Responses to Draft EIS Comments in Individual Letter 1 from Roy Draper, Kittitas Valley Resident

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Please refer to Local Agency Letter 2, Response 10 regarding the analysis of offsite alternatives.

   Section 3.9 of the Draft EIS acknowledges the quality of the views in the Kittitas Valley. However, the comparative uniqueness of these views compared to other areas in the state is not a part of the analysis. The Draft EIS does, consider the numbers and sensitivity of viewers and the extent to which the landscape has been altered for roads, agriculture, etc.

   Regarding the objectivity of the aesthetic impact analysis, every effort has been made to perform an accurate and fair assessment of the impacts based on widely accepted methods. However, the Draft EIS acknowledges that the nature of visual quality is inherently subjective and a certain amount of subjectivity is assumed in the process.

2. Thank you for your comment. Section 3.9 of the Draft EIS acknowledges the scenic quality of the area.

3. No expansions or additional activities are currently planned for this site. If the project were approved by the Governor, any expansion or modification of the project beyond the 65-maximum turbine configuration would require additional review by EFSEC. Also, please refer to State Agency Letter 3, Response 7.

4. Part of the mitigation that was "built-in" to the siting of the wind turbines considered the views from major thoroughfares such as I-90 and US 97. The Applicant specifically considered view-shed impacts when the project was reduced from the original proposal (approximately 120 turbines) to the 65-turbine layout under final consideration by EFSEC. The distance of the proposed turbines from I-90 will mitigate the impact from this particular highway.

5. Please refer to Key Issue B in Section 2 of this volume regarding property values.

6. As described in Section 3.4.2 of the Draft EIS, shadow-flicker is defined as alternating changes in light intensity when the moving turbine blades cast shadows on the ground and objects (including windows at residences). Shadow-flicker could occur in project area homes if the turbine is located near a home and is in a position where the blades interfere with very low-angle sunlight. However, shadow-flicker would not occur at all times the turbine generators are operating (even at slow speeds). Visual obstacles, such as terrain, trees, or buildings between the wind turbine and potential receptor (e.g., residence) would substantially reduce or eliminate shadow-flicker effects. Furthermore, shadow-flicker would occur only on days with sunshine and not on cloudy or foggy days.

The amount of time shadow-flicker would occur would depend on not only the location of the wind turbine and shadow-flicker receptor, but also which direction the wind is coming from. When the rotor plane is in-line with the sun seen from the receptor, then the cast shadow would be very narrow (because of the blade thickness) and the intensity very faint, especially at great distances. The shadow would also pass the receptor very fast, whereas when the rotor plane is perpendicular to the line between the receptor and the sun, the shadow would be wider (based on the rotor diameter) (Kittitas County 2004).

There is no correlation between the potential occurrence of shadow-flicker and interference of radio transmission signals associated with wind power projects. Please refer to Local Agency Letter 2, Response 19 regarding an updated analysis of the project's effects on radio communications.

Please refer to Key Issue B in Section 2 of this volume regarding property values.

7. Thank you for your comment.

8. Under Washington State law, one hundred percent renewable energy projects such as the KVWPP can choose to receive approval through EFSEC certification rather than through local government. The Applicant's decision to permit the project through EFSEC as opposed to through Kittitas County is not a matter for Washington State Environmental Policy Act (SEPA) review. EFSEC hearings on the project were held locally and the County has a voting representative on EFSEC for the review of this project. Therefore, opportunities for public comment and involvement before EFSEC are similar to those in the county process (Taylor, Prefiled Testimony, Exhibit 20).

   Pursuant to Washington Administrative Code (WAC) 463-28-040 (EFSEC Rules Relating to Siting Energy Facilities), the Applicant filed a request for preemption of the local land use and zoning ordinances of Kittitas County in June 2006, before EFSEC. As part of the land use consistency process conducted in 2005 and early 2006, a number of hearings were conducted before Kittitas County elected officials. This request is under review and consideration by EFSEC. If EFSEC approves the request and recommends to the governor that the state preempt local land use plans and ordinances, then EFSEC must include conditions that give due consideration to state, local governmental, or community interests affected by construction of the facility. EFSEC must also include conditions that consider the purposes of laws or ordinances, or rules or regulations superseded (WAC 463-28-070). Section 3.6 of the Final EIS has been revised to identify this request and proposed change in the permitting process.

9. Please refer to Local Agency Letter 2, Response 6 regarding distribution of the project's wind-generated energy.

   It is conceivable that none of the project's output would be sold at the retail level in Kittitas County if the power output from the project were purchased by a utility that does not serve the local area. Alternatively, if one or all of the electric utilities serving the County (PSE, City of Ellensburg, and the Kittitas County Public Utility District [PUD])

purchased electricity from the project, energy from the KVWPP would likely be blended with the respective utility's existing electric supplies and serve the local market. Therefore, it is likely that the proposed project would have little or no impact on the supply and price of electricity available to local consumers.

The SEPA rules (WAC 197-11-448) do not require agencies to address concerns such as quality of life in an EIS. The statute and rules envision general welfare, social, economic, and other considerations as factors decision-makers would evaluate apart from the environmental impacts addressed in an EIS. Quality of life considerations also fall within the realm of social policy analysis. Expectations or perceptions of decreased quality of life as a result of an action are typically based on specific causal factors such as noise, traffic, and visual impacts, which are standard topics in SEPA documents. Please refer to Responses 1 through 8 of this letter.

10. Thank you for your comment. Your opposition to the project is noted.

Responses to Comments in Individual Letter 2 from Mike Nienaber

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment.

2. Thank you for your comment. Your support for the project is noted.

Responses to Comments in Individual Letter 3 from Chris Cole and Roger Binette

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Your comment is noted.

2. Your comment is noted.

3. The Draft EIS references several studies completed for operating wind farms that are relevant to the proposed project (e.g., Johnson et al. 2000a, 2000b, 2002, 2003 and Erickson et al. 2000, 2001).

4. Thank you for your comment.

5. The Draft EIS relies on factual, unbiased reports. The Lincoln Township Wind Turbine Survey in Wisconsin mentioned in your comment has been removed from the University of Wisconsin Extension Web site because it has not been peer reviewed by the Extension, and the University cannot endorse the information contained in the document. Therefore, the results of this survey cannot be accurately relied upon.

6. Thank you for your comment.

7. Thank you for your comment.

8. Thank you for your comment. Please refer to Response 5 of this letter.

Responses to Comments in Individual 4 Letter from Daniel A. Green, Jr.

