

**State of New Hampshire
Site Evaluation Committee
Docket Number 2012-01
Antrim Wind Energy, LLC**

Final Brief

North Branch Group of Intervenors

Richard Block
Loranne Carey Block
Robert Cleland
Annie Law
Elsa Voelcker

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SEC Docket #2012-01 — Final Brief

Richard Block, Lorraine Carey Block, Robert Cleland, Annie Law, and Elsa Voelcker, consolidated as the North Branch Group of Intervenors, assert that the industrial wind project consisting of ten 3MW turbines proposed by Antrim Wind Energy, LLC for installation on Tuttle Hill and Willard Mountain in the town of Antrim, New Hampshire would have a decidedly unreasonable adverse effect on aesthetics, air and water quality, the natural environment, and public health and safety; that it would unduly interfere with the orderly development of the region; and that the financial, technical, and managerial capability of the applicant is not at all adequate. Therefore, the North Branch Intervenors strongly urge the Site Evaluation Committee to deny a Certificate of Site and Facility in this case.

I. AESTHETICS

In order to approve a certificate for an energy facility, the New Hampshire Site Evaluation Committee, by the responsibilities assigned in RSA 162-H:16 IV(c), "...must find that the site and facility... will not have an unreasonable adverse effect on aesthetics...". Drawing from their educational backgrounds and professional experience in the arts and design, the North Branch Group of Intervenors assert that this project would have a

decidedly unreasonable adverse effect on the aesthetics of the North Branch area, the Town of Antrim, and the entire region.

It is not disputed that the Acciona AW 116/3000 wind turbines proposed by Antrim Wind Energy, LLC ("AWE"), at 492 feet in height, would be among the tallest turbines anywhere in the northeast if not the entire country. The Tuttle Hill ridge has an elevation rise of only 575 to 660 feet higher than the valley below along Route 9. Thus, the turbine height above the ridge top, rising from 75% to 85% of the height of the hill, would be far beyond any reasonable proportion for the area. Accordingly, these turbines are simply out of scale for this ridge. From roads on the north, west, and east that would be little over a half mile from the turbines, the appearance would be staggering.

The ten proposed turbines would be highly visible from a large percentage of the region, notwithstanding the claims of the applicant as to the screening effect of vegetative cover. Situated on the central focus hill of Antrim, common sense dictates that structures the height of 50-story skyscrapers would dwarf the ridge and dominate the area. This permanent alteration of the skyline of Antrim would have an unreasonably dramatic effect on the rural views for which the town has become known. Since the turbines on the Tuttle Hill/Willard Mountain ridgeline would be seen from many areas five to ten miles from Antrim, they would most certainly dominate the skyline as one approaches from either the east or the west. Traveling eastbound through Stoddard, the turbines would be a significant feature of the view from Route 9 (Exhibit AWE 3-09; page 47) and likewise when westbound

from Hillsborough (Exhibit PC-1; page 15). Although the developer claimed that only 57 acres of land would be disturbed by this project (transcript Antrim Hearing 4/30/12, page 54, lines 17-18), in actuality, the direct visual impact of the wind turbines would extend over far more than this area (Exhibit AWE 3-09; page 17 and Exhibit AWE 9-12) into locations in the towns of Stoddard, Windsor, Hancock, Nelson, Hillsborough, Washington, Harrisville, Bennington, and Deering, covering up to 300,000 acres (Exhibit PC-1; page 5, paragraph C).

The prime recreational assets of the town, Gregg Lake, Willard Pond, the Loveren Mill Cedar Swamp, and the North Branch River, are located in western Antrim. Gregg Lake is the site of the Town Beach, the most frequented recreational area in Antrim. All ten turbines would dominate the views from the beach, its picnic area, and the Town Boat Launch. Likewise, they would dominate the viewscape of the spectacular Willard Pond and the trails and peaks in the dePierrefeu-Willard Pond Wildlife Sanctuary. This popular gem is used year-round, not only by local residents but also by visitors from around the world. The Loveren Mill Cedar Swamp, located off Route 9 directly across from Tuttle Hill, is protected and maintained by The Nature Conservancy along with the Society for the Protection of New Hampshire Forests. The nature trails and boardwalk through the swamp as well as the adjacent North Branch River Shorebank Access, maintained by New Hampshire Fish & Game and U.S. Fish & Wildlife, are frequented by fishermen, families, conservationists, and school groups throughout the seasons. The proximity of industrial wind turbines only a few thousand feet from these recreational areas would seriously detract from the natural experience that has been available there. They would also be

clearly visible from the popular summit of Pitcher Mountain (Exhibit PC-1; page 13-14) that already has a view of the Lempster wind facility, creating a cumulative visual effect.

