

*Comments pertaining to the accuracy and completeness of the:*

## **Kittitas Valley Wind farm Project**

DEIS

December 2003

*(Summary of Comments starts on Page 12 of this document)*

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### **Fact Sheet**

The original **Kittitas Valley Wind Power Project application** states:

#### **2.3.1.2 Overview**

The Kittitas Valley Wind Power Project consists of several prime elements which will be constructed in consecutive phases including roads, foundations, underground and overhead electrical lines, grid interconnection facilities, one or two substations, an operations and maintenance (O&M) center and associated supporting infrastructure and facilities.

Approximately 90 acres of land area will be required to accommodate the proposed power plant and related support facilities. A general site layout illustrating these key elements is contained in Exhibit 1, Project Site Layout.

The Project will consist of up to 121 wind turbines for an installed nameplate capacity of up to 200 megawatts (MW). The Project will utilize 3-bladed wind turbines on tubular steel towers each ranging from 1.3 MW to 2.5 MW (generator nameplate capacity) and with dimensions as shown in Figure 2.3.6-1.

This Draft EIS attempts to evaluate the environmental impacts of three distinct project scenarios described as "Lower End Scenario", "Middle Scenario", and "Upper End Scenario". The "Lower End Scenario" utilizes turbines (with a 3 MW nameplate capacity) that are not even described in the application. The DEIS states that between 93 and 118 acres of land will be utilized; at odds with the application statement of only 90 acres being used.

Immediately one can determine this DEIS document is inaccurate at best and realistically, incomplete in its analysis.

This proposed project is being treated as a single power generation facility when in fact; the applicant states they would like it to be considered as a project consisting of 82 to 150 separate power generating turbines of different sizes and power generating capacities. This is inconsistent with the evaluation and oversight of large energy facilities in a single location that is in the EFSEC charter. The project should be clearly defined and the individually placed turbines evaluated as to their singular environmental impacts, then as to their aggregated impacts as part of a wind generation facility, and finally the whole facility evaluated as to the impacts relating to combined effects of multiple wind power generation facilities in the context of the Kittitas Valley as a whole. This document is very large, but there is no excuse for accepting flawed and incomplete scientific analysis.

### **Chapter 1** **Summary**

#### **1.2 Purpose and Need for Project**

The stated nameplate capacity of this project proposal is between 246 MW (although this configuration will most likely not be built due to the liability of increased utility regulations for any power generation facility over 200 MW) and 181.5 MW. Actual (or effective power generation) from commercial wind power facilities is in the area of 30 percent. It follows that this project's real (useable) potential capacity is between 73.8 MW and 54.45 MW.

Information noted in Table 1-1 (Projected Pacific Northwest Electricity Demand, 2000-2025) suggests that there will be a 1,854 MW (Medium Low forecast) and up to 15,817 MW (High forecast) increase in power demand through 2025. Using the "Middle Scenario" wind facility configuration (54.45 MW effective), this project would only contribute between 3% (Medium Low forecast) and 0.3% (High forecast) to this growth. This is an insignificant contribution to the public's potential need for anticipated increased power consumption in the Northwest. To contrast, the Sumas Energy 2 Generation Facility (SE2GF) is a nominal (and dispatchable) 660 MW natural gas-fired electrical generation facility and would contribute between 36% and 4% of anticipated need and would only occupy a portion of a 37-acre site within the industrial area of Sumas, Washington.

Commercial wind power generation is a diluted (requiring vast tracts of land) and intermittent power source. Net new conventional power generation capacity must be added to the regional grid for every wind power nameplate capacity MW added to generate power when the wind does not blow. This requirement makes this project's contribution even less viable.

The applicant states there is a growing demand for "green resources", but in fact all utility offered voluntary programs have a very low participation rate. Washington State already has the highest participation per capita rate of "green sources" power consumption in the nation derived from low cost hydro-electric power generation. The net effect of adding additional commercial wind power generated capacity to the regional supply is to raise the rates of all utility customers due to increased costs associated with stabilizing our current supply. This is a form of power generation that relies on tax payer subsidies, legislated markets, and increased user rates to be viable. Offering incentives to the public to reduce demand and subsidizing research to produce products that consume power more efficiently would better serve the public interest. There is no demonstrable need for this project.