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment. Your support for the project is noted.

Responses to Comments in Individual Letter 5 from Daniel A. Green, Jr.

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment. Your support for the project is noted.

2. Thank you for your comment. Your support for the project is noted.

Responses to Comments in Individual Letter 6 from Daniel A. Green, Sr.

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment. Your support for the project is noted.

Responses to Comments in Individual Letter 7 from Daniel A. Green, Sr.

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment. Your support for the project is noted.

2. Thank you for your comment. Your support for the project is noted.

Responses to Comments in Individual Letter 8 from Karl Krogstad

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment. Your support for the project is noted.

Responses to Comments in Individual Letter 9 from Mitch Meffert

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. The Draft EIS presented the existing process (as of December 2003) for a wind power project to achieve local land use consistency in Kittitas County. Please refer to Individual Letter 1, Response 8 regarding the project permitting process and opportunities for public comment.

2. California's energy crisis is the product of many factors but was primarily caused by the deregulation of energy markets. Deregulation allows private developers to develop and sell power resources, in addition to traditional energy suppliers such as utilities and public utility districts. Some power companies tried to manipulate the market to raise their profits, sparking the peak of California's energy crisis. What first appeared to be a favorable scenario for wind power, an abundant resource in California and neighboring states, quickly turned into a problem. As electricity prices soared, state agencies began signing high-cost, long-term contracts for new natural gas generation, while refusing to buy electricity from lower-cost "non-firm" (variable) generators like wind plants (Swisher 2003).

3. Please refer to Local Agency Letter 2, Response 6 and Individual Letter 1, Response 9 regarding distribution and price of the project's wind-generated electricity.

   The SEPA rules (WAC 197-11-448) do not require agencies to address concerns such as tax treatment of the wind energy industry in an EIS. The statute and rules envision general economic considerations as factors decision-makers would evaluate apart from the environmental impacts addressed in an EIS.

   In addition to increased tax revenue, project benefits would include, but not be limited to, the following:

   - additional job opportunities for local residents (especially during construction),
   - increased revenue for local businesses that supply materials and services necessary for construction and operation, and
   - increased revenues for commercial businesses that would support the construction workforce (such as hotels and restaurants).

4. Thank you for your comment.

Responses to Comments in Individual Letter 10 from Mitch Meffert

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. The enXco, Inc. proposal referenced in this comment (also referred to as Desert Claim) is the subject of a separate EIS. Kittitas County issued the Desert Claim Wind Power Project Final EIS in August 2004.

   Mitigation is defined under the Washington State Environmental Policy Act (SEPA) regulations as avoiding, minimizing, rectifying (repairing), reducing, eliminating, compensating, or monitoring environmental impacts (see WAC 197-11-768). Mitigation may be suggested by the applicant; mandated by local, state, and federal regulations; or required through the use of SEPA substantive authority. Under SEPA substantive authority (WAC 197-11-660), mitigation measures must be related to a specific adverse impact clearly identified in an environmental document (WAC 197-11-744) on the proposal, and must be reasonable and capable of being accomplished (WAC 197-11-660[1] [b] and [c]).

   Mitigation identified by the Applicant and recommended in the Final EIS would adequately mitigate all but one of the potentially significant adverse impacts associated with the proposed project. The only significant unavoidable adverse environmental impact identified in the KVWPP Final EIS that cannot be mitigated is the visual impact of the proposed turbines.

   You are asking the Applicant to financially compensate neighboring landowners who did not sign wind option agreements for the proposed project. This type of mitigation is not warranted for the proposed project. If an adverse environmental impact were to occur and a regulatory threshold was exceeded, the certificate holder (i.e., the Applicant) would be subject to compliance enforcement according to applicable EFSEC rules and would be required to provide mitigation appropriate to the impact.

Responses to Comments in Individual Letter 11 from Al and Diane Schwab

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment.

2. Kittitas County ordinances for setbacks and protection of natural resources in accordance with Kittitas County Code (KCC) and the Kittitas Critical Areas Ordinance (KCC 17A) would determine to some degree possibilities of placement of a new residence on a nonparticipating property. Setback distances from structures will be considered by EFSEC based on testimony presented through the adjudicative process. If EFSEC recommends approval, and the Governor approves the project, Horizon Wind would be required to demonstrate that all setbacks laid out in the Site Certification Agreement are being met in their final project layout. In addition, the Washington State Vested Rights Doctrine would establish priority in development rights with respect to residences permitted and built in the future.

3. The primary purpose of an EIS is to provide an impartial discussion of potential environmental impacts and reasonable alternatives and mitigation measures that will avoid or minimize adverse environmental impacts. The Draft EIS reflects the independent judgment of EFSEC's consultants based on relevant and available data. The Draft EIS authors' independent and objective evaluation of the project discloses a full range of potential impacts to the surrounding community, ranging from the nuisance effects of shadow-flicker to the unavoidable adverse impact of flashing lights at night.

4. Washington Administrative Code 173-60 establishes maximum permissible environmental noise levels that are applicable to Kittitas County and, therefore, also applicable to the project site. These maximum noise levels are objective thresholds against which all noise-generating activities are measured. Daytime noise levels for residential structures are required by WAC 173-60 not to exceed 60 decibels on the A-weighted scale (dBA), while nighttime levels are not to exceed 50 dBA. This is the significance threshold against which noise impacts are measured. The regulatory noise limits applied to a wind power project do not mean that the turbines would necessarily be inaudible to all of its neighbors, at all times, under all conditions. The limits do, protect the amenity of neighbors and ensure that the development can reasonably be expected to not disturb them.

5. Section 3.12 of the Draft EIS acknowledges that residences located near the project site could be exposed to moderate to high levels of construction noise, and that nearby residents could potentially be disturbed by blasting activities. However, state regulations (WAC 173-60-050) specifically exempt construction activity noise impacts to residential properties between 7 a.m. and 10 p.m. During turbine erection, some construction activities may occur during evening (dusk) or nighttime hours to allow for construction in low wind conditions (see Section 3.9 of the Draft EIS). However, the Draft EIS does not state that construction would occur 24 hours a day, 7 days a week. The Final EIS includes

the Applicant's commitment to limit blasting and loud construction activities to the period of 7:00 a.m. to 10:00 p.m.