The North Branch Intervenors are particularly concerned about the issue of the aesthetic impact of the proposed wind turbine project because of its proximity to their homes and, since several conduct their businesses from home, their workplaces. On the site visit held in Antrim on April 30th, 2012, the Committee visited the Block property where the existing meteorological tower can be clearly seen on the top of Tuttle Hill which dominates the view of that property. The proposed wind turbines, being 2½ times that height, would be the most visible objects in the viewshed. This would also be the view from Annie Law and Robert Cleland's home as well as many of the higher elevation homes in the North Branch area on Loveren Mill, Liberty Farm, Stacy Hill, Farmstead, River, Salmon Brook, Reed Carr, Craig, and Keene Roads. It would be an injustice to deny the severe impact of adding these industrial towers to the natural scenery experienced by these residents for decades, most of whom settled in the North Branch area because of its scenic views and quiet ambience. The imposition of these industrial turbine structures as well as their intrusive night time lighting in their viewshed would seriously degrade the rural quality of their homes and negatively affect their aesthetic value.

The Vegetated Viewshed Map submitted as Figure 2 of the AWE Visual Impact Assessment (VIA) (Exhibit AWE 3-09; page 17) claims that this entire area would have almost no view of the turbines, but again common sense tells us that this can simply not be true.

Evidence that we cannot trust the visibility predictions claimed on the Viewshed Map is that it does not even agree with AWE's own photo simulations included later on in the VIA. For example, AWE's simulation of the view from Salmon Brook Road (Exhibit AWE 3-09; page 43) shows three turbines in the picture; the Viewshed Map claims none would be seen. The simulation of the view from the Flint Estate (Exhibit AWE 3-09; page 41) shows two turbines while the Viewshed Map claims that nine to ten should be visible.

These inconsistencies are supported by Richard Block's Supplemental Testimony which contains a photograph taken from the blueberry field on Windsor Mountain north of Tuttle Hill (Exhibit NB-7; page 5). It was included as an estimate of what the view of the project would be from there since no views from the north were included by the applicant. While not claiming exact photorealistic accuracy but with reasonable calculations based on the terrain and topographic maps, it shows at least seven turbines would be visible. However, the Viewshed Map claims only one or two could be seen (transcript Day 11 Afternoon, page 61, lines 14-20).

AWE's visual impact expert, John Guariglia, has repeatedly demonstrated incongruities and inconsistencies in both his written documents and oral testimony. The main document he authored is titled the "Visual Impact Assessment" (Exhibit AWE 3-09), yet on more than one occasion in his oral testimony he admitted to not studying the visual impact of the proposed project: "we didn't study the visual impact" and "we did not rate the impact" (transcript Day 5 Afternoon, page 30 line 23 and page 34 line 18) despite the title of

his work. In his Supplemental Prefiled Testimony, Mr. Guariglia responds to the question:

“Is it appropriate for a visual assessment to quantify visual impact?” by saying, “No....

Claiming a visual impact as either significant or not significant without a well-defined and repeatable methodology simply represents a personal opinion that is subject to interpretation by those who judge the quality of a view or degree of impact differently.” (Exhibit AWE 9-10; page 13, lines 18-19 and page 14, lines 2-5). However earlier in the same document, Mr. Guariglia concludes “the Project will not result in an unreasonable adverse impact to the aesthetics of the Antrim region” (Exhibit AWE 9-10; page 8, lines 8-9). Without studying or quantifying the visual impact of the proposed project, it is not possible nor is it credible for Mr. Guariglia to judge and render an opinion of its aesthetic impact.

Mr. Guariglia’s insistence, in both his oral and written testimonies, that only government-owned properties by definition have significance and thus more aesthetic value than conservation organization sanctuaries or preserves is asserted in his Prefiled Supplemental testimony:

“Resources of statewide significance are of greater aesthetic significance by virtue of their preservation by a governmental agency for benefit of the State’s citizens” (Exhibit AWE 9-10, page 15, lines 3-5). This assertion seriously affected his ability to fairly assess all of the aesthetic resources in and around Antrim. For example, Mr. Guariglia explained his failure to study the visual impact on Willard Pond in his oral testimony, saying, “We understand that Willard Pond and the surrounding area is not a statewide or designated resource” (transcript Day 5 Afternoon, page 31, lines 7-9). His denial of the importance of the Sanctuary at Willard Pond, New Hampshire Audubon’s largest property and one of its most treasured, illustrated

again in his testimony: “But it’s not a state park” (transcript Day 5 Afternoon, page 129, line 12), combined with his ignoring of any other aesthetic resources in Antrim, also raises great concern for the integrity and credibility of his Visual Impact Assessment.

The Shadow Flicker Technical Memorandum (Exhibit AWE 3-26) also downplays the potential problem of shadow flicker, by using arbitrarily delineated computer models to define the potential flicker zones. The “typical” shadow flicker pattern map (Exhibit AWE 3-26, page 10) is drawn with an arbitrarily drawn hard edged limit to the shadows, based on their assertion that the effects of shadow flicker are “negligible” beyond ten rotor diameters. Although the memorandum concedes there may be some effect beyond this distance, by applying an arbitrary cut-off on the map, any effects beyond that are simply ignored.