## **Alternative Wind Turbine Locations**

### **1.4.4 Offsite Alternatives**

Remoteness from nearby transmission lines with sufficient load carrying capacity has absolutely no bearing on suitability for consideration as an alternate location for the purpose of this EIS. This factor only involves business case decisions relating to profitability. As stated previously, there are plenty of other sources of power generation where the construction of power transmission capability has been part of the project. This is not a concern for an EIS evaluation. The only consideration to meet this requirement is whether there is sufficient wind to produce power at the proposed alternative site.

## **1.9 CUMULATIVE IMPACTS**

### **1.9.1 Earth Resources**

The breaking of ground for tower construction and electrical interconnection will provide inroads for invasive noxious weeds that are already a serious problem within Kittitas County and impacts farming yields. This is an ongoing and cumulative impact.

### **1.9.2 Vegetation, Wetlands, Wildlife, and Fisheries**

#### **Wildlife**

Cumulative mortality rates for raptors are based on insufficient data. A minimum two year base line avian population study of the whole Kittitas Valley is required to determine actual avian flight patterns in the area where these projects are being proposed. No studies were even performed to estimate bat mortality rates.

Local elk calving areas will be impacted and will most likely result in this population avoiding the area until the facility is decommissioned.

### **Socioeconomics**

The three combined projects would not increase the amount of annual property tax revenue to the county. The amount of property tax generated revenue collected is limited to 1% annual growth with the passage of Initiative 747. This rate of increase in property tax revenue has been more than met year after year with increased valuations on existing property and new construction within the county. Any potential lowering of individual tax liability will be lost by the increase in average consumer electrical rates due to the introduction of this type of generated power to the regional grid.

### **Visual Resources**

The cumulative effect of the KVVPP and Desert Claim projects on the viewshed in an area that the State of Washington has designated as a Scenic Byway (Highway 97 corridor) is severe and may even be a highway safety issue due to driver inattention. The night time disturbance of multiple blinking red warning lights will contribute to this visual pollution and add to the background ambient light that is considered undesirable by a large number of amateur astronomers who visit this area for its quality of night time viewing.

### **Noise**

The noise modeling offered for this EIS did not include low frequency analysis and as such, the conclusion that there is no cumulative effect is most likely incorrect. Low frequency noise carries much farther than the frequencies measured. This noise is generated when the blades pass in front of the supporting tower structure and the more turbines there are, the more intrusive this noise source becomes.

## **Chapter 2 Proposed Action and Alternatives**

### **2.2.2 Project Location and Project Site**

#### **Project Setbacks**

The desired general setback criteria suggested conflicts with data supplied by the noise, shadow flicker, raptor collision impact analysis, and safety analysis.

## **2.7 CONSIDERATION OF OFFSITE ALTERNATIVES**

### **Site Selection and Suitability Criteria**

An alternate site selection should not be limited to only sites that the applicant has personally studied. Wind resource maps of the area indicate there are many more potential (and remote) areas that the applicant has not evaluated.

(2) Proximity to existing transmission facilities and adequate capacity

Distance from and capacity of existing transmission facilities is not a consideration in an EIS unless the construction of new transmission capability is required and would effect the environment. This is a profitability issue to the developer of this type of power generation.

### **Site Screening Process**

#### Springwood Ranch

Sufficient wind resource is present. Accessibility to transmission facilities is not an eliminating criterion.

#### Manastash Ridge

Sufficient wind resource is present. Accessibility to transmission facilities is not an eliminating criterion.

## **Chapter 3**

### **Affected Environment, Impacts, and Mitigation Measures**

#### **3.1 EARTH RESOURCES**

##### **3.1.2 Impacts of Proposed Action**

###### **Construction Impacts**

No analysis was provided on the potential impact (or proposed mitigations) to drinking water well contamination due to blasting used in the excavation for the construction of the tower turbine bases and interconnecting trenches.

#### **3.2 VEGETATION, WETLANDS, WILDLIFE AND HABITAT, FISHERIES, AND THREATENED AND ENDANGERED SPECIES**

##### **3.2.1 Background**

###### **Methods**

Extensive wildlife surveys were in fact not performed. cursory point count and in-transit surveys were conducted from February 2002 through early November 2002 by Western Ecosystems Technology, Inc. (WEST). In addition, aerial surveys were used to identify visible raptor nests. WEST was the same consultant used to analyze the adjacent enXco Desert Claim project and was the consultant used to site the Foote Creek Rim wind project in Wyoming.