6. Both the Draft EIS and January 2003 Application for Site Certification (ASC) state that approximately one half of the projected jobs attributable to project operations would be expected to be filled by local Kittitas County residents. Operation of the KVWPP is projected to require 12-14 full-time employees, half of which (6 to 7 individuals) would represent local workers from Kittitas County (see Section 3.7 of the Final EIS). This estimate is consistent with the range of operational jobs presented in the January 2003 ASC for the originally larger project. Section 8.1.3.1 of the ASC states: "The project is expected to require 16 to 18 total workers during operations, and some of them may be persons already residing in Kittitas County." Section 8.1.3.3 of the ASC states: "During operations, it is estimated that 9 local workers from Kittitas County would be employed to operate and manage the wind plant." The in-migrant population of 16 to 23 individuals represents the *total* (emphasis added) additional population to Kittitas County as a result of wind power operations based on a 2000 countywide average household size of 2.3 persons per household.

7. The discussion of "viewsheds" in Section 3.7 of the Draft EIS is in the context of the project's potential effects on property values. A viewshed is the total visible area from a single observer position, or the total visible area from multiple observer positions. In the context of the Renewable Energy Policy Project (REPP) property values study, the viewshed is defined as the area within a 5-mile radius of the wind farms under investigation. Therefore, properties within 500 feet of a wind turbine string would reasonably be considered part of the project's viewshed. This is supported by Exhibit 22-2, Potential Local Project Visual Impacts, in the Applicant's January 2003 ASC.

   A study by P. Barton De Lacy of PGP Consulting LLC in Portland, Oregon, (conducted after the Draft EIS was issued) supports the document's conclusions that there is no evidence that the proposed action would adversely affect local property values. For further information, see De Lacy, Prefiled Testimony, Exhibit 36. Also, please refer to Key Issue B in Section 2 of this volume regarding the general topic of wind power projects and property values.

   You refer to survey results found on the Internet that support the claim that the proposed wind turbines would result in decreasing property values, but you do not identify this study by name. Please refer to Individual Letter 3, Response 5 regarding the reliability of the Lincoln Township Wind Turbine Survey.

8. The Draft EIS acknowledges that residences located along Cricklewood Lane and the lower and middle sections of Elk Springs Road that are within 0.5 mile of the proposed turbines would have unobstructed views of the turbines; therefore, view sensitivity from these residences is classified as high.

9. The Draft EIS acknowledges that despite the fact that no scenic corridor management plan has been prepared for US 97, its designation as Scenic and Recreational Highway

carries an additional level of care and scrutiny in the review of potential aesthetic impacts.

10. The Draft EIS recognizes the project's risk of fire hazard at and surrounding the project site, and the Applicant is committed to preparing emergency plans that address the needs of both onsite personnel and the surrounding community. As stated in Section 3.13 of the Draft EIS, onsite emergency plans would be prepared to protect the public health, safety, and environment on *and off* (emphasis added) the project site in the case of a major natural disaster or industrial accident relating to or affecting the project. The plans would describe the emergency response procedures to be implemented during various emergency situations that may affect the project *or the surrounding community* (emphasis added) or environment. The Applicant would enter into a contract with the applicable fire district(s) for fire protection services during construction. Fire or emergency services during project operation would be paid for by the project on a cost recovery basis. If an emergency occurs, the responding district(s) would bill the Applicant for their actual costs of responding. The terms of this cost-recovery service would be memorialized in a contract executed prior to project operations.

11. Navigational lights on the proposed turbines are a requirement of the Federal Aviation Administration (FAA). The FAA has determined that with implementation of proposed lighting requirements, the towers would not pose a navigational hazard to aircraft. Because FAA regulations for air transportation are developed to ensure aviation safety, actions that are consistent with those regulations can reasonably be presumed to be safe.

    Flights conducted outside the airspace protected for Bowers Field require aircraft operation that is consistent with safe and legal flight procedures, as established by the FAA. The FAA regulations require that aircraft outside of other controls (such as instrument arrival or departure procedures or visual flight rule procedures) must at all times maintain a safe minimum flying altitude. This requirement applies to flight training and general overflight activity. The majority of the KVWPP would be located on private land, and the owners of structures on private land are afforded the protection of the FAA regulations, as long as the structures are built and maintained consistent with the regulations. The regulations acknowledge that human activity will result in the construction of tall objects that could be obstacles for aviation, which is a primary reason for the FAA safety lighting requirements. Development of the proposed action would result in no aviation safety issue as long as aircraft fly in accordance with the legal requirements of the FAA regulations, and the project is built and operated in accordance with the safety lighting requirements.

12. The No Action Alternative is typically defined as what would be most likely to happen if the proposal did not occur. If a rezone were proposed, then the No Action Alternative would be defined as the most likely development on the site under existing zoning. Residential development and other permitted uses such as agricultural practices, quarrying, and mining could occur at the project site under existing local land use and zoning designations if the KVWPP is not developed.

Section 2.7 of the Final EIS has been revised to redefine the No Action Alternative. Please refer to State Agency Letter 3, Response 5.

13. Please refer to Local Agency Letter 2, Response 57 regarding the ability of EFSEC to enforce SEPA mitigation measures.

14. The timing of implementing project mitigation measures will vary depending on the nature of the impact and the resource(s) affected. "Premitigation" has already been implemented during the project's initial site evaluation phase. For example, an earlier layout of individual turbines and turbine strings in the project area was evaluated during the early stages of project development and subsequently refined through elimination of specific turbines/strings to reduce potential impacts. Mitigation recommended in the Draft EIS will be refined through the environmental review process and, if the project is recommended and approved, will be included as part of the Site Certification Agreement.

15. Please refer to Individual Letter 10, Response 1 regarding financial compensation as mitigation for local property owners.

16. Thank you for your comment.

17. Thank you for the photographs submitted as part of this comment.

Responses to Comments in Individual Letter 12 from Bernice Best

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment.

2. Thank you for your comment.

3. Please refer to Individual Letter 11, Response 2 regarding project setbacks from future development on nonparticipating properties.

4. Thank you for your comment.

5. Thank you for your comment.

6. Alternative forms of hunting, such as archery, could be allowed on Washington Department of Natural Resources (DNR) lands to the extent that the activity does not unreasonably interfere with the wind power project as defined in the June 2003 lease between DNR and the Applicant. DNR would need to initiate this type of activity.

   In addition, on November 7, 2003, the Cascade Stream and Field Club submitted to Kittitas County an application for a conditional use permit to operate a firing range on their property. The Cascade Stream and Field Club also has an agreement with the Applicant that would allow them to place wind turbines (B1 through B4) on their property. In addition to rifle, pistol, and shotgun (trap/skeet) ranges, the proposed development would include facilities for archery (refer to attachment to Organization Letter 4).

