

Bon Homme Wind Ordinance Explained

When the Beethoven Wind Farm was constructed, Bon Homme County required a conditional use permit and building permits to build the wind turbines. At that time there was no wind energy ordinance in Bon Homme County. So the County looked to the SDPUC, there they found the draft model ordinance that was created as a starting point to help counties develop their own ordinance. In that draft model ordinance, they recommended 55dB as the maximum sound level, a minimum 1000 foot setback from residences, 500 foot or 1.1 times the height setback from right-of-ways of public roads and property lines of non-participants. Also included was a group of standards to assure a review of environmental impacts of wind turbines and other standards to protect the health, safety and welfare of the County's residents. The County used these recommendations to permit the Beethoven Wind Farm.

In 2015, at the suggestion of some Bon Homme County residents, the Bon Homme County Zoning Board undertook the task of writing a wind ordinance. The Zoning Board held a number of meetings with these residents, were the residents requested a two mile setback from residences. The Zoning Board also consulted with Brian McGinnis of District III as to the structure of the potential new ordinance. Mr. McGinnis advises the county on zoning procedures. A key issue for the zoning commission was balancing the rights of county residents to use their land for their own economic benefit, while at the same time protecting residents who do not want to participate in a wind facility from potential impacts.

The Zoning Board found three key areas of potential impact that should be of concern to residents. The first consideration was physical safety. The towers need to be far enough away from residences so that even if a wind turbine would fail from some unforeseen catastrophe event, there would be no impact to a nearby residence. For this, Bon Homme County adopted the state standard of a 1000 foot setback, for safety reasons.

The next consideration was sound. The sound generated by a turbine is dependent on turbine model, and the amount of sound heard at a residence is also dependent on elevation differences between the tower and the residence, and the orientation of the house and number of wind turbines in proximity to the residence. So a distance-based setback for sound would be

inappropriate. The Zoning Board settled on a hard limit of 45dB sound level as the maximum sound a turbine is allowed to project to the outside of the residences. For a point of reference, 40dB is the sound level of a quiet library, 50dB is the sound level of the average home and 60dB is the sound level of conversation. According to Ron Hornstra, president of Prevailing Winds, if a wind tower in Bon Homme County makes more than 45dB of noise at your house, you would be able to get that turbine shut off.

The final consideration for the Zoning Board was shadow flicker, which is the shadow cast on a residence when the turbine blade passes between a residence and the sun. If a turbine is located east of a residence, there may be some shadow flicker in the morning at certain times of the year when the sun and turbine line up with your residence. If the tower is west of the residence, the shadow flicker will be in the evening. If the tower is north of the residence, there will be very little or no shadow flicker ever. The county ordinance states that a turbine may cast no more than 30 hours of shadow flicker onto a residence in a year, and no more than 30 minutes during any single day.

All wind turbine locations must meet the most stringent of all three of these requirements and more.

Roland Jurgens, project manager for Prevailing Winds, states that, for most residences, the shadow flicker ordinance will govern the setback. If the tower is east or west of a residence, the shadow flicker will generally require the wind turbines to be 1500 feet to 2800 feet or more from a residence, depending on the wind turbine used. And he states that if the tower is north of a residence, the noise requirement could require the turbine to be at around 1400 feet away, again depending on the wind turbine used. Jurgens also said that the 1000 foot setback did not come into play in the Beethoven wind farm, and won't for the Prevailing Winds wind farm. There is really no way to site a turbine 1000 feet from a residence and be in compliance with Bon Homme County ordinance.

Ron Hornstra commented that Prevailing Winds feels that the Bon Homme County wind ordinance is well thought out and protects both the landowners who want to participate in the project and those that do not equally.

Submitted by Erik Johnson, Avon

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