The local Kittitas County Audubon Society chapter has recommended a two year baseline study of the entire Kittitas Valley to more accurately site wind power facilities in the context of potential cumulative impacts to wildlife and especially avian wildlife.

###### **Wildlife and Habitat**

###### Birds

Besides the fact that the study was insufficient in length; a mapped summary of raptor observations and flight paths by species or group was not performed. This analysis was performed on the Desert Claim project and four significant areas of raptor activity were identified that involved raptor hunting behavior associated with ridge lines in the project area. This raptor behavior was also noted in the

Foot Creek Rim project in Wyoming. WEST recommended 50 meter setbacks in both projects from existing ridge lines to limit raptor mortality. One can only speculate as to the reason Zilkha Renewable Energy (Sagebrush Power Products LLC) did not perform this analysis, or if it was performed, why it was not included in this EIS. It is my opinion that this information was not provided due to the fact that it would show an unacceptable risk to raptor populations. The majority of this project as proposed exists on ridge tops which are prime raptor hunting territory.

Aerial raptor nest surveys are insufficient. No residents in the area were contacted to discover known nesting sites and since Kestrels are a cavity nesting species, no amount of aerial surveys are likely to discover their nests.

No night observations were performed (radar or otherwise) which means owl populations and bat populations were basically ignored.

No sound observations were performed to estimate 'unsighted' bird populations.

No rodent population surveys were performed to determine preferred raptor habitat.

No Bald Eagle roosting sites were searched for outside the project area to determine if their travel patterns might intersect with the proposed wind power facility.

No avian baseline studies were offered from other operating wind power facilities to determine possible effects over time.

This project violates several recommended guidelines developed by the US Fish and Wildlife Service; specifically, recommendations numbers 2, 4, 6, 9, and 10.

## **INTERIM GUIDELINES TO AVOID AND MINIMIZE WILDLIFE IMPACTS FROM WIND TURBINES**

US Fish and Wildlife Service May 3, 2003

### Site Development Recommendations

The following recommendations apply to locating turbines and associated structures within WRAs (Wind Resource Area) selected for development of wind energy facilities:

1. Avoid placing turbines in documented locations of any species of wildlife, fish, or plant protected under the Federal Endangered Species Act.
2. Avoid locating turbines in known local bird migration pathways or in areas where birds are highly concentrated, unless mortality risk is low (e.g., birds present rarely enter the rotor-swept area). Examples of high concentration areas for birds are wetlands, State or Federal refuges, private duck clubs, staging areas, rookeries, leks, roosts, riparian areas along streams, and landfills. Avoid known daily movement flyways (e.g., between roosting and feeding areas) and areas with a high incidence of fog, mist, low cloud ceilings, and low visibility.
3. Avoid placing turbines near known bat hibernation, breeding, and maternity/nursery colonies, in migration corridors, or in flight paths between colonies and feeding areas.
4. Configure turbine locations to avoid areas or features of the landscape known to attract raptors (hawks, falcons, eagles, owls). For example, Golden Eagles,

hawks, and falcons use cliff/rim edges extensively; setbacks from these edges may reduce mortality. Other examples include not locating turbines in a dip or pass in a ridge, or in or near prairie dog colonies.

**5.** Configure turbine arrays to avoid potential avian mortality where feasible. For example, group turbines rather than spreading them widely, and orient rows of turbines parallel to known bird movements, thereby decreasing the potential for bird strikes. Implement appropriate storm water management practices that do not create attractions for birds, and maintain contiguous habitat for area-sensitive species (e.g., Sage Grouse).

**6.** Avoid fragmenting large, contiguous tracts of wildlife habitat. Where practical, place turbines on lands already altered or cultivated, and away from areas of intact and healthy native habitats. If not practical, select fragmented or degraded habitats over relatively intact areas.

**7.** Avoid placing turbines in habitat known to be occupied by prairie grouse or other species that exhibit extreme avoidance of vertical features and/or structural habitat fragmentation. In known prairie grouse habitat, avoid placing turbines within 5 miles of known leks (communal pair formation grounds).

**8.** Minimize roads, fences, and other infrastructure. All infrastructure should be capable of withstanding periodic burning of vegetation, as natural fires or controlled burns are necessary for maintaining most prairie habitats.

**9.** Develop a habitat restoration plan for the proposed site that avoids or minimizes negative impacts on vulnerable wildlife while maintaining or enhancing habitat values for other species. For example, avoid attracting high densities of prey animals (rodents, rabbits, etc.) used by raptors.