The applicant, through Mr. Guariglia, has consistently minimized the visual impact this project would have on Antrim. They claim that a forty-foot tree canopy covers the entire area and obscures any possible views of the project from 95% of the region. This claim is based on national forested cover data rather than field study. It does not take into account elevation changes or the effect of steep slopes. It also assumes that this forty-foot canopy is dense enough to obscure the view of anything overhead or at any distance, no matter what the season. As a result, the Viewshed Map claims that the wind turbines would not even be visible from the ridge on which they propose to erect them.

The reality is that Antrim has few areas covered by a dense forty-foot canopy, and that many places in the area are on hillsides or are cleared and have extensive distant views.

Higher elevations can result in sparse tree cover of less than twenty or thirty feet where there even is cover. Moreover, in the winter months without foliage the views can extend for many miles more than during the summer months. Furthermore, since the eye is attracted to movement, it should be apparent that ten 500-foot industrial towers, completely anomalous to the terrain and rising high above the highest hills, with spinning blades to capture one's attention, could never be hidden from sight or obscured by vegetation. The addition of these 50-story industrial turbines to the area will radically and irreparably alter Antrim's rural skyline, yet Mr. Guariglia's opinion is that we will get used to it: "Views of the Project may, at first appear in contrast with the unaltered landscape, but over time will become an integral part of the landscape" (Exhibit AWE 3-09, page 33). The North Branch Intervenors strongly disagree that they could ever adjust to these turbines as becoming "part of the landscape" given the disproportionate scale of this project along with the inappropriate character of these turbines in the natural setting on Tuttle Hill and Willard Mountain.

We strongly believe that proportional size of the turbine installation to the surrounding landscape is clearly a strong component to be examined in assessing the aesthetic appropriateness of a project to its site. Jean Vissering, in her testimony, agreed to that, stating that she considered the proportions of the Lempster turbines to Lempster Mountain to be a better ratio than that of the Antrim Wind proposal (transcript Day 7 Morning, page 49, lines 10-13), and therefore recommended using turbines that size in Antrim. However, Ms. Vissering erred in not accurately comparing these ridges and turbines.

Since Lempster Mountain has an elevation rise of approximately 1000 feet from the valley floor, the 400-foot turbines there are proportionally 40% of the rise. Whereas those proposed for Tuttle, at 492 feet over an elevation of 575 to 660 feet, have a proportional percentage of 75% to 85%, doubling the Lempster ratio. Even lowering the proposed turbine size to 400 feet as suggested by Ms. Vissering, would yield a ratio of 400 to 600, or 66%, again clearly more than she assumed. To achieve the 40% ratio she claimed more visually appealing in Lempster, would require turbines of around 240 feet.

Given the significant shortcomings and contradictions in the AWE VIA and in John Guariglia's testimonies, it is clear that the applicant has failed to demonstrate that the proposed wind turbine project will not have an unreasonable adverse effect on the aesthetics of the area. On the contrary, the North Branch Intervenors, with experience and professional expertise in aesthetics and visual studies, assert that there would be considerable disruption, degradation, and permanent negative alteration of the aesthetics of the entire region.

2. NATURAL ENVIRONMENT

In order to approve a certificate for an energy facility, the New Hampshire Site Evaluation Committee, by the responsibilities assigned in RSA 162-H:16 IV(c), "...must find

that the site and facility... will not have an unreasonable adverse effect on... the natural environment...”.

The North Branch Intervenors have grave concerns for the potential environmental impact of the proposed AWE project. To address these concerns, they engaged the services of Susan C. Morse of Morse and Morse Forestry and Wildlife Consultants and Keeping Track, Jericho, Vermont. Ms. Morse is an expert in wildlife ecology, natural history, and tracking with particular expertise in the identification of core habitat and large mammal activity.

The Tuttle/Willard ridge is located in a strategic connective corridor between the conserved and wild lands of Robb Reservoir/Rye Pond/Willard Pond in the south and the SPNHF Peirce Reservation in Stoddard to the north. Within a large unfragmented forest block of 12,994 acres, (Exhibit AWE 3-07, page 3), it is adjacent to the 33,000 acre Monadnock Supersanctuary. Over the last three decades the Society for the Protection of New Hampshire Forests, the Harris Center, New Hampshire Audubon, the Trust for Public Lands, the Nature Conservancy, and Sweetwater Trust have protected 40,000 acres of contiguously forested tracts in this immediate area (Exhibit ACC-2, page 39). Additionally, the Tuttle ridge is central to the Quabbin-to-Cardigan Corridor. This Corridor, an unprecedented interstate collaboration among 27 conservation agencies, designated this area as a core conservation focus in this hundred-mile long, two million acre region, encompassing one of the largest remaining areas of intact, interconnected, ecologically significant forest in New England (Exhibit NB-3, pages 39-41).

