

# Wellfleet Wind Turbine Project - Status Report - 1/20/10

## Issued by the Wellfleet Energy Committee

Based on its own investigation, and with consideration of input from the wider community, the Wellfleet Energy Committee (WEC) has identified five categories of evaluation relating to the Wellfleet Wind Turbine Project:

1. **Environmental.** Does the project satisfy all environmental requirements?
2. **Human Health and Safety.** Is the project reasonable in terms of human health and safety?
3. **Legal.** Does the project comply with all local, state, and federal regulatory requirements? Can it reasonably be expected to satisfy the requirements for the Special Permit from the Wellfleet Planning Board?
4. **Appropriateness and Local Impact.** Is the facility “appropriate” for the proposed location?
5. **Financial.** Is the project self-supporting and at what level can it reasonably be projected to provide net revenue to the Town?

The WEC provides this report to reflect the status of the project in terms of the above criteria as of this date.

### Environmental Criteria

It is expected that the Town will soon issue a Request for Proposal (RFP) the environmental assessment task that was funded by the Special Town Meeting vote in October, 2009. The assessment will include an inventory of existing flora and fauna, populations of migratory and year-round species, and possible construction and operational mitigation measures that may be prudent.

With the recent completion of the site survey, the Town’s notification under the Mass Endangered Species Act (MESA) is expected to be submitted shortly. It’s estimated that less than five acres of the 220 acre parcel will be affected by construction and the access road.

The WEC believes the environmental benefits of the wind turbine are clear and substantial. To quote from the Executive Office of Environmental Affairs:

The Commonwealth is almost entirely dependent on out-of-region fossil fuel sources for its energy needs – electricity, heating, cooling, transportation, etc. That dependence reduces our energy security and makes us vulnerable to fluctuating markets, price spikes and international instability. Our use of fossil fuels also contributes to local and regional air pollution as well as to climate change. Along with vastly increasing energy efficiency [...], increasing local sources of renewable energy is critical to reducing our dependence on fossil fuels, increasing our energy security, saving on energy costs, reducing environmental impacts, and seizing green economic opportunities.

The WEC estimates that the proposed turbine would produce enough electricity to fulfill the Town's municipal use plus the needs of about 500 year-round residences. Yearly it would reduce SO<sub>2</sub> pollutants by about 15 tons, NO<sub>x</sub> by 4.5 tons, and CO<sub>2</sub> emissions by 3,200 tons.

### **Human Health and Safety Criteria**

The Acoustic Analysis of the proposed single turbine facility was recently completed by Tech Environmental of Waltham, MA, and certified by Peter H. Guldberg, Acoustic Consultant. The results are summarized by the following text taken from the executive summary (the full study is now posted on the Wellfleet Wind Turbine section of the Town web site):

“The Project will be audible at certain times in the residential areas next to the project area. The ‘swishing’ sound characteristic of a wind turbine will be audible outdoors when these three conditions all occur: 1) the residential area is downwind of the wind turbine, 2) ambient sound levels are low (usually late at night with calm surface winds), and 3) wind speeds at the hub height of the turbine are high enough for wind turbine operation. Project sounds will not be audible inside any residence.”

Additionally, concerning “low frequency” sounds that might cause vibration inside a residence, the report states:

... very low frequency sound from the wind turbine will not be audible at the nearest residences or at White Crest Beach and there will be no perceptible infrasound. The project will not cause vibration effects inside residences.

The Committee believes that the audible impact of the turbine will prove to be minimal – certainly well below state regulatory requirements. According to the study, the turbine sound would seldom be heard over the background noise level when there is sufficient wind to operate the turbine. The Committee plans to assess the actual human experience of the expected low level of acoustic impact by visiting similar turbine installations in the area (especially the Falmouth turbine).

A flicker study was completed in April, 2009. The results of the study indicate that a few areas east of Ocean View Drive would be affected by flicker for a few hours a year. The Committee believes that for most if not all residences to the east of Ocean View Drive, the potential flicker impact would be mitigated by existing trees or other plantings, as the main direction of view is to the Atlantic Ocean to the east. The Committee plans to examine specific residences that might experience flicker more closely in the future to determine the extent of current horticultural and topographical mitigation and to gauge potential future mitigation needs.

The Committee does not believe that the proposed facility would represent unusual fire risk, nor would the risk of catastrophic collapse or other failure be so great as to constitute a fatal flaw in terms of human safety. The Committee plans to investigate the fire, failure, and accident rates of the two turbine models identified in the feasibility study. Additionally, the Committee does not believe that the inert concrete foundation of the unit would adversely affect the groundwater or other natural resources of the area, nor would the semi-permeable access road create adverse 'run-off' effects. As part of the design process, a "geotechnical" analysis of the site would provide data to support a site-specific foundation design for the turbine appropriate for the soil and groundwater conditions of the site.