**10.** Reduce availability of carrion by practicing responsible animal husbandry (removing carcasses, fencing out cattle, etc.) to avoid attracting Golden Eagles and other raptors.

### **3.4 HEALTH AND SAFETY**

The applicant quotes at every opportunity, risk assessments based on documented instances of injury and/or damage. The reverences to injury based on numbers of turbines installed are particularly irrelevant due to the fact that most wind farms are built away from populated areas (unlike this proposal). Many times the words "rare" or "of low probability" are used. But by their own admission, the implementation of turbine technology of this size is relatively new. There has not been sufficient time for a historical database to build up so that empirical data can be relied upon to assure safety standards for large scale wind facilities. This being the case, it should be evident that safety margins be created to anticipate potentially unforeseen problems with this technology within a changing environment; something that most certainly will occur over the stated 20 year life of the project. One of the things that history has shown (and we can rely upon) is that man does not anticipate all the impacts of technology that he implements.

#### **3.4.2 Impacts of Proposed Action**

##### **Operations and Maintenance Impacts**

Rotor blade tip throws were not listed as operational impacts.

##### Risk of Fire or Explosion

There are no negotiated fire response plans with existing fire districts for this project. 80% of the project lies outside of existing fire districts. The situation that must be anticipated is the time it takes for a wind driven wildfire to cover 1,000 feet of tinder dry shrub steppe. This distance is the unacceptable setback that the applicant proposes for turbine placement from an existing home. Common sense says the most probable time of fire initiation is when the turbine is either running at its extreme limits or attempting

shut down. This is an operational upper limit of around 55 MPH. 55 MPH is 4,840 feet a minute. Fire breaks have very little effect on wind driven wildfire, so residents living in this increased fire risk zone must have fast fire district response. Proposed turbine D1 is 1,300 feet from my home's back door.

#### Risk of Turbine Tower Collapse

A 3 MW turbine has a combined height of 410 feet. The access road (my driveway) to my home comes within 400 feet of proposed turbine D1.

#### Risk of Turbine Blade Throw

Using the classic maximum trajectory case from standard physics texts; a 3 MW turbine is capable of throwing a blade over 500 feet. Proposed turbine D1 is within 400 feet of my access road.

#### Risk of Ice Throw from Turbine Blades

There have been documented instances of ice throws over 1,300 feet. The contention that icing occurs on average 3 to 5 days is already exceeded this winter season. Icing at the string D area has occurred at least 7 days as of 12/22/2003. The risk of ice throws is not an insignificant potential and can result in damage and/or injury. I have attached a photo below from this morning showing that icing is not a rare occurrence in the project area.

#### Shadow Flicker

This effect is not just a nuisance impact. If these shadows sweep across public or private roads, a transportation safety impact is present due to operator distraction.

No non-participating resident within this project area should have to endure a single second of this effect in their home. Further, zero effect individual setbacks from non-participating property lines should be required to respect individual property rights (i.e. where a property owner can build, board horses, or enjoy viewing wildlife as examples).

The recommended mitigation of planting trees and/or installing shades on affected windows is unacceptable. The residents affected by this effect bought property in the area for the view, appreciation of wildlife, or even the boarding of horses. This effect limits their prime viewing time during early morning hours and inhibits the use of their property which may involve the boarding of horses.

#### **Reference: THE BRITISH HORSE SOCIETY**

Revised Policy Statement on Windfarms and Horses/Ponies

1. The Society is conscious of the need for developers and planners to be made aware of the safety implications to horses and their riders or drivers arising from the construction and operation of wind turbines in the vicinity of routes for riding and/or driving horse drawn vehicles (HDV).
2. The natural instinct of a horse when faced with perceived danger is flight so its reaction depends very much on, in that first split second, the horse's perception of the hazard, and equally as important the riders/drivers ability to handle the horse or pony when faced with unexpected circumstances.
3. The horse and rider unfamiliar with the area may react in a potentially dangerous manner to any of the following characteristics which can arise from the operation of a wind turbine: sudden appearance in the horses' sight line of turning blades, the low frequency noise emitted by the turbines punctuated by the "whoomph" as

the blades pass the nadir point and sometimes said to be felt rather than heard, shadows sweeping the ground or bushes/trees in sunny weather, the unexpected starting up of the turbine if the wind builds up as the horse approaches.

The noted effects on horses can be applied to deer and elk with the net effect of driving these animals away from the area.

