



# Kingston Board of Health

26 EVERGREEN STREET  
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## **ORDER FOR ABATEMENT OF NUISANCE** **G.L. c. 111, §§122, 123, 124**

Property: 8 Cranberry Road Map75 Lot 11  
Project Owner: Kingston Wind Independence, LLC (KWI)  
Date: August 11, 2014

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On August 11, 2014, the Board of Health (the "Board") held a hearing to determine whether to order the abatement of a nuisance related to the operation of a wind turbine located on the above-referenced Property and more commonly known as the Independence. The issue before the Board is whether the turbine's operation violates the regulations, policies and standards of the Massachusetts Department of Environmental Protection (DEP) with respect to noise impacts. Based upon available information before it, the Board finds as follows:

1. KWI leases the Property from the Town of Kingston for the purposes of operating the turbine.
2. The Independence is a Hyundai HQ2000-86 2.0 megawatt wind turbine that received Site Plan Approval from the Kingston Planning Board on June 28, 2010. The turbine became operational in or about January of 2012.
3. After it commenced operations, the Board (and other Town officials) began to receive complaints with respect to the noise generated by the turbine.
4. After receiving such complaints and discussing the same at a variety of meetings, the Board sought and received the assistance of the DEP in order to obtain the data necessary to determine whether the turbine generates noise in excess of DEP's regulations, policies and standards.
5. The DEP, in turn, worked with the Massachusetts Clean Energy Center (CEC) and a noise consultant Harris, Miller, Miller & Hanson, Inc. (HMMH) to conduct a study of the noise caused by the turbine. KWI cooperated with the study but disagrees with the methodology employed by DEP. The Board defers to DEP in the development of the appropriate methodology.

6. On June 13, 2014, HMMH issued a Technical Memorandum which presented an interim report that discussed noise impacts. In a letter to the Board, dated July 8, 2014, DEP summarized its position with respect to HMMH's interim report.
7. HMMH's interim report was presented to the Board in an open public meeting on July 24, 2004. Representatives from DEP, CEC and HMMH presented the interim report and answered questions by the Board, other Town officials, members of the public and Town Counsel.
8. As detailed in the HMMH interim report, the wind turbine generates noise in excess of DEP Regulations, Standards and policies. Such exceedances occur only during certain night-time hours when the ambient noise level is lowest; and when wind is blowing in a certain direction; and when wind is in excess of certain wind speeds at the turbine's hub.
9. Pursuant to such public meeting, the Board scheduled a hearing to review additional information that may enable it to determine whether an Order for Abatement should be issued.
10. So as to assist the Board, the Chair of the Board, other Town officials, representatives of DEP, CEC and HMMH, Town Counsel and representatives of KWI engaged in a series of telephonic and email communications so as to discuss the HMMH report and develop a mitigation plan.
11. A draft Order was prepared by Town Counsel and circulated among said parties. Comments and revisions were offered, which the Board took into consideration in arriving at this final Order. KWI has represented that it does not consent to this Order.
12. Based upon the HMMH Report, the information gleaned during subsequent communications, and evidence submitted at its public hearing, the Board finds that KWI's turbine does produce noise in excess of DEP Regulations, Standards and Policies. The Board further finds that such noise impacts constitutes a nuisance that poses a threat to the health, safety and welfare of nearby residents. The Board further finds that this Order for Abatement is necessary to mitigate such nuisance.
13. In particular, the Board finds that:
  - a. Between the hours of 12:00 a.m. and 4:00 a.m., with wind travelling from South and South/Southwest directions at speeds in excess of 8 meters per second at the turbine hub, the turbine generates noise at excessive levels. While the Interim Report of HMMH did not document exceedances before 1:00 a.m. or after 3:15 a.m., traffic data was analyzed to determine that the low number of cars on Route 3, which would

result in a lower ambient noise level, exists between 12:00 a.m. and 4:00 a.m., at least.

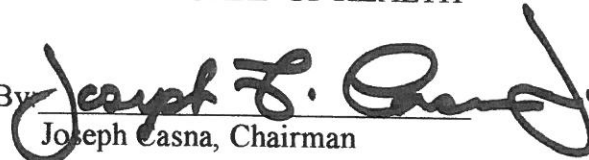
- b. While HMMH did not conduct its study in summer months when ambient noise may be higher and noise buffering may be more evident due to leaf cover, both HMMH and DEP representatives reasoned that excessive levels would likely be evident throughout the year.
  - c. The Board finds that, based upon representations of HMMH, the turbine may generate excessive noise at lower wind speeds. However, there is a sufficient amount of uncertainty to rely upon such representation before the Final Report is issued.
14. Accordingly, the Board finds and orders that noise abatement must be undertaken by KWI from 12:00 – 4:00 a.m., twelve months a year when wind is blowing from a South or South/Southwest direction in excess of 8 meters per second at the turbine hub.
15. Abatement may take the form of a complete shut-down of the turbine during such hours or KWI may employ a low-noise mode (no greater than a Rotor RPM of 16.0) that slows the turbine during such hours and conditions. In the event that KWI is unable to regulate the turbine based upon wind speed and/or direction, it shall either shut or *slow* the turbine down during all wind conditions during the hours specified above.
16. In the event that KWI employs a *low noise mode* to comply with this Order, KWI must conduct a noise study within 90 days of the implementation of such measures so as to confirm that the turbine is in compliance with DEP regulations, standards and policies. Such study shall perform noise sampling in accordance with DEP protocol. A copy of such study shall be provided to the Board and DEP and the Board may, upon its own initiative, amend this order if the results of such study requires either additional or decreased mitigation.
17. In all respects, KWI shall provide the Board with logs, data and any other records on a monthly basis to determine compliance with the terms of this Order. KWI has represented that it will implement the low noise mode utilizing SCADA software provided by American Superconductor (AMSC). KWI will maintain 10-min average SCADA records for maximum RPM and power (kW) showing that the functionality is in effect. Such records shall be provided to the Board monthly. Failure to provide adequate data may be grounds for an order for a complete shut-down of the turbine.

18. Upon reasonable notice, KWI shall cooperate with the Board and/or DEP, or their consultants in the collection of additional noise measurements to determine compliance with this Order.
19. Notwithstanding the foregoing, the Board recognizes that HMMH's final report may present additional findings that warrant either greater or lesser mitigation. Upon receipt of such final comprehensive report by HMMH, the Board may, at its own initiative, reopen its hearing in order to consider whether a modification to this Order is warranted.
20. Notwithstanding the foregoing, the Board recognizes that additional testing may assist in a more exacting Order. A more exacting Order will ensure the public's safety while preserving the economic viability of KWI's turbine which provides valuable renewable energy in an environmentally conscious manner. For example, testing throughout the year may show variances with respect to ambient noise levels as well as noise produced by the turbine. Additionally, testing at higher wind speeds or in rainy conditions may reveal a higher ambient noise level which would offset noise generated by the turbine. Accordingly, the Board will re-open its hearing and consider a request by KWI to modify this Order, provided that such Request is accompanied by a reliable noise study prepared in accordance with standards that shall be established by the DEP, in collaboration with CEC, HMMH or any other consulting experts, as may be deemed necessary.
21. This Order shall take effect upon service upon KWI, in compliance with G.L. c. 111, §124.

Upon Motion, duly seconded, the Board accepted and endorsed this Order on a 4-1 vote, with members Casna, Kavol, Watson and Cushman voting in favor and member Breen opposed.

KINGSTON BOARD OF HEALTH

By

  
Joseph Casna, Chairman