7. Thank you for your comment.

8. Thank you for your comment.

9. Thank you for your comment.

10. Thank you for your comment. Please refer to Local Agency Letter 2, Response 6 regarding project power distribution and end users.

11. Thank you for your comment.

12. Thank you for your comment. Your support for the project is noted.

Responses to Comments in Individual Letter 13 from Jim Stewart

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment. Additional sites have been evaluated as part of the Final EIS. Please refer to Local Agency Letter 2, Response 10.

2. Thank you for your comment.

3. The KVWPP does not comply with the Kittitas County Zoning Code. However, Kittitas County categorizes wind farms as a utility use, not an industrial use.

4. Section 3.13.2 of the Final EIS has been revised to include the results of a study evaluating the project's effects on federally licensed amateur radio use in the project area (refer to Local Agency Letter 2, Response 19). Comsearch, the same company that prepared the Microwave Telecommunication Study for the project, prepared this study. These two studies conducted for the Applicant are both professional and accurate.

5. Please refer to Response 4 of this letter. The reference to the "frequency band of interest to the local resident" has been deleted from Section 3.13.2 of the Final EIS.

6. The Ellensburg Cement Products noise study conducted for the Thomas Quarry site and the noise impacts attributable to quarry operations are not relevant to the review of the proposed project.

   No rock crushing operations are proposed during construction at the project site. However, cobbles and boulders too large for reuse as backfill at the project site during construction would be transported to the existing permitted quarry west of Bettas Road near the G turbine string for crushing prior to reuse. This would represent a temporary noise impact.

   When addressing the effects of noise on people, it is necessary to consider the frequency response of the human ear, or those frequencies that people hear best. As described in Section 3.12.1 of the Draft EIS, noise levels are stated in terms of decibels on the A-weighted scale (dBA). This scale reflects the response of the human ear by filtering out some of the noise in the low- and high-frequency ranges that the ear does not detect well.

   Although not specifically addressed in the State of Washington noise regulations, low-frequency sound that could disturb residents near the wind turbines has been identified as a concern. Historically, low frequency noise from wind turbines has been produced by the flow of air over the blades or around the nacelle or tower. However, as the technology has matured, several methods of reducing this type of noise have emerged. The following noise-reducing methods are outlined in the document *Permitting of Wind Energy Facilities* distributed by the National Wind Coordinating Committee (NWCC 2002):

- Orienting rotors on the upwind side of the turbine tower avoids the low frequency sounds associated with the passage of the blades through the tower's wind shadow, as occurs on downwind machines.
- Tubular towers and modern nacelles are streamlined and produce little or no sound with the passage of the wind.
- As blade airfoils have become more efficient, more of the wind is converted into rotational torque and less into acoustic noise.

As acknowledged in the Draft EIS, the KVWPP would use the upwind turbine design, in which the rotor is turned into the wind to place the generator and tower behind the blades. Also, the towers and nacelle would be more streamlined than older turbine designs. Furthermore, soundproofing in nacelles would be increased. The generator, gears, and other moving parts located in the turbine nacelle produce mechanical noise. Soundproofing and mounting equipment on sound-dampening buffer pads will help to deal with this issue. Therefore, low-frequency noise impacts are not anticipated.

7. Please refer to Response 6 of this letter regarding the relevancy of the Ellensburg Cement Products study.

The process used to model predicted noise levels from the KVWPP is tailored to address the specific needs of a wind power plant. The three-dimensional noise model used for the KVWPP was developed using a sophisticated program developed by DataKutik, GmbH of Munich, Germany. The algorithms are based on the International Standard ISO-9613-2 "Attenuation of Sound During Propagation Outdoors." The ISO 9613-2 describes a process for calculating sound levels at a distance from a source based on distance attenuation, terrain or barrier effects, atmospheric attenuation, ground effects, directivity of the source, and meteorological influence. Octave band sound power levels for the wind turbines and topographic information from the U.S. Geological Survey were input into the model.

The results of this modeling demonstrate that predicted noise levels at your property line would be between 35 to 40 dBA, well below the maximum permissible noise level of 70 dBA. The noise analysis in the Final EIS has been updated to identify the noise impact to your residence. Table 3.12-5 and Figure 3.12-2 of the Final EIS has been updated to show that the cabin on your property is located just outside the 35-dBA noise contour.

The regulatory noise limits applied to a wind power project do not mean that the turbines will necessarily be inaudible to all of its neighbors, at all times, under all conditions. They do, however, protect the amenity of neighbors and ensure that the development can reasonably be expected to not disturb them.

Note: Since issuance of the Draft EIS the property discussed in this comment has been sold to Noel Martin. Noise data for this residence and property line is shown in Table 3.12-5 of the Final EIS under the name of the new owner.

8. Thank you for your comment. The noise effects of gunfire at the Cascade Field and Stream Club are noted.

9. The Draft EIS presents an objective and legitimate analysis of potential noise impacts in the project area. Please refer to Responses 4 and 7 of this letter regarding updates to the radio interference and noise impact analyses, respectively.

10. Draft EIS Figure 3.9-2 does not show the location of structures but does label property ownership for those owners immediately adjacent to the project site. Existing structures are shown in Figure 3.12-2 of the Final EIS.

    Figure 3.12-2 identifies structure number 11 ("Jake's place") and structure number 12 (Chris Hall). These two properties were not included in the noise impact analysis, as documented in Table 3.12-5 of the Draft EIS, because their respective structures are clearly located well outside the 35-dBA noise contour line, and therefore would not be affected by project noise.

    During aerial mapping of the project area in 2002, the Applicant surveyed the L. Schaller, Zeller, and Boyd & Twogood properties. Structures on these three properties were not mapped, nor were they included in the noise impact table, because they either did not exist at the time or they did not appear to be habitable (e.g., a shed or outhouse).

    According to Kittitas County property tax records, both Jackson (structure number 149) and Stewart, now Martin, (structure number 10) have cabins on their properties. Table 3.12-5 of the Final EIS has been updated to include these structures, and they have been evaluated as part of the noise analysis.

    Property ownership is fluid and can change over time. Therefore, several parcels of land in the project area have changed ownership since the noise figures and tables were prepared.

11. As stated in Section 3.9 of the Draft EIS, not every potential view receptor in the project area has been documented. Individual viewpoints used in the Draft EIS visual impact analysis were chosen as being the most representative views for the different roads, population areas, and recreation areas where views of the wind turbines would occur. The closest representative viewpoint would be Viewpoint 5 along Bettas Road. Although it is located at a lower elevation relative to your property, the visual quality is characterized as moderately high at Viewpoint 5.