### **3.4.4 Mitigation Measures**

#### **Mitigation Measures Proposed by the Applicant**

No analysis or discussion of possible increased risk of the Hantavirus to the residents within the proposed project area due to the potential of increased rodent populations as a result of decreasing raptor populations was presented.

#### Fire and Explosion Risk

The applicant should provide 7 day, 24 hour, 10 minute emergency response times for fires within the project zone.

#### Measures to minimize Risk of Tower Collapse and Blade Throw

Blade tip throw should be included in this risk and a minimum 1,500 foot setback from any turbine to any public or private road is required. This same setback is required from non-participating property lines.

#### Measures to Minimize Shadow-Flicker Effects

The recommended mitigation of planting trees and/or installing shades on affected windows of non-participating property owners is unacceptable. The only mitigation for this effect is to move the turbines to a distance where this effect is not present. This requires individual shadow-flicker analysis on a turbine by turbine basis based on topography to assure that this effect does not cross public or private roads and non-participating property owner property lines.

## **3.7 SOCIOECONOMIC**

### **3.7.2 Impacts of Proposed Action**

#### Property Values

The applicant contends that an analysis of potential property devaluation as it relates to the construction of a wind farm was beyond the scope of this EIS. This assertion is absurd. The studies noted (especially the REPP study) are flawed and do not relate to this specific site area. This area has one of the fastest appreciating property values in the State Of Washington. These appreciating values are based on zoning restrictions, world class scenic views, and a rural lifestyle. These qualities are all threatened by the introduction of this proposed industrial land use and will result in property devaluation of non-participating land owners in the proposed site area.

#### Local Government Taxation and Revenue

If this facility were constructed, any increase in locally collected property tax revenue (and potential reduction in individual property owner tax burden) will more than be offset

by increased monthly power rate increases due to increased utility cost to stabilize the regional grid to accommodate this low capacity, intermittent power source.

### **3.9 VISUAL RESOURCES**

#### **3.9.2 Affected Environment**

##### **Viewpoints**

The applicant visited my property twice, obtained GPS readings of my home's location, and promised to produce visual simulations of the project from my home. This promise has not been kept even though I have repeatedly requested them. I have obviously what is termed by the applicant as a "predictably high level of sensitivity to visual impacts". I purchased my property for its spectacular views and the applicant has suggested I plant trees or put up blinds to mitigate the effect of shadow-flicker on my home. This would obviously limit my view with resultant property devaluation.

The cumulative effect of multiple turbines that are 400 feet tall, with spinning 295 foot rotors, and blinking strobe lights designed to warn aircraft of their presence is a visual blight in what is considered a Washington State Scenic and Recreational Highway corridor. If this project were built, there is no denying that the prominent feature noted within the project area will be wind turbines. Anything that moves or blinks naturally draws attention.

All simulations are (intentionally?) unrepresentative of the normal weather conditions that exist in the proposed site area. Every simulation has cloud cover in the background which is not representative. Very low rainfall exists in the area and it follows the majority of our days are cloudless. A white, 400 foot structure against a crystal clear blue background has a large visual impact. None of the simulations involve rotor movement. None of the simulations involve the effects of blinking white strobe lights. The simulations do not model the "Lower End Scenario" utilizing the much larger 3 MW turbines. The larger the turbine used, the more visually impactful the project becomes.

#### **3.9.5 Mitigation Measures**

There is no acceptable mitigation to the cumulative visual impacts associated with this project. The suggestion in section 3.9.4 (*Impacts of No Action Alternative*) that not building this facility would result in some other facility being constructed with similar visual impacts is without merit. Traditional power generation facilities have minor visual impacts.

### **3.10 TRANSPORTATION**

#### **3.10.4 Mitigation Measures Proposed by the Applicant**

##### Roadway Maintenance

No commitment was made to repair damage to Bettas Rd. due the movement of heavy equipment and/or trucks either during construction or operation. This road has been damaged in the past with heavy equipment movement.

### **3.12 NOISE**

#### **3.12.2 Impacts of Proposed Action**

##### **Operations and Maintenance Impacts**

## Wind Turbine Noise

Noise is defined as unwanted sound. One of the reasons that most residents purchased their property was to enjoy the peaceful solitude that exists in the proposed project area. Any wind turbine noise above the ambient noise produced when the wind blows will be noticed and resented regardless of what current law specifies as permissible. Land property valuation is partially based on maintaining this rural, peaceful environment. This is one very important noise measurement that is missing in this analysis which is a low frequency 'thumping' noise produced when the blades pass in front of the wind turbine tower structure. This low frequency sound carries much further than the frequencies measured in the analysis and is cumulative in its effect. Common sense says this effect will only become more noticeable as the size of the turbine increases. Some residents living next to modern operational wind farms have described this noise source as sounding like helicopters in the area. This is a noise source that can not be mitigated.

