

July 31, 2015

Steve Henrichsen
Lincoln / Lancaster County
Planning Department
555 S. 10th Street, Suite 213
Lincoln, NE 68508
402 441 7491

Re: Text Amendment – Commercial Wind Energy Conversion Systems

Dear Steve:

Please find attached Volkswind's proposed alternative text to the recent Planning Commission Review Draft of the Commercial Wind Energy Text Amendment. While we agree with much of the proposed update, we are submitting alternative text in several areas, in order to maintain the health and safety priority while preserving feasibility of CWECS projects.

Please find enclosed a copy of the Lancaster County Planning Commission Review Draft of the Commercial Wind Energy Text Amendment, with integrated:

- Text alternative (or agreement with proposed) in Blue Text; and
- Explanation for the alternative in Red Text.

We recognize that City and County regulators must address the "greater good" concept for the community. Infrastructure always involves trade-offs. There is no energy source (nor construction or operation of any type) which is guaranteed not to annoy someone. Regulating for health and safety is the mandate; regulating to eliminate all possible annoyance is impossible.

We look forward to a constructive, successful conclusion of the text amendment process.

Sincerely,

A handwritten signature in black ink that reads "Joseph Wood". The signature is written in a cursive, slightly slanted style.

Joseph Wood

**Volkswind proposed text (or agreement proposed text) in blue text;
Volkswind explanations in red text.**

13.018 Commercial Wind Energy Conversion System (CWECS).

A Commercial Wind Energy Conversion System (CWECS) may be allowed in the AG District by special permit under the conditions listed below:

(a) In cases where CWECS wind turbines are part of a unified plan, parcels which are separated from one another only by the presence of public right-of-way may be combined into one special permit application. When a special permit covers multiple premises, the lease or easement holder may sign the application rather than the lot owner.

Volkswind agrees with this proposed text change.

~~(a) Each CWECS machine shall be no less than 1,000 feet from any property line of a dwelling unit not associated with the project.~~

~~(b) The distance from all external boundary lot lines and/or right-of-way lines of the special permit to any tower support base of the CWECS shall be equal to the height of the tower plus the rotor radius.~~

~~(c) Each CWECS machine, including all equipment, shall have a sound emission rating of no more than 35 dBA. Noise levels caused from the CWECS turbine(s) shall not exceed 35 dBA at the property line of any dwellings within a one mile radius of a CWECS turbine. A noise study, incorporating both A and C weighted noise impacts on property within one mile may be required. Noise rating shall conform to International Electrotechnical Commission (IEC) standards unless otherwise directed by a government agency.~~

~~(d) (b) Turbines shall meet all FAA requirements, including but not limited to lighting and radar interference issues. Strobe lighting shall be avoided if alternative lighting is allowed. Color and finish shall be white, gray or another non-obtrusive, non-reflective finish. There shall be no advertising, logo, or other symbols painted on the turbine other than those required by the FAA or other governing body. Each turbine shall have onsite a name plate which is clearly legible from the public right-of-way and contains contact information of the operator of the wind facility.~~

Volkswind agrees with this proposed text change.

~~(e) All applicable electrical, building, utility tie-in codes and other government regulations shall apply.~~

~~(f) The distance from any tower base of a CWECS to any tower support base of another CWECS under other ownership shall be spaced a minimum of five (5) rotor diameters distance figured by the size of the largest rotor.~~

~~(g) (c) Each application shall have a decommissioning plan outlining the means, procedures and cost of removing the turbine(s) and all related supporting infrastructure and a bond or equivalent enforceable resource to guarantee removal and restoration upon discontinuance, decommissioning or~~

abandonment. Each tower shall be removed within one year of decommissioning or revocation of the special permit. Upon removal of the tower, there shall be four feet of soil between the ground level and former tower's cement base.

(c) Each CW ECS shall have a decommissioning plan outlining the means, procedures and cost of removing the machine(s) and all related supporting infrastructure. Subject to review and approval by the County Board, by the fifteenth year of its operating life, a CW ECS may be required to establish collateral (for example a letter of credit, bond, or equivalent enforceable resource) to secure the net cost of removal and restoration upon discontinuance, decommissioning or abandonment.