Through signs identified by Ms. Morse and local volunteers on two field days, the Tuttle/Willard ridge was found to be significant core habitat for moose, bear, coyote, and bobcat (transcript Day 10 Morning, page 31, lines 15-16 and Exhibit NB-4, pages 32-36). Repeatedly emphasizing that this is phenomenal core habitat (transcript Day 10 Morning, page 44, lines 14-23), Ms. Morse expressly defined the need to preserve connective core habitat: "Conservation scientists today recognize that habitat discontinuities collectively stress local species richness and resilience, as well as the functions and services of whole ecosystems. Throughout New Hampshire, New England, and worldwide, 'small incisions,' collectively diminish limited core and connective habitats, and as such, cumulatively compromise species diversity and resilience. Conservation scientists are in agreement that the preservation and restoration of core and connective habitats is crucial if we are to successfully endure the inevitable stresses that climate change will surely pose, severely challenging human and natural economies alike." (transcript Day 10 Morning, page 14, lines 5-20). She further discusses the importance of smaller ridgelines as core habitat that function as corridors because they are part of what we know to be connective habitat (transcript Day 10 Morning, page 42, lines 6-16).

Ms. Morse emphasizes that ridges in particular are travel routes for larger mammals and, as noted, this is a most important ridge as it connects significant core habitats to the north and south. The large boulders and talus slopes along the ridge from turbine areas six through ten provide not only exceptional denning areas but, as Ms. Morse noted both in her Prefiled Testimony and her oral testimony, this is an aesthetically exceptional area and

should be preserved: “I was really floored by how rugged it was, especially with the glacial features and the botanical features that nestle themselves in and amongst all that. And I was, as was the Applicant's consultant, I was also impressed with the diversity of forest community types and habitats that one could see up there in a relatively finite area. It's very special. It should become a park.” (transcript Day 10 Morning, page 37, lines 5-13)

While the applicant stresses that “only 6.4 acres of the project are highest-ranked biological habitat in the region” (transcript Day 10 Morning, page 88, lines 8-10), examination of the state's Wildlife Action Plan maps, “2010 Highest Ranked Wildlife Habitat by Ecological Condition” and “New Hampshire Wildlife Habitat Land Cover 2010” yields “Tier 1 Matrix Forest, Top-ranked in New Hampshire”; “Tier 2 Rocky ridge/talus slope, Top-ranked in biological region”; as well as “Supporting Landscapes” (Exhibit NB-4, pages 13 and 38). Trying to separate the mosaic that these integrated maps create is indicative of a lack of understanding of the complex relationship between the geographical features and the wildlife habitat. Isolating one specific habitat without noting the surrounding designations is simply an attempt to reduce the value of this important area.

The project area cannot be extracted from the large unfragmented forest block that it is part of without resulting in significant fragmentation. While the applicant again tries to minimize the fragmentation by claiming only 63 acres will initially be disturbed (Exhibit AWE 3-07, page 3), Ms. Morse insists that any slice will certainly have an effect despite the claims made by Mr. Valleau that “after project construction, the large blocks of habitat will

remain and it is unlikely that either species will be displaced to any significant degree by the project” (Exhibit AWE 9-44, page 13, lines 10-12). She maintains that “...all the little slices and cuts and fissures and cracks collectively add up and influence wildlife in ways that we're beginning to appreciate are significant and cumulative” (transcript Day 10 Morning, page 34, lines 9-13).

When challenged that the project would provide significant mitigation through its land conservation efforts, Ms. Morse repeatedly explained that, as a biologist and practitioner in the field, she is not a fan of mitigation: “It’s not appropriate to offer a bushel of apples to take the place of a bushel of potatoes. They are not the same thing. And as wonderful as these additional lands may be, I’m not convinced that they couldn’t otherwise be conserved in time.” (transcript Day 10 Morning, page 20, lines 18-23) Further on she adds that this “doesn’t alter the fact that this is core habitat and should not be intruded at all... it should not feature an industrial development of any kind.” (transcript Day 10 Morning, page 88, lines 23-24 and page 89, lines 1-3) The North Branch Intervenors agree with their expert witness, Susan Morse, that the Tuttle/Willard ridge area is far too valuable a natural resource and a far too important component of the contiguous and extensive unfragmented habitat in the entire region to develop industrially.

3. PUBLIC HEALTH & SAFETY

In order to approve a certificate for an energy facility, the New Hampshire Site Evaluation Committee, by the responsibilities assigned in RSA 162-H:16 IV(c), "...must find that the site and facility... will not have an unreasonable adverse effect on... public health and safety...". The North Branch Intervenors assert that the construction and operation of AWE's industrial wind turbine facility in the Rural Conservation Zone would unquestionably result in serious noise disturbance and health risks to many of the residents of the North Branch area of Antrim.