### **3.13 PUBLIC SERVICES AND UTILITIES**

#### **3.13.4 Mitigation Measures**

##### **Mitigation Measures Proposed by the Applicant**

###### General

It is suggested that tax revenues generated by the Applicant's project would mitigate potential impacts to public services and utilities. This is incorrect due to Washington State law (I-747) that limits the growth rate of locally collected property tax to 1% per year. The installation of this project what put demands on the existing public service and utilities infrastructure in excess of revenues collected.

Examples of possible sources of increased support are noted following.

###### Law Enforcement

The potential for increased call rates to the sheriff's office to respond to property access violations of non-residents to the area.

###### Fire Protection

80% of this project lies outside of existing fire districts. The service level today offered by these districts to respond to fires is 'best effort'. This wind facility project introduces a significant increased fire risk to the area and the service level response must be increased. DNR helicopter based water drops will be ineffective due to the danger of approaching these very large structures by air in a windy environment. The suggested mitigations do not adequately address this increased fire risk.

### ***Summary of Comments***

This document has not provided any demonstrable public need for the insignificant amount of power this facility is capable of producing. No valid, compelling local (or even statewide) economic reasons were offered to potentially offset the overwhelming negative impacts that will result if built.

This DEIS is abundant in quantity, but extremely lacking in quality of scientific analysis and entirely deficient in analysis in certain areas. Various mitigations offered are unacceptable or unworkable.

The following are areas of analysis that were either deficient or not performed at all:

- List of offsite alternative locations regardless of cost incurred to transport the power produced.
- A two year avian baseline study for the whole Kittitas Valley to accurately assess potential cumulative avian mortality rates associated with the construction of multiple wind power facilities.
- Mapped raptor flight pattern study to determine local raptor hunting behavior.
- Study to locate Bald Eagle roosting sites outside of the project area to assess risk traveling to and from as it relates to the wind facility.
- Rodent population survey to determine raptor habitat desirability.
  - No analysis was offered on the potential effect of declining local raptor populations, increased local rodent populations, and the potential increased risk to local residents of exposure to Hantavirus.
- Studies to assess potential bat mortality.
  - Radar or other
- Night time point count and in-transit surveys to estimate potential owl mortality rates.
  - Night vision enabled.
- Visual simulations utilizing 3 MW wind turbines, on a non-hazy day, and against a cloudless sky.
- Visual simulations from the homes of residents living within the proposed project site.
- Low frequency noise analysis relating to the sound made when a rotor blade passes in front of the tower structure.

Mitigation measures offered in some cases are unworkable, insufficient, or unacceptable to local residents. In some cases, mitigations were not even offered.

In the general area of mitigating setbacks associated with individual turbine placement, conflicting or missing data indicates that the following generalized statements are insufficient.

- 1,000 foot setback from non-participating, neighboring land owner residences.
  - Shadow-flicker analysis provided indicates that a much greater distance is required to eliminate this effect.
  - A wildfire safety buffer zone to provide sufficient response time for local fire districts is needed.
  - Low frequency noise mitigation would suggest a much larger distance is required.
- 50 foot setback beyond the tip of the blade at its closest point to non-participating neighboring landowner property lines.
  - The same setbacks associated with neighboring land owner residences should apply to property lines in general. If not, then neighboring land owner's rights are being violated by limiting their ability to use their property in a fashion that may be impacted by wind turbine impacts.
- Turbine tip height setback from county/state roads.
  - Distance should be far greater due to the distracting influence of the shadow-flicker effect.
  - This should include private roads as well.
  - Additional safety impacts for blade throw and ice throw potential indicates this distance should be greater.

No setback mitigations were analyzed or offered to mitigate the observed hunting behavior of raptors along ridges at other operational wind facilities. This should be at least 50 meters (164 feet).

No operational mitigations to address cumulative impacts associated with the opportunity of noxious weed incursions due to tower base and turbine interconnect trench construction were offered. Shadow-flicker mitigations offered are unacceptable to locally affected residents.