[EXPLANATION] A requirement for decommissioning plan is typical, however, specifying removal depths is not appropriate. This detail is the province of the agreement with the respective landowner. Commercial scale wind turbines typically have a 25 year design life, thus, it is appropriate to require security for removal in year 15.

~~(h) Said CW ECS shall meet all Federal, State and local rules and regulations.~~

(d) Any proposed turbine which is within half mile of any non-participating dwelling shall provide shadow flicker modeling data showing the expected effect of shadow flicker on non-participating properties. Shadow flicker shall not fall upon any non-participating dwelling, or other building which is occupied by humans, for more than 30 minutes in any one day, nor a total of 30 hours per any calendar year. If shadow flicker exceeds these limits, measures shall be taken to reduce the effects of shadow flicker on buildings, which may include shutting the turbine down during periods of shadow flicker.

(d) CW ECS shall be designed and placed in such a manner as to minimize to the extent feasible, adverse visual impacts on areas adjacent to the Special Permit property. The Special Permit grantee shall document projections of the "shadow flicker" on any residences located outside of the Special Permit property which are occupied for at least 6 months per calendar year.

[EXPLANATION] The alternative language addresses visual impact concerns outside of the Special Permit area and is in line with wind energy rules in other Nebraska counties.

(e) Construction and operation shall not adversely impact identified State or Federal threatened or endangered species such as saline wetlands, or rare natural resources such as native prairie and grasslands.

(e) CW ECS construction shall not adversely impact resources identified by Nebraska Game & Parks Commission or U.S. Fish & Wildlife Service as threatened resources, listed species, wetlands, native prairie or grasslands.

[EXPLANATION] As recommended also by the Nebraska Wildlife Federation, this provision should define resources identified by specific Nebraska and Federal agencies designated to formally protect natural resources; otherwise the rule is too ambiguous.

(f) No turbine shall obstruct or impair an identified view corridor or scenic vista of public value, as mapped on the Capitol View Corridors map in the Lincoln/ Lancaster County Comprehensive Plan. The views from prominent environmental areas, such as Nine Mile Prairie and Spring Creek Prairie, shall also be protected from adverse visual or noise impacts. Any application which, upon initial review, poses a

possible impact to these views will be required to be relocated or provide view shed mapping, and visual simulations from key observation points for review.

Volkswind agrees with this proposed text change.

(g) Setbacks to the turbine base:

- 1) For a non-participating lot of less than 10 acres, the setback shall be 1,000 feet or 3 times the turbine height (hub height plus the rotor radius), whichever is greater, measured to the property line.
- 1) *For a non-participating lot of less than 10 acres, the setback shall be 1,000 feet or 2 times the turbine height (hub height plus the rotor radius), whichever is greater, measured to the property line.*

[EXPLANATION] The suggested setback distance, which could be as large as 1500 feet, well over a quarter mile, is unnecessary in terms of public health and overly restricts a private landowner from wind energy use of their property. A setback tied to structure height also protects neighboring property owners in the event turbines become taller in the future.

- 2) For non-participating lot of 10 acres or greater, when there is a dwelling unit on the lot, the setback shall be 1,000 feet or 3 times the turbine height, whichever is greater, measured to the closest exterior wall of the dwelling unit.
- 2) *For non-participating lot of 10 acres or greater, when there is an occupied dwelling unit on the lot, the setback shall be 1,000 feet or 2 times the turbine height, whichever is greater, measured to the closest exterior wall of the dwelling unit.*

[EXPLANATION] Need to refer to “occupied” dwelling. Same as above comment for 1)

- 3) For participating dwelling units, the setback shall be 1,000 feet to the closest exterior wall of the dwelling.

Volkswind agrees with this proposed text change.