12. The Draft EIS relies on factual, unbiased reports that have been independently reviewed for adequacy in compliance with EFSEC's rules and regulations. The Draft EIS author's independent evaluation of the project discloses a complete and accurate range of potential impacts to the surrounding community.

13. Thank you for your comment. Please refer to Response 12 of this letter.

14. Thank you for your comment.

Responses to Comments in Individual Letter 14 from Jim Stewart

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. This comment correctly characterizes the relationship between the Applicant, EFSEC, and EFSEC's independent consultant.

2. Neither the Applicant, EFSEC, nor EFSEC's consultant have a record of receiving a list of the structures (with walls) in the area of your residence. Please refer to Individual Letter 13, Response 10.

3. Thank you for your comment.

Responses to Comments in Individual Letter 15 from Ed Garrett and Rosemary Monaghan

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. The purpose of the Draft EIS is to present objective and accurate disclosure of the project's potential environmental impacts. The fact that 19 miles of new roads and improvements to 7 miles of existing roads would be required for the proposed project was disclosed in the Applicant's January 2003 Application for Site Certification (ASC) (Section 2.3.2.1). The need for 23 miles of underground electrical power lines was disclosed in Section 2.3.4 of the ASC. These facts were also included in EFSEC's project handout provided at the March 12, 2003, public scoping meeting. The data was updated in the Final EIS to reflect a maximum 65-turbine project. Bettas Road would not have to be substantially modified to accommodate the proposed project.

   Please refer to State Agency Letter 3, Response 26 regarding updated calculations of project roadway lengths.

   The loss of habitat, including shrub steppe, associated with constructing new roads and trenches throughout the project area has been fully evaluated and mitigated in accordance with the Washington Department of Fish and Wildlife (WDFW) Wind Power Guidelines (WDFW 2003d) for siting and mitigating wind power projects east of the Cascades. The Applicant proposes to acquire and enhance a 550-acre mitigation parcel that would meet or exceed the required habitat replacement ratios under the WDFW Wind Power Guidelines for any of the scenarios. WDFW has concluded that this proposed parcel would provide adequate mitigation for potential impacts to wildlife habitat, including shrub steppe.

2. Please refer to Key Issue A in Section 2 of this volume regarding the project definition. The proposed project setbacks from residences and property lines take into account the different sizes of turbines proposed.

3. Please refer to State Agency Letter 3, Response 4 regarding demonstrated need for the proposed project. Please refer to Organization Letter 8, Response 3 regarding the effect of energy conservation on reducing the need for new power generation sources. Section 2.7 of the Final EIS has been revised to redefine the No Action Alternative to include energy conservation practices. Please refer to State Agency Letter 3, Response 5.

4. Please refer to State Agency Letter 3, Response 4 regarding demonstrated need for the proposed project.

   Wind is an intermittent resource, meaning that it only produces energy when the wind blows. Its output is "as available," meaning that, even with accurate forecasting, the exact timing of its energy output cannot be precisely predicted. These characteristics are not desirable, but they are not fatal. These characteristics are also shared by electricity demand itself (Caldwell 2001).

In addition to historical, local wind data, the Applicant has been studying the wind on the project site and in the project area using meteorological towers to determine if a wind project could be viable at this location. Viable wind projects generally have a capacity factor of over 30% (that is, they produce power at least one-third of the time). Modern turbines operate more efficiently and at lower wind speeds. The Applicant believes there is enough wind resource at the proposed project site to have a viable project.

A power project's capacity factor is defined as the amount of energy it generates in a year divided by the amount of energy it could have generated if it operated at full output capacity and remained on-line and operating 100% of the time for a full year. Fuel-burning power plants operate within a wide range of capacity factors. These factors range from as low as 2% to 3% for peaking generators, which come on line only to meet super peak demands a few times per year and accommodate for low water years, to as high as 60% to 80% for some of the primary system generators. Northwest hydroelectric power system facilities operate typically with capacity factors in the 40% to 60% range, with the average running at about 50%. The KVWPP is expected to operate with annual capacity factors of approximately 33%, depending of the amount of wind that flows through the Kittitas Valley in a year.

A power project's average capacity is defined as the average amount of power output a facility generates over a full year:

Average Capacity = (Capacity Factor)(Nameplate Capacity)

This is also called the "average MW" (aMW) of a plant.

The Final EIS has been updated to reflect the approximate nameplate capacity of the project, ranging from 97.5 to 195 MW, which is defined as the maximum output at a given time. The project is expected to have a 33% net capacity factor, and therefore would generate between 32 and 64 aMW.

Regardless of the percentage contribution to meeting projected electricity demand in the Pacific Northwest, the proposed wind power project would provide an alternative form of energy to supplement current energy supply resources. For example, based on the 2002 Washington State Electricity Fuel Mix Report, Washington customers' electric power comes primarily from hydroelectric power (71.59%). Wind power can help reduce the region's over-reliance on hydroelectric power, particularly in low water and drought years (Ling, Prefiled Testimony, Exhibit 70). A diversity of power generation sources is important to maintaining a stable and reliable power supply.

5. The majority of electricity produced in Washington is generated by hydroelectric power. Please refer to Response 4 to this letter. For comparison, renewable resources represent 94.8% of the total electricity generated by the electric power industry in Idaho (Energy Information Administration 2002).

6. Thank you for your comment. Information on existing rural residential subdivisions in the project area, including the Horse Canyon Estates project, has been included in revisions to Section 3.6.1 of the Final EIS.

7. Identifying landowners with signed wind option agreements with the Applicant and discussing whether or not they live in the project area is not germane to the purpose of an EIS. The purpose of an EIS is to provide impartial discussion of potential environmental impacts (WAC 197-11-400[2]). Impacts to landowners would exist regardless of whether they have signed agreements with the Applicant. The Draft EIS, however, does acknowledge that landowners with signed wind option agreements would receive financial compensation as a result of the project; these benefits are discussed in Section 3.7 of the Draft EIS.

   The Draft EIS (see Section 3.6.1) acknowledges that there are approximately 60 dwellings within 1 mile of the proposed project. The issue of support for or against the project is similarly not germane to the purpose of an EIS.

8. Please refer to Individual Letter 11, Response 2 regarding local siting constraints and project setbacks from future development on nonparticipating properties.