The North Branch Intervenors, with the assistance of several other intervenors, were able to employ the services of Mr. Richard R. James of E-Coustic Solutions, Okemos, Michigan as an expert witness on the subject of sound and noise issues. Mr. James is an acoustical engineer with particular expertise in the human response to wind turbine noise. His analysis of the sound studies performed in Antrim by both AWE's expert, Robert D. O'Neal of Epsilon Associates, and the expert retained by the Counsel for the Public, Gregory C. Tocci of Cavanaugh Tocci Associates, resulted in the conclusion that the ambient sound levels in the North Branch area as they currently exist are much lower than those predicted by Mr. O'Neal due to improper testing (transcript Day 8 Morning, pages 99-100 and Exhibit NB-1, pages 5-6).

Mr. James also finds that since the proposed wind turbine model, the Acciona AW 116/3000, is still in the manufacturing stage and has yet to be installed in a real-world

situation, the predicted sound data for it is based on projected computer models and therefore not as reliable as it would be had there been actual test figures available (transcript Day 4 Afternoon, page 127, lines 7-10). This, combined with the inflated ambient levels predicted by Mr. O'Neal, results in a model that underpredicts the sound levels that would be received on properties in the North Branch area for wind or weather and operating conditions commonly associated with complaints at other operating wind turbine facilities of sleep and vestibular disturbances associated with infra and low-frequency sounds (Exhibit NB-1, page 14). Mr. O'Neal's projections are thus not accurate as to what the residents of the North Branch area can expect to experience. Mr. James clearly states: "Despite the fact that they're framed as 'worst case,' they are not worst case. They are the best argument that the consultant can put forward for why a permit should be granted." (transcript Day 8 Morning, page 192, lines 12-16)

Moreover, Mr. O'Neal's confidence in the guaranteed maximum sound levels that will be emitted by the Acciona AW116/3000 is further discounted when one considers that the manufacturer's guaranty only applies to tests of the turbine under specific conditions. Mr. James explained: "In other words, the guaranty only applies to the test reproducibility, not to what happens when we relocate that turbine into other areas where wind, turbulence, topography and many other factors could increase it. And so the guaranty is not a guaranty that the sounds will never be excessive in Antrim. It is only that the particular turbine, if tested, again, on a test bed, would still have the same sound levels within plus or minus two of what the test data derived." (transcript Day 8 Morning, page 147, lines 4-15)

The North Branch Intervenors are also concerned about the effects noise generated by the proposed project would have on the natural and recreational resources of the entire area. Mr. O'Neal did not test ambient sound levels in the vicinity of the Willard Pond wildlife sanctuary, but Mr. Tocci did, and he concluded that there would be an audible 15 dB impact on the pond and its adjacent trails (Exhibit PC-5, page 20). This is significant, and Mr. James pointed out: "The point of being in a nature preserve is to listen to nature. The presence of wind turbine sounds that are 10 to 15 decibels louder than the nature sounds destroys the whole premise of why you want to be there... People don't take hikes in industrial parks." (transcript Day 8 Morning, page 144, lines 17-24)

Mr. James, and thus the North Branch Intervenors, are particularly concerned about the levels of infra and low-frequency sounds which could be expected to be experienced if this project is constructed. As stated, there is no real-world data yet for this model turbine. However it can be assumed that since the AW116/3000 is one of the largest models available, that in spite of Mr. O'Neal's claim that low frequency sounds are not an issue (transcript Day 4 Afternoon, page 128, lines 8-14), the infra and low-frequency energy generated by these larger turbines will be of sufficient levels to cause great concern. In their paper, *Low-frequency noise from large wind turbines*, Henrik Møller and Christian Sejer Pedersen (Exhibit NB-24, page 1) find that the larger the wind turbine, the more the sound energy shifts to the lower frequency range, which gives the appearance of a lower level of dBA because A-weighted filtering excludes much of the lower frequency energy. Mr. O'Neal errs in downplaying the low-frequency emissions of these larger turbines because he relies on only

the dBA measurements.

In his testimony, Mr. James described a client in Wisconsin who had to leave his home because 2.5 MW wind turbines, the nearest at 3300 feet, created sufficient low-frequency sound levels indoors as to make his house unliveable (transcript Day 8 Morning, page 141, line 20 through page 142, line 13). This home and the adjacent Shirley Wind project were the subject of a recent comprehensive post-construction study (transcript Day 8 Afternoon, page 63, lines 6-13) which conclusively demonstrated that the turbines were “saturating” the house from top floor to basement with infra-sound at levels high enough to cause serious health problems in those who lived there. Although the sound levels outside that home were routinely in the 32 to 33 dBA range from the wind turbine, the measured low-frequency sound indoors generally ranged at about 70 to 80 decibels.