- 4) The setback to any public right-of-way or private roadway shall be no less than the turbine height.
- 4) *The setback to any paved public road shall be no less than the turbine height. The setback to any unpaved public road shall be no less than the rotor diameter of the turbine.*

[EXPLANATION] Alternative text is based on the safety recommendation from leading turbine vendors. A rotor diameter distance to lightly traveled unpaved roads may also allow for turbine siting in corners of parcels with pivot irrigation. Risk of tower collapse is negligible and statistically remote; based on evidence from over 48,000 operating turbines in the US. A setback from a private road is neither workable nor appropriate.

- 5) Setbacks to the external boundary of the special permit area shall be no less than the turbine height, except that the owner of the adjacent property may sign an agreement allowing that setback to be reduced to the rotor radius plus the setback of the zoning district.

Volkswind agrees with this proposed text change.

(h) Any single turbine shall not impact a non-participating lot, (vacant or occupied; of any size), to the extent that, because of the location of turbine, the lot owner is left with less than 3 acres of land outside of the CW ECS setbacks or the noise impact area in Section (i) below, unless they are part of an agreement with the CW ECS owner/operator.

~~*(h) Any single turbine shall not impact a vacant or occupied lot (of any size) to the extent that, which because of the location of turbine, the lot owner is left with little land outside of the CW ECS setbacks or the noise impact area, unless they are part of a contractual agreement with the CW ECS owner/operator.*~~

[EXPLANATION] This provision is: a) unclear; and b) inappropriate in its intent. This appears to be an attempt to address potential residential development (or subdivision) on current ag use land. However, it is phrased in such a way that meaning is unclear and moreover, implementation is unworkable. Any land has potential for subdivision in the future. If the intent is to avoid wind turbine installation interference with a residential permit already in the works, a more appropriate provision should be phrased as follows, for example "CW ECS shall not prohibit construction of a residence on a vacant or occupied lot which is permitted for one or more residence(s) at the time of Special Permit application". As written, we cannot interpret what is meant.

(i) Noise: No CW ECS or combination of CW ECS turbine(s) shall be located as to cause an exceedance of the following as measured at the closest exterior wall of any dwelling located on the property. For both participating and nonparticipating properties:

- (1) From the hours of 7 am to 10 pm:
 - Forty (40) dBA maximum 10 minute Leq or;
 - Three (3) dBA maximum 10 minute Leq above background level as determined by a pre-construction noise study. The background level shall be a Leq measured over a representative 15 hour period.
- (2) From the hours of 10 pm to 7 am:
 - Thirty-seven (37) dBA maximum 10 minute Leq or;
 - Three (3) dBA maximum 10 minute Leq above background level as determined by a pre-construction noise study. The background level shall be a Leq measured over a representative 9 hour period.

(i) Noise: No CW ECS or combination of CW ECS machine(s) shall be located as to cause an exceedance of the following as measured at the closest exterior wall of any dwelling located on the property.

1) For participating properties a fifty-five (55) dBA maximum 10 minute Leq during any one hour;

2) For nonparticipating properties:

- **Fifty (50) dBA maximum 10 minute Leq or;**
- **Five (5) dBA maximum 10 minute Leq above background level as determined by a pre-construction noise study. The background level shall be a Leq measured over a representative 24 hour period at a representative dwelling.**

[EXPLANATION] The noise subject has been very well-trod. No evidence has been presented to suggest noise restrictions in Lancaster County should be any more stringent than in any other county in Nebraska.

The Health Department's proposed limits:

- ***Are not consistent with City of Lincoln's own Noise Control Ordinance for its ag zone (wind energy should not be singled out from any other commercial activity – there are no proven adverse health impacts from wind turbine noise – it is not “unique” from other sources. Consider for example ocean front residences, among the most highly valued properties, where “natural” wave action produces sound pressures far exceeding wind turbine noise at 1,000 feet. In a prairie setting, sound of wind on home structure itself generally far exceeds any sound detected from a wind turbine 1,000 feet away)***
- ***Are not consistent with LLCHD's own previous recommendations***
- ***Are by far the most extreme limits in Nebraska and in any other state we have seen***

City of Lincoln's own Noise Control Ordinance for its ag zone specifies:

- *6am to 10pm – 75 dBA*
- *10pm to 6am – 50 dBA*

LLCHD points to “findings in studies published in late 2014 and early 2015” as explanation for updated recommendations. We cannot make a connection between studies (2015 Canadian study / 2014 Danish study) and the proposed limits. As a basis for 37 dBA, LLCHD points to 2012 Mass study, however, this table was available previously to LLCHD; the referred table item is for residential areas. Wind energy facilities in Lancaster County will not be sited in residential areas. The 2014 Danish study states “experimentally it has been shown that wind turbine noise does not differ substantially from traffic noise when the wind turbine noise is not known of in advance”. There is no link between these recent studies and LLCHD updated recommendations.

