

Update on the Fox Islands Wind Project

May 6, 2010

The Fox Islands Wind Project has been producing power very nearly as planned since the turbines were commissioned on December 1. To date, they have produced 5,900 megawatt hours (MWh), almost exactly what was projected. All of the energy produced by the turbines was either used on the islands, or sold over the cable to the mainland grid.

Reliability of the units since Turbine 3 came back on line in late February has been excellent. Our line crew quickly cleared a few short-duration outages, and other than these brief periods the turbines have run without any downtime. GE was out this week for routine maintenance. You may have noticed that several of the turbines were out of operation some of the time.

The reduction in electric rates on the island is a direct result of the power generated by the wind project. While electricity prices on the wholesale market are unexpectedly low, they are not the reason for the low prices we are enjoying here on the islands. Over the course of the year the Coop both buys and sells electricity, in equal quantities at market prices; in the winter we are net sellers, in the summer we will be net buyers of electricity. Thus any fluctuations in summer versus winter wholesale electricity prices will impact our costs but the primary driver of electric prices will be how hard the wind blows and how much electricity is generated by the project. March was a particularly windy month: we generated over 1,400M MWh, while April was less windy than projected. Your rates over the last few months reflect these differences.

While the wind project has been successful thus far in reducing and stabilizing electricity prices, and reducing our carbon footprint and reliance on fossil fuels, the sound issue continues to receive press coverage off the island, and to be the subject of discussion off and on the island. We take this issue very seriously, and continue to devote substantial resources to understanding and seeking resolution of this issue. The data collected during the sound experiment that took place in February were studied by researchers at the U.S. Department of Energy's Lawrence Berkeley National Laboratory (LBNL); they have recently provided the board with their report. We are also continuing our work to seek other remedies. Both LBNL's analysis and our continuing efforts are summarized in the attached report.

We also recognize that a full understanding of the sound issue cannot be developed without input from our seasonal members. We will continue to work hard listening, measuring, and talking to residents throughout the summer. As was mentioned in March's update, the sound situation is likely to change significantly as the trees leaf out and the wind dies down. We look forward to working with and hearing from our seasonal members as they arrive over the next few months.

News of the tragedies in the West Virginia coal mines and the Gulf of Mexico reminds us of the scale of the human and environmental impacts of our energy choices, both locally and globally. We are also mindful of the sound issues that some of our neighbors have had, and we will continue to work with the neighbors and with the community to try and find a resolution. The Board of the Electric Coop is proud of the energy choices we have made here on the Fox Islands.

We would like to hear from you and welcome your thoughts, comments and questions.

Fox Islands Electric Coop

Interim Report on Sound Issues; May 2010

Analysis of Data from the February Sound Experiment

The results of the February sound experiment have been analyzed by researchers from the U.S. Department of Energy's Lawrence Berkeley National Laboratory and the results reported to the board at the end of April. The experiment provided several interesting and important results. All residents within about three-quarters of a mile of the turbines were asked to fill out daily surveys reporting whether they heard the turbines, how loud they found them, and whether they found the sound annoying. Of the 18 households that were sent surveys, 9 chose to participate. Participating neighbors filled out daily surveys as often as possible over the course of the month. Of the 200 surveys analyzed, 78% reported observations from outside of their houses, while 22% reported results from inside.

The surveys included questions about the sound from the turbines, the sound from the wind, and the related levels of annoyance. Out of the choices of "not audible," "slightly audible," "moderately loud," "very loud," and "extremely loud," people reported that the turbines were "moderately loud" or louder 27% of the time. Of these, half (13% of the total) found the sound to be "moderately annoying" or worse. Reported sound levels and annoyance levels were higher when respondents were outside, downwind, and at night. There was also evidence confirming what many say anecdotally: that at high winds, the sound from the turbines is totally masked by the sound of the wind.

One of the key objectives of the experiment was to test whether placing the turbines into Noise Reduced Operations (NRO) made a significant difference to the experience of our neighbors. NRO is an option controlled by the turbines' software, and it reduces both the sound level and the power output of the turbines. The turbines were placed into different NRO levels, reducing the sound and the power by different amounts each night, in order to discover how much difference this might make to the neighbors' subjective experience of the sound. The results showed a very small, and statistically insignificant, effect of NRO on the annoyance levels experienced by the neighbors.

Caution is needed in interpreting these findings. The analysis of the results was hampered by the low response rates from our neighbors. Half of the neighbors, including those who have been most vocal in their concerns about the sound, chose not to participate in the experiment. In addition, several of the neighbors who have said that they are not bothered by the sound also did not participate. This means that it is hard to generalize from these findings.

The researchers that analyzed the data from this experiment urge continued study of the issue. They suggest that getting those who are potentially most sensitive to the sound to participate would be an important improvement. They also urged us to gather information from the summer residents who will be within hearing distance of the turbines. We plan on doing so.

Continuing Efforts

We have received a \$30,000 grant from the Department of Energy's National Renewable Energy Lab (NREL) in Golden, Colorado to study the sound issue. On May 17 a team from NREL will arrive on the island to listen, measure, and talk to neighbors. NREL is considered by many to be the most knowledgeable and experienced group in the country on wind turbine operations and sound issues. We are hopeful that they will have some additional insights and recommendations for us.

In addition, we have applied for a Maine Technology Institute Seed Grant to help pay for research and development of Active Noise Cancellation technology. This technology is very new, and untried in the wind arena. However, there is reason to be hopeful that this technology might be effective in mitigating the sound from the turbines inside of people's houses. We will hear about this grant on May 13.

Finally, General Electric is continuing to consider the Fox Islands for some proprietary new blade technology to reduce sound levels. Little is known about this, as GE has yet to release any technical details. We continue to work with GE on this, and we hope to have more news before the summer.