28 March 2013

Ms. Jane Murray
New Hampshire Site Evaluation Committee
N. H. Department of Environmental Services
29 Hazen Drive
Concord, NH 03302-0095

Re: Docket No. 2013-01, SEC Public Meeting

I wish to address two separate issues in the above-referenced matter. The first is the omission of the meteorological event(s) which will produce, and broadcast, the "worst case noise", while the second is the serious problems with wind energy generation and transmission due to the special meteorology and topography of New Hampshire. The first appears to have been completely overlooked, while the second is the driver behind the public furor over unsightly giant structures on our viewscapes.

A quick perusal of the Word Indexes from the weeks of hearings this fall reveals dozens of references to the phrase "worst case", as in "worst case noise". Since both the production and broadcast of noise from windmills is a direct function of the meteorology at the site, it follows that the "worst case noises" will be produced by a few, or a single, "worst case weather events". Yet there was no effort by Antrim Wind to determine what these (or this) "worst case weather" events are. This is no minor omission. If the "worst case weather" is made up of only a few (or one) weather events, then its deleterious effect must necessarily fall heavily, and regularly, on very particular neighbors. Without knowing what the weather event(s) is, and the frequency with which it/they occurs, there is no way that such a determination can be made.

Stating the obvious. Windmills, their siting and their electric production are METEOROLOGICAL problems. They depend on the wind to produce electricity. But additional meteorological factors go into the determination of their noise output. And even more meteorological factors determine the extent, and the distance, to which this noise will be broadcast to its neighbors. To date, I am not aware that any windmill petitioner in New Hampshire has determined either the "worst case noise output", or the "worst case broadcast of this noise", because nobody has determined what constitutes the "worst case weather".

Models developed using average or typical meteorological data can be used to determine these effects, but only PROVIDED that the meteorological factors are not correlated with each other in time. Elementary meteorology, and testimony at the hearings, screamed about the very high correlation between them, and should have brought the appellant up short. As a minimum, we now know that the "worst case weather" will occur in winter, at night, when the wind speeds at the turbine height are the highest, when the wind shear on the blades is high due to low winds at lower levels, when the atmosphere is stable, and when the ambient noise is at a minimum. A less frequent, but additional factor is the occurrence of a snow cover with an ice sheet on top. The complete disregard for the correlation of these factors should not be allowed.

The second important point of interest is the effect of the special meteorology and topography of New Hampshire on wind turbines in general, on their siting, and on their effect on our environment. The meteorology and topography of New Hampshire are unique and highly interrelated, and make comparisons with wind farms in other states nearly impossible. New Hampshire is unique in its propensity for hills and mountains and rivers, and their beautiful viewscapes. In addition, the reason most people come to New Hampshire to live, or visit, or hike, is these beautiful viewscapes. But the meteorology of wind farms in a countryside of hills and valleys is such that the windmills need to be sited on places with persistent, and high, winds. The only places in New Hampshire for wind farms are the tops of the hills, mountains and ridges. It can be said that if a potential site for

a wind farm canNOT be seen from the road, it is UNsuitable. If it can be seen from the road, it's a great site for a windmill! There are few exceptions to this rule in New Hampshire. The inescapable conclusion to be drawn from these truisms is that New Hampshire is essentially unsuitable for any significant wind farm development! That is, unless we change our name from the "Granite State" to the "Windmill State" because that's what visitors will see. Wind power in New Hampshire inevitably means giant windmills everywhere you look, drive or hike.

An additional concern is that the legislature decided to separate the issues of the production of electrical energy by windmills from the transmission of electric energy over long distances. Windmills by design must be sited in rural areas. Note the SEC decision over the effects of AWE on a nearby population. It was also noted that windmill siting requires easy access to high-voltage transmission lines for their output to be usable. This ensures that the aesthetics of their siting will be proximate to these high-voltage lines. The legal ramification of such co-location is that big structures (windmills and transmission towers) will beget more, and bigger, structures. Once a permit is granted for either a wind farm or a high-voltage transmission line, any aesthetic considerations against the other become moot.

Do we want to trade our tourist business, let alone our way of life, for a tiny decrease in our carbon emissions?

As a meteorologist of long experience, I am willing to assist the SEC, at no charge, in evaluating wind proposals for their prospective noise production.

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