We respect “due process” exercised by LLCHD, however the updated restrictions go beyond protecting public health and safety, to unwarranted restriction of landowners’ free exercise of property rights. Regulation involves trade-offs and balancing costs and benefits. It is not right to adopt extreme noise limits in the rural zone to rule out subjective “annoyance” at the cost of:

- *Landowners’ rights;*
- *a fuel-free, emissions-free power resource;*
- *Substantial economic boost in the rural community.*

If “annoyance” did occur: a) we have put forward a Board-administered penalty mechanism for addressing proven complaints. All of the referred studies suggest even if “annoyance” occurs (and rarely does) the numbers are small.

(j) A professional pre-construction noise study shall be conducted which includes all property with a dwelling within one mile of a tower support base. The protocol and methodology for such studies shall be submitted to the Lincoln-Lancaster County Health Department for review and approval. Such studies shall include noise modeling for all four seasons and include typical and worst case scenarios for noise propagation. The complete results and full study report shall be submitted to the Lincoln-Lancaster County Health Department for review.

See (j, k) below

(k) Prior to the commencement of construction of any turbine, pre-construction noise monitoring may be conducted to determine ambient sound levels in accordance with procedures acceptable to the Lincoln-Lancaster County Health Department.

(j,k) As a condition of commencing construction under the Special Permit, the CW ECS Special Permit grantee shall submit a pre-construction noise study, establishing representative ambient sound levels at representative location(s), to the Lincoln-Lancaster Health Department.

[EXPLANATION] Proposed text is redundant and totally discretionary. Alternative text is concise. In essence the Health Department requires a pre-construction noise study establishing representative pre-construction ambient (background) noise levels.

(l) Prior to the commencement of construction of any turbine, the applicant shall enter into an agreement with the County Engineer regarding use of County roads during construction.

Volkswind agrees with this proposed text change.

(m) At the discretion of the County Board, post-construction noise level measurements may be required to be performed in accordance with procedures acceptable to the Lincoln-Lancaster County Health Department.

See (m, n) below

(n) All noise complaints regarding the operation of any CW ECS shall be referred to the County Board. The County Board shall determine if noise monitoring shall be required to determine whether a violation has occurred.

(m, n) At the discretion of the County Board, post-construction noise level measurements may be required; provided, however, that the County Board may not require such discretionary measurement unless a complaint has not been resolved after six months. All CW ECS noise complaints shall be referred to the County Board, which shall determine whether noise monitoring is required. A valid CW ECS noise complaint must come from the occupant of a residence which existed or had a building permit as of the date of the CW ECS Special Permit application. If two post-construction testing programs find the CW ECS in compliance at a particular residence, any further compliance testing at that residence will be done at the expense of the requestor. Violation of the sound limits set forth above shall be evaluated by Lincoln-Lancaster County Health Department, and must be further

confirmed by an independent specialist Board Certified by the Institute of Noise Control Engineers (INCE). Upon confirmation of violation(s) by an independent Board Certified INCE specialist, and further affirmation of such conclusion by the County Board, the Special Permit grantee shall be subject to a fine according to the schedule set forth in Table 1.

<i>Table 1. Fine Schedule for CWECS Violations of Sound Level Limits Decibels (dBA) in Excess of Limit</i>	<i>Fine per Occurrence</i>
<i>1-4</i>	<i>\$500</i>
<i>5-9</i>	<i>1,500</i>
<i>10-14</i>	<i>2,000</i>
<i>15-19</i>	<i>2,500</i>
<i>20+</i>	<i>3,000</i>