9. While it is true that the Pacific Northwest currently enjoys a surplus of electricity (Northwest Power and Conservation Council 2004), there is increased interest on the part of state governments to pursue development of renewable energy resources as opposed to conventional power plants. For example, Washington state legislators are considering numerous bills encouraging increased use of renewable energy. It is estimated that if these bills were enacted in Washington, the new policies would attract more wind industry to the state and stimulate local and statewide economic benefits in the form of land lease payments, property tax revenues, and wages (Media Background 2004).

   Section 2.7 of the Final EIS has been revised to redefine the No Action Alternative. Please refer to State Agency Letter 3, Response 5.

10. Thank you for your comment. Please refer to Local Agency Letter 2, Response 10 regarding additional analysis of offsite alternatives.

11. The Draft EIS states that the Applicant has been *communicating* (emphasis added) and meeting with agencies, Indian tribes, the public and nongovernmental organizations throughout development of the proposed project. The issue of support for or against the project is not germane to the purpose of an EIS, which is to provide impartial discussion of environmental impacts (WAC 1970110400[2]).

    Please refer to Organization Letter 5, Response 4 regarding the Applicant's efforts for further coordination with the Yakama Nation. Please refer to Individual Letter 1, Response 8 regarding the project permitting process.

12. Sections 1.7.2 and 3.7 of the Final EIS have been revised to identify differences in construction and operational employment numbers and in property tax impacts between the proposed action scenarios.

13. Recent studies conducted in Europe and anecdotal evidence within Australia indicate that wind developments do not negatively influence tourism and may in fact be having a positive effect (Australian Wind Energy Association 2004). For example, an independent 2002 survey commissioned by the British Wind Energy Association (BWEA) and the Scottish Renewables Forum and performed by Market & Opinion Research International (MORI) provides strong evidence that wind farms do more to benefit than harm tourism (MORI 2002). MORI interviewed tourists visiting Argyll and Bute, Scotland, an area chosen because it currently has the greatest concentration of wind farms in Scotland. Furthermore, the area also has a tourism industry reliant on the area's high landscape value. Almost half (48%) of the respondents who came to the area reported doing so for the scenery (as opposed to 10% who said they came for music festivals, the next most reported reason). Forty percent of tourists interviewed were aware of the existence of wind farms in the area. When they were asked whether this presence had a positive or negative effect, two in five (43%) maintained that it had a positive effect, while a similar proportion (43%) felt it made no difference. Less than 1 in 10 respondents (8%) felt that wind farms in the area had a negative effect. The majority of tourists who knew about the wind farms came away with a more positive image of the area because of their presence.

    When respondents were asked whether the presence of wind farms in Argyll made any difference to the likelihood of them visiting the area, 91% said it made no difference. Twice as many people said they would be "more likely" to visit again than the amount who would be "less likely" to visit. Tourists were also asked to what extent they would be interested in visiting a wind farm if it were opened to the public with a visitor center. The majority of respondents (80%) would be interested, with over half (54%) responding that they would be "very interested." Around one in five were "not interested." These data show that tourism and wind farms can co-exist, and that wind farms can actually have a positive impact on tourism by helping promote a positive image of an area and encouraging repeat visits. The high interest in going to a wind farm visitor center in Scotland reflects the strong trend in increasing environmental awareness of the public and, in particular, underscores the public's desire to learn more about what is actually being done to help reduce our reliance on fossil fuels.

    Little research on wind farms' effect on tourism has been carried out in Australia. However, polling carried out by AusPoll for Pacific Hydro echoes recent research in the United Kingdom that wind farms are likely to have a net positive effect on tourism. There is also ample anecdotal evidence in Australia to show that wind farms have positive tourism potential. For example, an AusPoll survey conducted in 2001 for Pacific Hydro on the Portland Wind Energy Project in Victoria, Australia, showed that 94% of Portland residents described wind generators as "interesting" and 74% described them as "graceful." A separate AusPoll survey asked, "Specifically thinking about the tourism impact of building windmills, would you be more or less likely to visit a coastal area for a holiday or day trip if there were electricity generating windmills in the area?" In response

to this question, 36% of those surveyed said yes, 55% indicated that it would make no difference, and only 8% said they would be less likely to visit the area (Australian Wind Energy Association 2004).

Please refer to revisions to Section 3.7.2 of the Final EIS for a discussion of how project-induced tourism would be expected to affect the local economies of Ellensburg and Kittitas County. Also, please refer to Local Agency Letter 2, Response 17 for more information regarding the project's effects on tourism.

14. Please refer to Tribal Letter 1, Response 4 regarding the adequacy of the baseline wildlife study and State Agency Letter 2, Response 16 regarding the regarding the permitting process for incidental take of a bald eagle.

15. Please refer to Tribal Letter 1, Response 4 regarding the adequacy of the baseline wildlife study and to Organization Letter 8, Response 11 regarding nighttime wildlife surveys.

    Avian mortality data have been collected at well over 20-wind power projects, with many located in areas bald eagles are known to use. The data indicate that no bald eagle fatalities have been reported. As stated in Section 3.2.3 of the Draft EIS, "Although the risk is low, the potential exists for bald eagle fatalities during operation of the project."

    Please refer to State Agency Letter 2, Response 16 regarding the Bald Eagle Protection Act, project Habitat Conservation Plan, Endangered Species Act, and incidental take.

16. The operating wind plants used in the analysis presented in the Draft EIS (such as the data presented in Table 3.2-12) more closely resemble the proposed project site layout and technologies, and are therefore more representative of the proposed project. Furthermore, studies conducted at the Altamont Pass Wind Resource Area (APWRA) have focused on raptor populations and lack of detailed fatality monitoring of small birds. For these reasons, use of this study was not deemed to be appropriate for inclusion in the KVWPP analysis.

    The Applicant has undertaken extensive preconstruction wildlife studies at the KVWPP site, and the level and extent of bird and bat mortality found at the APWRA site is not anticipated.

    Please refer to Organization Letter 8, Response 2 for more information regarding project comparisons to the APWRA.

17. Thank you for your comment. Section 3.2.5 of the Final EIS has been revised to acknowledge that any loss of a bald eagle would be considered a significant unavoidable adverse impact.

18. Golden eagles are protected under the Bald Eagle Protection Act, as discussed in Section 3.2.1 of the Draft EIS. As stated in Section 3.2.3, "Golden eagle use of the site is low relative to other wind sites and the mortality risk for golden eagles is also expected to be

low." As presented in Table 3.2-11, projected annual mortality rates for raptors (including golden eagles) is 2 to 3 individuals.