Examples of adverse human impacts of other facilities which are not comparable in terms of (1) number of turbines, (2) distance to the closest habitation, and (3) geographic characteristics cannot be used to gauge the potential impact of the Wellfleet proposal.

## Legal Criteria

The Town Counsel recently communicated to the Committee through the Town Administrator that there does not appear to be any legal impediment to installing the turbine. The Committee believes that issues relating to the placement of the turbine within the National Seashore represent *personal preferences* rather than legal prohibition.

In terms of conformance to national (federal) policy, the Committee notes the existence of two federal *orders*, one by Secretary of the Interior Salazar and the other by President Obama. The first, order #3285 issued on 3/11/09 by Mr. Salazar, includes the following section:

"Sec. 4 **Policy.** Encouraging the production, development, and delivery of renewable energy is one of the Department's highest priorities. Agencies and bureaus within the Department will work collaboratively with each other, and with other Federal agencies, departments, states, local communities, and private landowners to encourage the timely and responsible development of renewable energy and associated transmission while protecting and enhancing the Nation's water, wildlife, and other natural resources."

President Barack Obama issued a wide-ranging Executive Order on 10/5/09 "... to establish an integrated strategy towards sustainability in the Federal Government and to make reduction of greenhouse gas emissions a priority for Federal agencies..." The order applies to all Federal Agencies. One of the goals enunciated is a reduction in greenhouse gas emissions. To achieve that reduction, one of the actions to be considered by Agency heads is:

"... increasing agency use of renewable energy and implementing renewable energy generation projects on agency property"

### **Appropriateness and Local Impact**

The question of the "appropriateness" of the facility and its local impact are addressed in the requirements for the Special Permit (the special permit granting authority is the Wellfleet Planning Board). Section 6.25.3 of the Wellfleet Zoning Bylaws lists six requirements:

- 1) the specific site is an appropriate location for such use;
- 2) the use is not expected to adversely affect the surrounding area or neighborhood;
- 3) there is not expected to be any serious hazard to the public and general welfare of the Town, and no nuisance is expected to be created by the use;
- 4) the potential environmental benefits outweigh the potential adverse environmental impacts;
- 5) adequate and appropriate facilities and resources will be provided for the proper operation of the use.
- 6) adequate resources will be provided for the removal of the WF after its useful life.

The height of the turbine and the rationale for the height requirement was presented to the Spring Town Meeting of 2009 by the Committee in the context of the zoning by-law change specifically for this town-owned parcel. The zoning by-law change was approved by over two-thirds of the voters. Additionally, a funding article was presented to Special Town Meeting in October, 2009. A presentation at that meeting also presented specifics concerning the tower height and location of the proposed facility. The funding article was approved by more than two-thirds of the voters.

In terms of local *viewshed* issues, the Committee believes that the siting of the wind turbine minimizes viewshed impact and has no impact on the important *water views* for any residence in the area.

## **Financial Criteria**

The net metering regulations state that a net metered facility will receive credits “applicable to the rate class under which a Host Customer takes service”. To assist potential developers in determining the method by which an electric company determines the “rate class” of a new facility, on 12/15/09 the Department of Public Utilities (DPU) hosted an “informational hearing” at which the Massachusetts electricity distribution companies (NSTAR in Wellfleet’s case) described their methods for assigning a rate class to a new “distributed generation” facility (such as Wellfleet’s proposed wind turbine). The major determinant of a rate class is the “peak demand” of the facility within any 12 month period, which depends on the operating characteristics of the particular model of wind turbine for the facility. Based on the 12/15/09 meeting, Wellfleet requested information on the “imported” load for the facility from the turbine manufacturer and from Wellfleet’s electrical consultant. That information was received in January, 2010 and was in the process of being validated and forwarded to NSTAR as of this date. The Town expects to receive notification soon thereafter from NSTAR concerning the initial rate class to be assigned.

The Town had not yet received notification from NSTAR by mid-January concerning their decision about how they will reimburse the Town for net metering credits – that is, whether by monthly payment or by allocation of credits to other NSTAR accounts. Allocation to other accounts would probably require the town to accept a slightly reduced net income from the project. The Town has contacted NSTAR concerning the delay in this notification.

Once the rate class and net metering notifications are received, they will be combined with additional information (for example, updated estimates of insurance costs now being researched), to refine the *pro forma* financial projections.

## **Conclusion**

In its role as an advisory body to the Board of Selectmen and the Town administration, the Committee continues to evaluate new information as it becomes available with respect to the proposed facility and its viability and appropriateness according to the above criteria.