October 2012

Ms. Jane Murray, Secretary
Site Evaluation Committee
Department of Environmental Services
29 Hazen Drive, Box 95
Concord, NH 03302-0095

Dear Ms. Murray: Re: Antrim Wind Energy Proposal, Docket 2012-01

Please find the following concerns that the Stoddard Conservation Commission would like to submit for the SEC review process.

The first of these is the safety of drivers heading east-bound on Route 9 through Stoddard. Vehicles traveling east on Route 9, our main road, will face these giant structures directly at many points. Drivers will be distracted, and every morning they will encounter flickering sunlight, from the rotating blades. This pattern of bright sunlight and darkness is potentially a much worse safety hazard than the well-known hazard of low, but constant, sun angles. The rapidly moving patterns of light and dark on the road and surrounding vegetation would merely add another significant driving distraction. We know of no study of the impact of these potential safety hazards on the accident rate on a 55 mph highway. The nighttime strobe lights (also shining directly in the face of east-bound drivers) are another factor requiring careful study prior to any approval. Would DOT allow such a strobe light on a 55 mph highway?? There was an article in the 6 September 2012 Union Leader (D16) about Holland, "In Land of Windmills, Province Moves to Ban Turbines". The article pointed out "Turbines cause noise pollution, he added, saying that sunlight flickering through turbine blades could also be a distracting hazard for drivers". And this in a country "famous for its windmills for centuries".

Our Town has engaged in a costly and ongoing effort to preserve and enhance the value of Stoddard real estate. We have wildlife in abundance, animals, birds and fish, all of which are here because Stoddard long ago decided to be a rural, recreational, residential community. Our Master Plan states that as its first Objective. In order to determine whether, and to what extent, the visual and aural effects of these proposed windmills will reduce the value of properties in Stoddard (for which our Town will receive no tax benefit) we require maps of the areas, and the homes, affected. These maps should include the areas affected by the sight of the windmills, the sounds of the blades, the intermittent flashing of sunlight and moonlight off and through the blades, the roads which will have flashing, and rapidly moving, light and shadows, and the areas which will be subject to reflections of sunlight and moonlight off the blades. All these factors

directly affect potential Real Estate devaluations, both on individual parcels, and also on the potential loss to the Town's reputation as a vacation spot.

Finally, we cannot find any discussion of the question of the "ducting" of sound from these turbines. It appears that the noise question has been addressed, but as a general problem. Noise however, is a very special problem, since the same equipment, generating the same level of noise, can affect widely different areas depending on the stability of the atmosphere. In unstable air noise is dissipated over relatively short distances from its source. However, in stable air, this same noise carries much longer distances from its source. In very stable air the atmosphere creates "ducts", or channels running along at ground level, and which have the effect of propagating the noise over very long distances from its source. Unfortunately, the situations in which ducting is most likely is at night, and it appears from the AWE material that the strongest winds (loudest noises) are at night. Combining the occurrence of relatively frequent nighttime ducting with the times of highest winds (loudest noise levels), and then combining these with the low (nighttime) ambient noise levels, suggests a high probability of frequent noisy nights in our Town. We can additionally suggest that the question of additional noise production due to unusual wind shear under "ducting" conditions is apparently still unresolved, and its contribution to the propagation of noise is apparently unknown.

Since the wind data collected by AWE is unavailable, there is no way of knowing the answers to these outstanding questions. The use of LIDAR to extend the wind data to the height of the blades needs to be explained, since its use is relatively new. Have the LIDAR calculated winds been compared with those from the meteorological tower, and are the heights for which the winds are so measured known well enough to be usable for answering the questions noted above?

Respectfully submitted,

Geoffrey T. Jones, chair
Stoddard Conservation Commission