The comment letter includes a photograph of a decapitated golden eagle at the APWRA. A 1992 study commissioned by the California Energy Commission conservatively estimated that 39 golden eagles were killed at APWRA annually (Bradley 1998). Avian mortality rates at the APWRA are not indicative of the wind energy industry in general; the American Wind Energy Association reports that the APWRA is located near one of the largest nesting populations of golden eagles in the world (2003). The APWRA is also characterized by high, year-round raptor use; an ample amount of raptor prey; and many closely placed small turbines (NWCC 2002). Raptor death frequencies are higher at the APWRA site than at any other site where avian fatality monitoring has occurred (NWCC 2002).

Please refer to Organization 8, Response 2 for more information regarding project comparisons to the APWRA.

19. Please refer to State Agency Letter 3, Response 13 regarding the Technical Advisory Committee that will be established to evaluate the mitigation and monitoring program and to address the potential decommissioning or moving of turbines if wildlife mortality rates exceed EIS estimates. Please refer to Local Agency Letter 2, Response 57 regarding the ability of EFSEC to enforce the project's mitigation measures.

    The recommendations by Western EcoSystems Technology, Inc. (WEST, Inc.) for turbine placement are based on site-specific information collected at each project site. For example, turbines at the Foote Creek Rim Wind Project in Wyoming were moved back away from the ridgeline because baseline data detected a pattern of raptor use along the edge of the rim (Johnson et al. 2000a). However, the topographic and meteorological conditions and avian use patterns at the Foote Creek Rim and Desert Claim (i.e., enXco, Inc.) projects are different than those at the KVWPP site; therefore, the recommendation for setbacks from ridgelines would not be merited. Also, refer to State Agency Letter 3, Response 18 regarding setbacks from ridgetops.

20. The amount of water required to clean construction vehicles prior to bringing them into the project area is accounted for in the estimated 1 million gallons of water required for construction-related needs other than for dust control (Taylor, pers. comm., 2004).

21. As described in the Section 3.4.2 of the Draft EIS, lightning-induced fires are rare in the project area. Additionally, protection against lightning strikes is built into the electrical systems of all wind turbine projects. The wind turbine generators and other mechanical equipment at the substation and meteorological towers would be equipped with specially engineered lightning protection systems that would minimize the risk of lightning-induced fire during project operations. The same systems intended to minimize the risk of lightning-induced fire would also protect against damage to the turbines and the release of hazardous materials to the ground. Furthermore, extensive spill prevention and

containment measures, as described in Section 3.4.4 of the Draft EIS, are designed into the project to reduce potential release of hazardous materials to the environment.

Section 3.13.1 of the Draft EIS acknowledges that the majority of the project site is located outside of any fire district. However, the Applicant would enter into a contract with the applicable fire district(s) for fire protection services during construction, and the need for fire or emergency services during project operation would be paid for by the project on a cost-recovery basis.

22. It is extremely rare that a turbine tower collapses, but it has occurred, as is evidenced by pictures available on the Internet. For example, a Vestas V39 tower collapsed in France due to delinquent operational procedures, and a prototype V80 machine on a 100-meter (328-foot) tall tower collapsed in Germany as a result of a weak weld in the tower flange (Jorgensen, Prefiled Testimony, Exhibit 37). Section 3.4.2 of the Final EIS has been revised to incorporate this updated information on the incidence of tower collapse at operating wind power facilities. Measures to minimize safety and property damage risks are presented in Section 3.4.3 of the Final EIS.

23. Section 3.4.4 of the Draft EIS recommends that the Applicant's proposed tip height setbacks from public roads should be amended to include private roads used by landowners to access their properties. However, these recommended safety setbacks would not apply to new private roads constructed by the Applicant specifically for the project (please refer to Organization Letter 5, Response 16).

Please refer to Local Agency Letter 2, Responses 48 and 49 regarding the adequacy of proposed setbacks to minimize safety risks associated with tower collapse and blade throw, respectively. The Applicant's proposed setbacks are minimum distances for the protection of human health and safety at and around the project site.

The comment claims that heavy winds, measured in excess of 70 miles per hour (mph) in the project area, may increase the risk of tower collapse across Cricklewood Lane. As stated in Section 2.2.3 of the Draft EIS, the recent maximum-recorded gust in the project area is 56 mph. However, the turbine towers and foundations would be designed to survive a gust of wind more than 90 mph with the blades pitched in their most vulnerable position; therefore, the risk of a tower collapse caused by heavy winds would be extremely low.

24. Please refer to Local Agency Letter 2, Responses 48 and 49 regarding the adequacy of proposed setbacks to minimize safety risks associated with tower collapse and blade throw, respectively. The adequacy of proposed setbacks to minimize safety hazards from ice throws is discussed in detail in Response 27 of this letter.

25. The wind industry has experienced five generations of technology in the United States. The fifth generation of wind turbines is commonly referred to as megawatt class turbines that start with ratings of 1 MW and above. These turbines started arriving in the U.S. in 1999-2000 (Bernay, Prefiled Testimony, Exhibit 38).

Megawatt class turbines in the range of 1 to 2 MW are not new or untested technology. For example, the GE 1.5-MW wind turbines (the size of turbine proposed for the 330-foot turbine scenario) are among the most widely sold wind turbines in the megawatt class. In mid-2002, GE announced that its 1,000th 1.5-MW wind turbine had been placed in operation. By 2004, the GE 1.5-MW machines were operating in Germany, Spain, the Netherlands, Ireland, Belgium, Japan, Sweden, and the U.S., with an installed capacity of 1,800 MW (Death-Valley.us Forums 2004). Three plus-MW wind turbines are a newer technology currently being developed in Europe. Vestas of Denmark released the prototype for its 3-MW V90 turbine in 2002. As of May 2003, there were "seven V90 prototypes in operation worldwide and serial production of the machine is expected in 2004" (Western Area Power Administration 2003).

Each turbine would be subject to a third-party certification, which provides assurances that the turbine is made according to specification, complies with codes and standards, and will operate safely and efficiently. Detailed measures, including project design features, proposed to reduce potential releases of hazardous materials to the environment during both project construction and operations are presented in Section 3.4.4 of the Draft EIS. More specific response procedures addressing what to do if there is an accidental release of hazardous materials will be detailed in the project's construction and operation spill prevention control plans. Information from these plans will not be developed until later in the EIS process, and will be part of the EFSEC SCA if the project is approved. These design features and construction and operating procedures would be effective at mitigating the potential (but unlikely) risk that an accidental release of hazardous materials could infiltrate and contaminate the local aquifer.

