Any problematic shadow flicker effects of the Project under actual operating conditions will be addressed through the Complaint Resolution process and mitigated case-by-case.
3. Samantha Davis (letter read by Evan Davis, RN at 9/4/19 Public Hearing).
4. Mark Twichell (same as verbal comments)
5. Robert McGraw
  - a. Comment on alleged long-term health effects.  
Response: See B. Health Effects.
  - b. Comment on impacts to eagles.  
Response: See expanded discussion of eagle impacts and Appendix N. to SDEIS.
  - c. Comment on impacts to cultural resources.  
Response: See Appendix M. to SDEIS, approved by NYSHPO.
6. Joe Ivory

- a. Comment: Vote no.  
Response: Comment noted.

7. Richard Ivory

- a. Comment: Vote no.  
Response: Comment noted.

8. Richard Lippes

- a. Comment: “I find it wholly inadequate to appropriately deal with the requirements of [SEQRA]....Instead of actually providing a study and hard look at the issues not previously appropriately considered as indicated by the Court, the SDEIS largely merely publishes the information contained in their previous EIS and SEIS, which were found inadequate. Indeed, the SDEIS regularly references those previous reports.  
Moreover, the SDEIS continues to persist in only using a baseline of the environmental effects of the increase in size, rather than the environmental effects using a proper baseline of 599-foot towers.”
- b. Response: First, the Court did not in fact find the “previous EIS and SEIS” inadequate. It was in these documents and associated studies and Findings that the Town Board as Lead Agency identified, took a hard look at, and provided a reasoned elaboration regarding all impacts associated with the Project as proposed and approved in 2016. This Project consisted of 29 turbines not higher than 495 feet in specific studied locations in the Towns of Villenova and Hanover. In 2018 only two Project modifications were proposed: to increase the total allowed height of the turbines to 599 feet in their previously approved locations, and to eliminate the previously approved 5.7 mile overhead high voltage transmission line and southern substation, to be replaced by approximately 5 miles of buried medium voltage circuit. In accordance with SEQRA the Full Environmental Assessment Form (FEAF) prepared for the 2018 Application regarding the modifications studied only the marginal potential impacts associated with such 2018 proposed modifications. These included visual, shadow flicker, noise, impacts on avian and threatened and endangered species, wetlands and ground clearing, among others. Of all these marginal potential impacts, the Court found that the Town’s 2018 Negative Declaration of Significant Adverse Environmental Impacts did not adequately address two potential impacts: it required a fuller elaboration of impacts associated with the undergrounding of the transmission line (“gentie”), and required elaboration of the effect on the 2016-identified eagle population posed by “the increase in height of the turbines” (not the existence of the turbines previously approved). By implication, Ball Hill Wind Energy was not directed to undertake a new investigation of all impacts associated with the 2018-proposed design changes, although in an abundance of concern for the thoroughness of the SDEIS, in fact ALL impacts associated with the 2018-proposed design

changes have been reviewed and elaborated in the SDEIS (with particular focus on the undergrounding and eagle impacts highlighted by the Court) necessitating reference to their previous appearance in the record, and the treatment of potential eagle impacts and mitigations has been significantly expanded in the Supplemental Final Environmental Impact Statement (SFEIS) in response to public comments.

Comment: “The adverse effects (of land-based wind towers other than those proposed herein) include, among other things, both loud noise and infrasound.... Also, all wind farms create “flicker”, which adversely affects the health of certain individuals. Windtowers have also adversely effected [sic] individual’s receptions for their cell phones, television and other communication and entertainment devises. All wind towers also cause both bird and bat deaths.... Finally, the adverse aesthetic effects of wind towers are apparent.”

Response: The potential impacts of the 2016-approved Project and 2018-proposed design modifications, including those noted in the Comment, have been thoroughly identified, studied and considered in the SEQRA record for the Project, and discussions thereof can be found in the SEIS, FEIS and SFEIS. With regard to alleged health effects and infrasound effects, please see B. Health Effects and C. Infrasound, above.