Mr. James concluded in his prefiled testimony (Exhibit NB-1, page 14) that since the turbines proposed for Antrim are even larger than those of the Shirley Wind installation, we can expect even greater problems of not just high levels of annoyance from turbine noise, but the potential for serious health problems for a significant percentage of area residents, thus his finding that “the Project is not compatible with the Antrim community.” In his oral testimony, he stated: “But the real issue is, given this community, do the turbines belong there? And from what I have seen, the community will have a negative impact. And the negative impact will be extreme for all the people within 4500 feet. And that includes people on both sides of the ridge. To say, declare an eminent domain situation and buy everybody

up and add 25 percent to the value of their property just seems like uprooting an awful lot of people for a wind project that might have a happy home on another ridge elsewhere.”

(transcript Day 8 Morning, page 170, lines 3-15) Mr. James added that he believed that the installation of wind turbines “is a terrible imposition upon the whole premise that those who are there first have a priority. If wind turbines had been there and someone moved in, I think that's a whole different issue. But people have self-selected that community, and the newcomer is the wind turbine project. And the newcomer needs to accommodate the character of the community...” (transcript Day 8 Morning, page 165, lines 19-24 and page 166, lines 1-4)

Mr. James, in his prefiled testimony explains: “The purpose for determining the background sound level is to set a floor against which the new sounds are judged. When there is a difference between the pre-operational L_{90} for the quiet times at night and the sounds that would be expected from wind turbine operations of 10 dB or more it should be expected that the community will consider the new noise as ‘objectionable.’ Greater differences create higher levels of objection.” (Exhibit NB-1, page 4) For this reason, it is imperative that the “best-case scenario” figures are used to establish the base background sound levels, i.e., the quietest times of the day and year (or the L_{90} sound data.) Mr. O’Neal’s measured data is confusing as he presents us with “average”, “median”, “minimum” (Exhibit NB-57) and additionally, he failed to adjust his readings for certain transient background noises which should not be counted in the L_{90} results: “But, no, we did not make any corrections for insect noise in the data” (transcript Day 4 Afternoon, page 207, lines 13-14).

Mr. Tocci's findings, therefore are far more accurate as to establishing baseline background sound levels (Exhibit PC-5, page 20). His chart shows simply that the dBA impact of adding the turbine noise to various locations in Antrim will vary from 10 dBA to 15 dBA to 25 dBA. Observing Mr. James' statement that the addition of 10 dB or greater to the normal ambient sound levels will result in a high degree of annoyance, it is apparent that the modeled sound projections of the proposed wind turbine project will prove to be "highly objectionable" to quite a number of residents.

4. ORDERLY DEVELOPMENT OF THE REGION

In order to approve a certificate for an energy facility, the New Hampshire Site Evaluation Committee, by the responsibilities assigned in RSA 162-H:16 IV(a), "...must find that the site and facility... Will not unduly interfere with the orderly development of the region with due consideration having been given to the views of... municipal governing bodies". The North Branch Group of Intervenors assert that Antrim Wind Energy, LLC has consistently opposed the Zoning Ordinance and Master Plan of the Town of Antrim, has misled residents and town boards with confusing information, and has ignored concerns about potential property devaluation.

AWE's wind facility is proposed for the Rural Conservation District of Antrim. This zone, adopted by Town Meeting in 1989, was created "to protect, conserve and preserve the remote mountainous portions of Antrim from excessive development pressures and/or

activities that would be detrimental to the unique environmental characteristics and qualities of this district and detract from the peaceful enjoyment and tranquility that this district affords local residents” (Exhibit NB-3, pages 24-25). In 1990, this zone was extended to the northern town border with Windsor resulting in an area covering nearly half of the town. Again ratified by Town Meeting, this extension, as well as the original plan, decidedly demonstrate the conservation efforts of the town. In 2005, the Open Space Committee conducted a town-wide survey where 74% of the residents responded that the rural character of Antrim was its most significant asset. In 2006, the Open Space Report, which recommended permanent land conservation for west Antrim, was adopted by Town Meeting as part of Antrim’s Master Plan. Also at this time the town hosted a series of professionally conducted visioning sessions where Antrim citizens expressed, as their first priority, “for the town to pursue strategic conservation of open space based on the ‘Open Space Conservation Plan for Antrim’” (Exhibit NB-3, page 37). Antrim’s Master Plan thus stated as a goal to “Encourage the protection of open space in unfragmented forest lands, wildlife corridors, scenic and historic areas” (Exhibit APB-3). The citizens of Antrim have consistently placed high priority on preserving open space.

The town, during the last four years, has never sponsored an open educational forum to discuss the merits and faults of placing an industrial wind facility in Antrim’s Rural Conservation District. Throughout all the hearings regarding the met tower, residents were limited to discussion of only the met tower itself, without being permitted to address the issue of an industrial wind facility. This suppression of open debate created a highly

contentious situation. Despite the lack of open debate on the wind facility, the Selectmen signed both an operating agreement and a PILOT agreement without extensive research nor due consideration of the town's residents. Robert L. Edwards, in his Prefiled Testimony, describes the lack of further discussion before signing at the Selectmen's meeting of June 20th, 2012 (Exhibit EA-1).

