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Via email to wcpplanning@co.wasco.or.us
Wasco County Board of Commissioners
C/o Wasco County Planning and Development
2705 E. Second Street
The Dalles, OR 97058

Re: Energy Updates: Legislative Text Amendments to WCLUDO Chapter 19

Dear Commissioners:

Thank you for this opportunity to comment on the proposed amendments to WCLUDO Chapter 19. I submitted written comments to the planning commission on May 2, 2011.

I write to encourage you to protect the health and property rights of existing residents when you consider the setback provisions proposed for Chapter 19 at pp. 19-35 and 19-36 (section 19.030(D)(1)(c)(3) and (c)(4)).

The draft Strategic Health Impact Assessment on Wind Energy Development in Oregon (HIA), released for public comment January 3, 2012, is the most recent confirmation of what is now universally recognized: modern-day wind turbines pose a significant threat to the public health of surrounding residents and the quiet use and enjoyment of their properties. The HIA concluded in its key findings and recommendations:

“The potential impacts from wind turbine sound could range from moderate disturbance to serious annoyance, sleep disturbance and decreased quality of life. Chronic stress and sleep disturbance could increase risks for cardiovascular disease, decreased immune function, endocrine disorders, mental illness and other effects [8-12]. Many of the possible long term health effects may result from or be exacerbated by sleep disturbance from night-time wind turbine sound [16, 18].” HIA, p. 9

Nina Pierpont, M.D., PHD, has documented the adverse effects on human health in numerous articles and publications over the past decade. Her book "Wind Turbine Syndrome - A Report on a Natural Experiment" was peer-reviewed and published in 2009, and is cited in the Oregon HIA. Dr. Pierpont has recommended a setback of at least 1.5 miles from residences in mixed terrain, and 2-3 miles in hilly or mountainous topography, where valleys can act as natural sound channels (e.g., testimony March 7, 2006 to the New York State Legislature Energy Committee; article entitled "Health Effects of Wind Turbine Noise" dated March 2, 2006; and article entitled "My Conclusions" posted on her website July 26, 2008). Dr. Pierpont's research in the U.S. is consistent with prior reports in Europe where wind power developed earlier. The French National Academy of Medicine had previously recommended a setback of at least 1.5

kilometers. More recently, in a study reported to the Australian Federal Senate Inquiry on Rural Wind Farms in March 2011, Dr. Sarah Laurie confirmed Pierpont's findings and recommended considerably greater setbacks of 6 miles pending further research. Her entire report is at: [http://www.aph.gov.au/senate/committee/clac ctte/impact rural wind farms/submissions.htm](http://www.aph.gov.au/senate/committee/clac_ctte/impact_rural_wind_farms/submissions.htm) (then scroll to submission no. 390).

There is no longer any question that audible sound from wind turbines produces adverse health consequences to nearby residents. The draft HIA also cites the growing number of reports of adverse health impacts from inaudible low-frequency sound. Low-frequency sound from wind turbines has been associated with Vibro-acoustic Disease, or VAD. Inaudible low frequency sound is often sensed as pressure in the ears or vibration in the chest and throat. I noticed this pressure in my ears when I attended the Iberdrola tour for County Commissioners in July. It was not a good day for judging audible sound because there was very little wind, which is quite predictable for mornings in July. Turbines at the greater distances (stops 4 and 5) were either not turning at all or turning only in "free wheel" without turbines engaged and therefore creating little audible noise. However, the pressure in the ears sensation at the earlier stops was unmistakable. Neighbors of industrial wind turbines describe the distressing sensation of having to breathe in sync with the rhythmic thumps of turbine blades, especially at night when trying to sleep. Longstanding anecdotal reports by neighbors of wind facilities are now supported by the scientific research of Dr. Pierpont and others. A study on low-frequency sound released by three British scientists "demonstrate for the first time that the human vestibular system [inner ear] is ... extremely sensitive to low-frequency and infrasound vibrations." Neil P. McAngus Todd, Sally M. Rosengren, James G. Colebatch, "Tuning and sensitivity of the human vestibular system to low-frequency vibration," *Neuroscience Letters* 444 (2008):36-41.

On June 28, 2011 Umatilla County adopted ordinance No. 2011-06, establishing a 2 mile setback from turbines to rural residences. This came after extensive hearings and testimony before the planning commission and County Board of Commissioners.

When it comes to public health it is always better to err on the side of caution. I urge the Board of Commissioners to follow the lead of Umatilla County and change the required setback from turbines to non-resource zone boundaries from 1 mile to 2 miles, and to require a 2 mile setback from existing residential dwellings in the resource zones as well. In order to protect the property rights of those who may wish to participate in a proposed wind facility for money or otherwise, the waiver provisions for owners in the resource zones should be retained.

2 mile setbacks are also consistent with EFSC's implementation of state noise standards. Attached from EFSC is the noise contour map for the Leaning Juniper II Wind Project showing that the 36 dB contour line is located approximately 2 miles from the turbines in most locations. Sound studies are very expensive. Requiring residents to commission sound studies on every proposed project and keep reinventing the wheel would be financially onerous and is unnecessary. Rather, the adoption of a 2 mile setback is easily understood and fair to all.

Adequate 2 mile setbacks to ensure public health, together with a waiver provision for owners in the resource zone, will protect the property rights of neighbors who wish to participate in a project as well as neighbors who do not.

Thank you for this opportunity to comment.

Very truly yours,

Mark S. Womble