

The following are minutes from the meeting of the Cook County Local Energy Project's Wind Working Group, held at Arrowhead Electric Cooperative in Lutsen on April 8, 2009.

Members present were Joe Buttweiler (representing Arrowhead), Jim Boyd, George Wilkes, and Marco Good (taking notes)

Jim began the meeting by passing out the Summary of the Cook County Zoning Regulations for Small Wind Energy Systems which has been prepared by group member Jeremy Lopez. This is a translation of the legal language in which all the applicable ordinances are written, for the use of those who might be interested in installing wind energy systems privately for their residence or business. Good work, Jeremy. Thanks for that hard work.

Jay LaFavor has been registered to attend a small wind installation workshop, for which our group has agreed to pay his tuition. It would be nice if he could put in an appearance at the Gunflint Greenup program May 1st at the Gunflint Lodge Conference Center.

There is a Consumer's Guide we need to print and distribute. Joe volunteered to take care of the copying.

After the April 14 wind forum at North House, we will meet with Melissa Peterson and Mike Mageau from UMD to winnow down information on the superimposed transmission-distribution line/ Mageau Wind maps, and try

to select two or three potential sites for monitoring.

Joe estimated that the cost per mile for construction of transmission lines to feed large quantities of power from a large wind turbine would be from \$200,000-500,000 per mile.

Jim had a conversation with Mike LaVigne of the Grand Marais State Bank about local financing of a community-based wind generation project. Our project, with one 1.5 megawatt turbine, would likely need to procure \$3-5 million. LaVigne said there is a loan limit of \$600,000, unless there was a partner involved. CCLEP will likely not be the developer of the project. We need to figure out at this point who will be. Jim Skurla? is working on a feasibility report as part of the feasibility study recommended by Mike Mageau. We are looking for an optimal ownership model. There was some discussion of possibilities for such models. SMMPA (Southern Minnesota Municipal Power Association) who provides some wind power to the City of Grand Marais, would be unlikely to be involved, since they currently have a source for wind they consider to be adequate. Arrowhead Electric is bound by their contracts with Great River Energy, but Joe said they would consider how they might get involved. CBED is an organization that promotes and fosters community-based energy initiatives. They might be able to advise us. Options we might consider would be forming a non-profit LLC or a for-profit LLC. George pointed out that keeping the ownership of the project local would be desirable. The interests of Lutsen Mountains and Hedstrom

Lumber being Cook County's industrial power customers was mentioned.

There is a bird study being conducted by Anna Peterson and Janelle? who are working with Gerald Neimi of the DNR. The integration of local birders into their study will be nice to facilitate.

Joe reported that 1.5 MW would be around 5% of what Arrowhead buys from GRE. He thought existing transmission lines should be sufficient to transmit that amount of power back to the grid.

Jim reported that Melissa suggested the possibility of using refurbished equipment of a smaller size and capacity, somewhere in the range of 0.8 or 0.9 MW.

Joe was asked about the cost of upgrading distribution lines to transmission capacity. He said it would depend on where it was, but if the right-of-way has been established (often a large part of the cost of construction), it can be closer to \$100,000/mile. It also depends on whether the distribution line is single-phase or three-phase.

After the mention of a Power Purchase Agreement (PPA) being desirable to work toward, the meeting was adjourned.