

**Wind Turbine Public Forum**  
**Thursday, April 30, 2009**  
**6:00 p.m.**  
**Town Board Room**

Staff in Attendance: Community Development Director Bob Joseph; Utilities Director Bob Goehring, Recording Secretary Karen Thompson. There were approximately 55 citizens in the audience, including several Planning Commissioners.

Director Joseph opened the forum stating this is the first of several discussions about regulating small-scale residential wind turbines in the Estes Valley. Tonight's forum is to begin discussion on regulatory issues, particularly the following: Height of Towers, Ridgeline Protection and Visual Impacts, Setbacks and Zoning districts, Highway Corridors, Noise, Flicker, Energy Audits, and Inoperative Units and Disrepair.

Director Joseph presented a slide show describing the various types and operation of small-scale residential wind turbines. He also explained the reasons behind the growing popularity of wind turbines. Some communities including Estes Park currently participate in a net-metering program which is connected to the local power grid. Any excess electricity produced by alternate energy sources for residential use can be sent back through the grid for a credit on utility bills.

Director Joseph began by focusing on tower height and turbine performance versus visual impact. Studies show wind speed and wind current stability is directly related to the distance from ground level. Wind speeds three feet off the ground are only about 2/3 of what they are at 120 feet. The greater the topographic relief, the greater the turbulence. Director Joseph noted the general rule of thumb states turbines should be installed at least 20 to 30 feet above the tallest obstruction within 300 feet. The highest efficiency is reached when the turbines are 60 – 80 feet high. The height limit in the Estes Valley Development Code (EVDC) area is 30 feet. Director Joseph also stated wind turbulence can cause higher levels of noise and require more maintenance than if they were higher and had free flowing wind.

Director Joseph explained that large-scale wind farms will typically recover the imbedded investment in approximately one year and then become profitable due to the economy of scale, location, and engineering. In 1999, Estes Park Light and Power began participating in a program where residents can subscribe to and purchase wind energy through the Platte River Power Authority. He stated this is a very economic and environmentally effective way to reduce carbon footprints and get a better dollar-for-dollar return on your investment. In comparison, small-scale wind turbines, unless placed in optimum position and height, may never recoup the investment.

Director Joseph stated there are a few proposed turbines within the Estes Valley. The current regulatory structure reads as long as the entire structure is less than 30 feet in height, a building permit can be issued. A variance through the Board of Adjustment would be required for any proposed wind turbines over 30 feet tall. Larimer County's height limit is currently 40 feet, so turbines constructed outside the EVDC area would need to comply with this limit.

Director Joseph stated noise is another concern. The current code relies on zoning districts to determine allowed decibel levels. From his studies of wind turbines, it appears many approach and possibly exceed the decibel limits; however, technology is improving with the goal to make them quieter. The burden of noise compliance is on the property owner and product distributor. Some units can be programmed to shut down when certain speeds are reached, which could help with the noise.

Chris Stough/Local Resident believes vertical (helix) turbines will probably work best in this area. They can be installed below the 30 foot height limit, and he says one is unable to hear it over the sound of the wind. He thinks wildlife issues will be lessened if noise levels are low. He also said some wind turbines can be painted to blend in with the environment.

Various comments and questions were received by the public, including but not limited to: Is there a way to compare the efficiency of different types of turbines? Could they be clustered and town-owned? Could generators be installed on the towers on the causeway? Cost payback from the system will not be great, but the appreciation in home value could help make up for the cost. It was suggested wind turbines should be reviewed slowly due to advancing technology.

Dave Schultz/Town Resident thinks wind turbines in Estes Park are out of character. Of greater concern to him is when larger developments are built and the developer requests approval for a larger turbine to serve many households. He believes the minimum lot size should be 5 acres, and turbines should be located in the middle of the property rather than the perimeter to impact the property owners more than the neighbors. Mr. Schultz also suggests not allowing wind turbines in designated critical wildlife habitat corridors.

Chris Stough/Local Resident believes the bird kill issue is related to the low frequency noise emitted by the turbines, which disorients birds. Technology is improving and noise is being reduced. He also stated the average cost including installation is between \$16,000 and \$28,000.

Jim McCormick/County Resident is a supporter of wind energy purchased through the Platte River Power Authority. He stated while socially desirable, small-scale residential wind turbines will never yield a return on investment, will have a negative

effect on neighbors and neighborhoods, and are completely incompatible with residential use.

Jay Heinmann/County Resident opposes any small-scale turbine of the three blade type. He is also concerned about the dangers of structural failures.

Jim Tawney/Town Resident supports wind turbines and hopes to see little regulation.

Frank Theis/County Resident believes people should be allowed to take advantage of government energy programs for solar and wind power. He supports wind turbines under 30 feet in height.

Julie Heckman/Town Resident believes small-scale turbines are good as long as they are done in a conscientious way, and should be a right of the property owner. She stated technology is making big strides in improving wind turbines.

Dave Rusk/County Resident is a supporter of distributive small-scale wind energy. He believes a vertical axis system can be used without impacting the view. He wants to be able to take advantage of the net-metering system offered by the Town, and would like to see the Community Development Department move forward with allowing wind turbines in the Estes Valley.

Tim McPhee/County Resident believes not all available wind turbine products should be allowed in Estes Park. He also suggests allowing only one per property. It is his opinion there are too many types available to be able to regulate each one, and general standards will need to be written. He hopes the Town hears public comment concerning visual and noise impacts.

Bill Darden/Town Resident believes it is a right of property owners to be able to install alternate energy sources as long as they comply with the regulations.

Andy Pizer/Local Resident supports helix type turbines. He believes we have to begin being self-sufficient with energy, and small changes can make an impact.

Steve Little/Town Resident believes the only practical way to reduce your carbon footprint is to not consume the energy in the first place. He recommends having an energy audit completed on your home to find out what areas can be improved to lessen energy consumption.

Director Joseph commented that any regulations could include an energy audit to ensure the home was energy efficient.

The meeting was adjourned at 8:00 p.m.