Additionally, the Planning Board formed an Ad Hoc Committee that proposed a Large-Scale Wind Ordinance. While the developer maintains, and claimed at the time that "a NO vote was a YES vote for wind" and campaigned that position extensively (Exhibit EA-2 A), many people, including the North Branch Intervenors, vote against the proposed ordinance since they felt it was too permissive. Therefore, AWE's and the selectmen's claim that the town twice voted "for" industrial wind, is simply not accurate. These votes, although ambiguous, simply upheld the current zoning and continued to protect the Rural Conservation District, and were not referendums on the citizen's position on industrial wind.

The North Branch Intervenors, all of whom have lived in the Rural Conservation District for decades and have invested their life savings in their homes and real estate, are particularly concerned about potential property devaluation from the proposed industrial wind installation. AWE's expert on real estate issues, Matthew Magnusson, in his report, *Impact of the Lempster Wind Power Project on Local Residential Property Values* (Exhibit AWE 3-27), did not instill any confidence in us nor did it dispel any of the worries about devaluation. Mr. Magnusson's research (really just a compilation of recorded sales figures) involved many

homes which were not in the vicinity of the turbines; in fact, 91% of the 88 sales he tallied were of homes that were from 2 to 13 miles from the Lempster Wind Power Project. Since his studies omitted and discounted the significant number of Lempster homes in the vicinity of the turbines there which have been vacated while on the real estate market for quite some time apparently without interest from buyers, we are not assured that a similar situation will not happen in Antrim. If the applicant is so confident that real estate values in Antrim would not be degraded by the presence of a commercial wind facility in the Rural Conservation Zone, then they should feel there would be no risk for them to sign property value agreements with concerned neighbors.

5. FINANCIAL/TECHNICAL/MANAGERIAL CAPABILITIES

In order to approve a certificate for an energy facility, the New Hampshire Site Evaluation Committee, by the responsibilities assigned in RSA 162-H:16 IV(a), "...must find that the site and facility... Applicant has adequate financial, technical, and managerial capability to assure construction and operation of the facility...". The North Branch Group of Intervenors assert that Antrim Wind Energy, LLC (AWE) does not have the financial stability, the technical expertise, nor the managerial experience needed to properly take on a project of this magnitude, and that this lack of competence will result in a great detriment and financial burden for the Town and the people of Antrim.

AWE, in the form of its parent company Eolian Renewables, LLC, is a new, inexperienced entity, formed in 2009 for the purpose of making an application to the Town of Antrim to propose the establishment of a commercial-scale wind turbine facility on the ridge on Tuttle Hill. Prior to that, none of the principals of AWE had any significant experience in the planning, permitting, construction, or operation of wind turbine installations beyond a single 10KW turbine (transcript Day 1, page 97, lines 2-19). When they approached the Town of Antrim in early 2009 with a proposal for the Planning Board, they had no knowledge of the procedure for obtaining approvals for a construction project. The Planning Board informed them that in order to erect a meteorological (met) test tower they would need to apply to the Zoning Board of Adjustment (ZBA) for two variances since neither the use nor the height conformed with guidelines in Antrim's Zoning Ordinance.

On July 8th, 2009 AWE submitted an application for only one variance, for a height exception, to the ZBA (Exhibit NB-3, pages 14-16). A variance application must refer to the part of a zoning ordinance it seeks relief from, and it must include evidence why the granting of the variance would still satisfy five specific criteria specified by state law. State statutes are very clear that all five of the specified criteria must be satisfied in order to gain approval for a variance. AWE's application stated that it sought relief from the Small Wind Energy Systems article, although that article is very specific in its scope and the proposed met tower did not qualify to be considered under it. What was more troubling, however, was the careless treatment of the application by AWE, with partial sentences, sloppy responses, and the complete omission of the last two criteria. When questioned about this, Jack Kenworthy

admitted that he had never applied for a variance before that time (transcript SEC Docket #2011-02, June 1, 2011 – Public Hearing – Morning Session, page 94, lines 18-21).

Since that initial effort to by AWE, there have been numerous changes made and multiple approaches attempted to seek permitting for their proposal. The initial project proposal in 2009 was for six to eight 2MW turbines to be located only on Tuttle Hill. In spite of the many troubles and controversies generated by their lack of competency in seeking permitting, AWE has expanded its plans to encompass several times more area and more and larger turbines, still without ever having run a facility. The North Branch Intervenors, having been a party to all of the town- and state-level proceedings and court cases in this matter, assert that AWE has consistently demonstrated a lack of knowledge of procedures required to initiate and complete a construction project of the scale originally proposed and certainly not for a project as large as what is currently on the table.

