



Industrial Wind Action Group

facts, analysis, exposure of wind energy's real impacts

December 19, 2007

Ms. Robin Clukey
Project Manager
Maine Department of Environmental Protection
106 Hogan Road
Bangor, Maine 04401

Re: **Mars Hill Wind Farm MEDEP Order No. L-21635-26-A-N Sound Assessment Comments**

Dear Ms. Clukey:

First, I wish to express our thanks to the Maine Department of Environmental Protection (DEP) for its efforts in trying to assess the noise problem at the Mars Hill wind energy facility. Energy policymakers, siting boards, stakeholders, and the public are closely watching the actions of Maine DEP as there is a general concern that turbine noise is not unique to this project.

I represent Industrial Wind Action Group (www.windaction.org), a national organization focused on raising awareness of the negative impacts of utility-scale wind if sited improperly. In this capacity, our organization closely monitors wind energy proposals, development, and post-construction performance and attendant impacts. We have been monitoring the situation at Mars Hill since December 2006 when initial reports surfaced that residents near the site were experiencing turbine noise. The purpose of this letter is to provide our comments on the status of your review thus far.

Status reports filed with Maine DEP and publicly available:

- 1) **December 2003:** UPC Wind Management, LLC, (Evergreen Wind Power, LLC) prepared sound level model estimates developed by RSE and included these estimates with the permit application submitted to DEP.
- 2) **December 2006:** Mars Hill wind turbines are started (but not commercially on-line). Noise complaints ensue.
- 3) **May 2007:** UPC Wind Management initiated a sound level study to determine the ambient and operating sound levels in the area of the wind farm. The sound study was also conducted by RSE and the report submitted to DEP in June 2007 by Dave Cowan, VP of UPC Wind Management.
- 4) **July 2007:** Mountain Landowners Association submitted a report that critiqued UPC Wind's post-construction sound level report. This report was prepared by Mr. Richard Bolton of Environmental Compliance Alliance.
- 5) **November 2007:** Warren L. Brown of EnRad Consulting, peer reviewed the studies mentioned above and submitted his finding to DEP.

Limitations in Preconstruction Modeling

The Bolton and Brown reports stated that while the CADNA/A software was suitable for evaluating ground-based noise sources, "increased operations sound pressure levels above the predictive model may occur" due to the Mars Hill predominant wind directions, the hub level to surface wind potential disparities, as well as increased atmospheric refraction above the predictive model [BROWN, page 4]. Bolton further stated that the CADNA/A modeling software does not appropriately account for the refraction and reflection effects of the sound.

Given the limitations of the CADNA/A modeling software as cited above, and further detailed in the Bolton report, we question how Maine DEP justified its confidence level in the preconstruction predictive sound levels.

On pages 26 and 27 of his report, Mr. Bolton recommends that other software be utilized to properly model the noise at the site. He further describes a process that could raise your confidence in the predicted noise levels. We believe it would have been helpful in your assessment of the noise levels to have some certification by the noise analyst that the modeling software used does model the environmental conditions appropriately and to what extent.

Flawed Methodology in collecting post-construction sound levels

The Maine DEP granted UPC Wind Management a variance to include sound measurements taken in winds above 12 mph without securing assurances that the meter instrumentation would accurately record true background sounds and not wind-induced instrumentation error. Both the Bolton and Brown reports highlight the fact that inappropriate microphone shielding apparatus was used during the May 2007 field monitoring. We respect that measuring ambient noise in a rural setting might be new to RSE. Still, the corrective measures should have utilized and/or the Maine DEP notified of possible problems of methodology.

Brown states “Ambient and operation sounds measured at high wind speeds (>12 mph) may produce non-noise artifact lessening the integrity of measured data. This confounding element can lead to false conclusions regarding ambient and operation sound levels.” [BROWN, page 9]

Bolton and Brown further state that UPC Wind Management failed to collect site-specific wind speed and direction conditions that would “impact operating sound level, tonality, and short duration repetitive sound measurement accuracy.” [BROWN, page 7]

Although Mr. Cowan’s letter of June 21 states “The Wind Farm does not generate short duration repetitive sounds as described in applicable regulations,” Brown provides this finding: “...actual operating condition tonality and a short duration repetitive sound has not been ruled out by measurement given potential wind interference uncertainty.”

Additional field study needed.

Given the limitations of the modeling software and the flawed methodology utilized in collecting post-construction sound levels, it is difficult for us to reconcile Mr. Cowan’s statement in his letter that “Sound levels measured during moderate to full operation of the Wind Farm were generally consistent with the 2003 sound level estimates.” The analyses provided by Bolton and Brown suggest the predictive sound levels and actual sound levels collected in May are suspect and that any consistency between the two sets of data is not supportable. Both Bolton and Brown recommend that DEP ensure UPC Wind Management correct the obvious errors and that further noise measurements be conducted. We strongly concur with this recommendation.

It is our understanding from Mr. Cowan’s letter that UPC has, or will be, conducting further studies. His letter of June 21 states “In order to develop a more comprehensive assessment of the wind farm’s operating sound environment, UPC Wind proposes to engage RSE to conduct three additional rounds of voluntary compliance monitoring to be conducted on a quarterly basis, to complete a total of four rounds of monitoring over an annual period. The next round would occur in August 2007, with two subsequent rounds at approximately three-month intervals (i.e. November 2007 and February 2008).”

While we applaud UPC Wind’s willingness to volunteer and take more measurements, such measurements would be inconclusive and of little value if corrective actions are not imposed on the developer by Maine DEP. Given the errors in methodology thus far, we respectfully ask that Maine DEP consider engaging its own third-party noise consultant at UPC Wind’s expense.

We do take issue with one statement in Mr. Brown's report. On page 8, he states "It is the opinion of the reviewer [Brown] that this initial assessment of the project indicates substantial compliance, but requires further measurement technique refinement with additional measurements to fully demonstrate results that are reasonable and technically correct according to standard engineering practices and the Department Regulations on Control of Noise (06-096 CMR 375.10) with operational noise limits set forth in the Control of Noise rules and the variance given in Department Order L-21635-26-A-N/L-21365-TG-B-N, dated June 1, 2004." Given the flaws and limitations that he and Bolton cited regarding the pre- and post-construction studies, we ask for further clarification on what Mr. Brown means by "initial assessment of the project indicates *substantial compliance*".

Thank you for taking the time to read and consider our comments. While we respect the fact that the noise problems at the Mars Hill wind farm are specific to Maine, others throughout the country are looking to the Maine DEP to provide an honest and thorough assessment of the situation. In this regard, we consider time to be of the essence. No one wants a repeat of the Mars Hill problems in their community or State.

We look forward to your response.

Respectfully,



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cc: Andrew Fisk – Director, Bureau of Land and Water Quality (MEDEP)
Nick Archer – Regional Director, Presque Isle Regional Office (MEDEP)
Dave Cowan – VP Environmental Affairs, UPC Wind Management
Wendy Todd – Mountain Landowners Association
Warren Brown – EnRad Consulting
Richard Bolton – Environmental Compliance Alliance