

Update on the Wind Project

December 24, 2009

As of last Sunday, the turbines had generated over 1.8 million kilowatt hours since the beginning of commissioning. During the month of December, since GE completed its commissioning, they have generated over 1 million kwh, which represents a capacity factor of 46%. This is more than 70% above what the islands have used so far in December, and almost 40% above our pre-construction projections. This occurred in spite of the fact that GE was at the site doing routine maintenance last week, which resulted in two-out-of-three of the turbines being shut down most days. This higher-than-expected capacity factor was reflected in your electric bill last month. We have also displaced 9,000 tons of carbon dioxide by generating electricity with the turbines, and reduced (by more than 100%) the islands' reliance on fossil fuels for its electricity.

From a reliability standpoint, the turbines have been performing well. There have been only a few unintended shut downs, which the crew has been able to address quickly. Both Joe Bickford and Loren Bunker have been through GE training: we have excellent local capability to respond to operational issues with the turbines.

Some people have asked whether the turbines that we purchased are new or reconditioned. The machines are brand new, straight from the GE factory. The GE 1.5 megawatt turbine is the most installed wind turbine in the world, with a reputation for reliability and serviceability that is unrivalled. More than any other factor, this was the main reason that we were so pleased to be able to get these turbines on Vinalhaven.

We continue to put a great deal of effort into addressing the concerns of our neighbors about the sound from the turbines. We are working on several fronts.

Starting before commissioning was complete, we began measuring sound levels and wind speeds to confirm that the turbines are operating, from a sound perspective, as warranted by GE. This turns out to be less simple than one might think. Since wind in the trees creates a significant amount of ambient sound, getting the sound measurement equipment to distinguish the sound of the turbines from the ambient sound level is complex. The results of sound measurements are combined with data on hub-height and surface-level wind speeds to figure out what the sound from the turbines actually is. (We look for periods in which the wind is blowing hard at hub-height, but not at all on the ground.) We expect to have preliminary data on this within a few weeks.

We are also working with GE and our sound consultants to find possible physical modifications to the turbines that could address what our neighbors are experiencing. Possible modifications include providing more sound insulation or dampening (either passive or active), or other changes to the towers or the nacelles.

GE has already done a lot of engineering to make the units quiet, but we hope that by collecting more data on the nature of the sounds and their sources, we will be able to understand their causes and the costs of possible modifications.

Another approach being taken is more elaborate, and perhaps more promising. It seems, from talking to our neighbors, that the sound is not bothersome all of the time. Working with our neighbors, our sound consultants, and GE, we are attempting to understand the precise conditions--wind speeds aloft, wind speeds on the ground, wind direction, temperature, blade rpm's--that cause our neighbors to be bothered. This involves logging all operational and climatological data, as well as carefully collecting information from our neighbors about when the sounds are most bothersome. The hope is that, once this information has been collected and processed, we may be able to program the turbines to automatically reduce their speed--and therefore the power output and sound--during specific times so that we can significantly reduce the bother to our neighbors, without having to reduce the output of the turbines very much.

This process of collecting the data, and developing a sophisticated operational curtailment protocol, will take time and it will not be perfect. A great deal of information has to be collected in order for us to understand the circumstances under which the sounds are most bothersome. It is also vitally important that our neighbors continue to collaborate in this. They have already begun to log their subjective assessments of when the sound is most bothersome and when it is not. This data is what we hope will make it possible to develop a successful curtailment protocol. We will be working with the neighbors to improve and formalize the collection of this data over the next few weeks.

From an energy production and financial standpoint, the Fox Islands Wind Power Project has thus far performed as well or better than we could reasonably have hoped. The project was completed on schedule, and only slightly over budget. (We received a grant to cover the cost overrun.) The Coop Board is committed to working through the sound issues in a constructive and collaborative manner. We hope to be able to find a solution that balances the concerns of our neighbors with the desires of the community for a clean, sustainable, and economic energy future. We look forward to the community's support in this effort.

George Baker
Fox Islands Wind