There are a number of other areas which cause the North Branch Intervenors to have great concern. RSA 162-H:7 V(e) specifies that an application must “Describe in reasonable detail the applicant’s financial, technical, and managerial capability for construction and operation of the proposed facility.” RSA 162-H:10 III further assures that members of the public have access to the records and reports of the Committee. Many of the details of AWE’s financial status and capabilities have never been made available to the North Branch Intervenors nor to the public. Since the future of tax burdens upon residents of Antrim may be greatly affected by the soundness and stability of AWE’s finances, we are greatly concerned and do not have confidence that the approval of this project would result

in any financial benefit to the Town or people of Antrim and that it may indeed prove to be detrimental.

AWE has projected an average annual net capacity factor for this project at 37.5% to 40.5%. The North Branch Intervenors requested data which would support this claim, but none was forthcoming. Since our research shows the available wind resources for Antrim to be not particularly outstanding (Exhibit NB-17), and without any contradicting data provided by AWE, these figures seem very high when compared to published actual output capacities from around New England and the country. In his testimony, Mr. Kenworthy was questioned about how his prediction could compare with other facilities, and his response was that "I, personally, do not have knowledge of any specific facility in New England that has achieved these capacity factors..." (transcript Day 1, page 103, lines 18-20). One of the highest output levels in New England is generally achieved by the Mars Hill facility at 32% to 33% with what has been described as "uniquely favorable winds"; the overall average production in Maine last year was 24.7%. The North Branch Intervenors question how we and the Committee can believe that a brand new company with no managerial or technical history can achieve a level of production output that far exceeds that of any other established commercial wind turbine facility in the northeast, including those operated by corporations with significant experience in the industry, given the unexceptional wind conditions in Antrim, and the lack of provable capability of the principals involved.

6. AIR & WATER QUALITY

In order to approve a certificate for an energy facility, the New Hampshire Site Evaluation Committee, by the responsibilities assigned in RSA 162-H:16 IV(c), "...must find that the site and facility... will not have an unreasonable adverse effect on... air and water quality...". The North Branch Intervenors have serious concerns about the potential for negative effects on Antrim's water resources caused by AWE's proposed wind turbine facility.

The Blocks have both been actively involved in the monitoring and protection of the North Branch and Contoocook Rivers. Richard served on the River Protection Nominating Committee from 1989 until the rivers' designation as protected under RSA 483:15, the New Hampshire Rivers Management and Protection Program in 1991, and then for many years on the Contoocook and North Branch Rivers Local Advisory Committee until Lorraine succeeded him in that position. The North Branch River Corridor also achieved a unique distinction in 1995 when it was one of the very few rivers in the state to be recognized by the National Park Service when it was listed on the Nationwide Rivers Inventory (Exhibit NB-3, page 5).

The Loveren Mill Atlantic White Cedar Swamp, home to a rare 4,000 year old wetland considered the highest quality boreal cedar swamp in New Hampshire, drains into the North Branch River from the north. Its boreal nature is due to its relatively high 1083-foot elevation and the surrounding hills which funnel cold air to the site. The North Branch Intervenors are most concerned that the siting of 500-foot wind turbines less than a mile

from this unique natural feature could result in generated turbulence which would disrupt the air quality of the site and negatively affect the delicate balance which has sustained this habitat for four millennia. They urge further study before permitting this project.

Willard Pond, one of the most pristine and unspoiled bodies of water in southern New Hampshire, is located within the 1700-acre dePierrefeu-Willard Pond Wildlife Sanctuary, New Hampshire Audubon's largest property, which abuts the southern part of the proposed project. To the east of the project lies Gregg Lake. Although partially surrounded by year-round and seasonal homes, as well as a major Girl Scout Camp, the lake and its beach, picnic area, and boat launch is a focal point for recreational activities and the quality of the water is consistently high.

Since the northern part of the proposed project, its access road, and the large concrete foundations for the turbines would be located directly above the North Branch River, and since there thus exists the possibility of increased run-off from that facility, the North Branch Intervenors are very concerned about the potential for negative impact on the River. The central and southern portions of the project would directly drain into Willard Pond and Gregg Lake and likewise raise serious concerns. Also troubling is the worry of chemical contamination associated with blasting activities during construction.

7. **CONCLUSION**

In conclusion we ask that the Committee deny this Certificate since the harm it would to the aesthetics, the natural environment, and the health and safety of New Hampshire citizens would far outweigh any benefit of producing energy that would not be used in the state.

Respectfully submitted this 14th day of January, 2012 by the North Branch Group of Intervenors, through their spokesperson,

A handwritten signature in black ink, appearing to be 'Richard Block', written over a horizontal line.

Richard Block

SPECIAL CONDITIONS

If the Committee decides to Certificate this project, the North Branch Intervenors request that a Property Value Guarantee be offered to each landowner whose residence will be directly and negatively affected by the installation and operation of Antrim Wind Energy's industrial turbine facility, so that the per-construction full market value of homes can be realized if the landowner desires to sell and vacate.