26. Thank you for your comment. The estimate of three to five days of icing per year at the project site is based on the fact that five years of meteorological data collected from the Ellensburg airport indicate that that location had an average of three days per year of freezing rain. Since the project site is between 500 and 1,000 feet higher in elevation than the Ellensburg airport, the analysis estimates that icing events (i.e., freezing rain) would be slightly more frequent at the project site than at the Ellensburg Airport. Therefore, the project's icing analysis does take into account the fact that the project area is higher in elevation than the airport, and the classification of the project area as having "moderate icing" risk is accurate.

Rime icing can be caused by fog if temperatures are below zero, but the phenomenon of rime icing would not "substantially raise the risk" of injury caused by ice throw. Section 3.4.2 of the Draft EIS accurately reports that data collected at other projects indicate that ice fragments were in the range of 0.2 to 2.2 pounds in mass. Furthermore, the "Morgan et al. 1998" study, undertaken as part of the Wind Energy in Cold Climates (WECO) project, was thoroughly reviewed and referenced in the Draft EIS. Morgan et al. 1998 is the source of the fact that ice fragments at operating wind farms have been thrown as far as 100 meters (328 feet).

27. WECO has developed analytical modeling techniques for determining the probable ice throw hazard in the vicinity of a turbine using variables for turbine tower and geometry, rotor speed, gravity, fragment dimensions, and aerodynamic lift and drag. Risk is expressed in terms of the number of expected strikes per square meter per year.

As discussed in Response 26 of this letter, based on weather records at the Ellensburg Airport and site-specific data, icing conditions at the project site that may present an ice throw hazard have been estimated to occur 3 to 5 days per year. This is characterized as light-to-moderate frequency by WECO. The WECO model predicts that there would be a risk of between approximately 0.01 and 0.001 strikes per square meter per year at a distance of 100 meters (328 feet) from each tower at the project site, assuming a 50-meter (165-foot) rotor diameter. At 300 meters (984 feet) under these same assumptions, the modeled risk goes down to between approximately 0.00001 and 0.000001 strikes per square meter per year (Morgan et al. 1998).

Another study on the risk of ice throw events presents an alternative method for calculating safety setbacks. Seifert et al. (2003) developed the following simplified empirical equation to calculate an ice throw "risk circle":

$d=(D + H)1.5$

d = maximum throwing distance in meters
D = rotor diameter in meters
H = hub height in meters

Applying this equation, the ice throw risk circle for the KVWPP would range from 669 to 837 feet, depending on the size of turbine chosen. However, the authors of this calculation stress that this simplified equation can only be a rough guess and a first step in planning the position of a wind turbine close to streets or other objects, which involves a certain risk.

There are a number of variables associated with ice throw risk assessment. WECO research efforts on this topic involve collecting experiential data from a large number of wind turbine operators around the world regarding the occurrence of icing, and details of ice throw events. No ice throw distances over 328 feet have been reported, and there have been no reported injuries resulting from ice thrown by wind turbines. This suggests that the risk of being struck by ice diminishes at distances greater than 328 feet from each tower.

There are currently no local or national regulatory standards for public safety risks relating to wind turbines in the U.S. guidance documents; however, standards have been developed for wind turbines in some European countries. For example, the WECO study described above states that a suitable risk level for ice throw may be 0.00001 strikes per million square meters per year; however, it concludes that the appropriateness of a risk level is subject to case-specific factors (Morgan et al. 1998). No uniform international regulatory standards for wind turbines currently exist. Third party certification programs

for wind turbines do incorporate safety features and performance in their review of turbines for certification (Kammen, Prefiled Testimony, Exhibit 39).

A risk analysis conducted for the KVWPP evaluated the potential public safety risks posed by the project—specifically, the risk of a turbine blade becoming detached, a turbine tower collapsing, and ice being thrown from turbine blades. The results of this risk assessment indicate that the probability of a wind turbine at the proposed project site killing or seriously injuring a member of the public as a result of blade throw, tower collapse, or ice throw is less than 1 in 1 billion. The resulting risk to human health is low and inconsequential compared to either other energy-generating technologies or many common activities such as riding a bike or driving a car (for more information on risks, please refer to Kammen, Prefiled Testimony, Exhibit 39).

The Applicant has proposed an ice throw safety setback from existing residences of at least 1,320 feet (for properties not participating in lease agreements with the Applicant); this distance falls within the acceptable risk circle calculation presented by Seifert et al. The Draft EIS recommends that icing sensors be placed on turbines located within 328 feet of public roads and private roads used by landowners to access their properties. This distance was used because literature on observed ice throw distances indicates that this is the maximum documented ice throw distance (Morgan et al. 1998).

A setback of between 1,500 to 2,000 feet is not consistent with the results of the hazards analysis and is not supported by valid, documented technical information relating to these types of hazards. Applying some safety factor greater than the proposed setback distances could be used to further reduce the safety risk from potential ice throw events. However, as noted in Local Agency Letter 2, Response 48, the Applicant's proposed turbine setback distance of 1,320 feet from non-participating residences and turbine tip height from public and private roadways is consistent with setback distances applied at other operating wind farms in the U.S.

28. No citations or Web site URLs are provided in this comment, and the EIS authors are unable to verify the statements presented and attributed to the "wind industry." While the EIS authors agree that the "reliable detection of ice is an indispensable requirement for the operation of wind turbines in cold climates," there is no documentation to support the claim that "de-icing and anti-icing systems have not proven reliable." The proposed project would be fitted with multiple wind vane sensors at a number of locations to ensure that there is a redundant system in place for ice detection (Jorgensen, Prefiled Testimony, Exhibit 37).

    The Applicant and the Draft EIS suggest reasonable measures to mitigate potential risks from ice throw. Also, please refer to Response 27 of this letter.

29. The Draft EIS is based on independent information of existing conditions and expected impacts and is consistent with the SEPA guidance that an EIS be prepared in a professional manner with appropriate interdisciplinary methodology (WAC 197-11-420).

It presents an independent and objective evaluation of the project and discloses a full range of potential impacts to the surrounding community.

The Garrett/Monaghan property was not identified as an affected receptor for shadow-flicker in the Draft EIS because there is no structure located on this property. The shadow-flicker model requires identification of specific receptor locations. The closest structure to the Garrett/Monaghan property east of the proposed turbine string J is the Schwab property adjacent and to the south. According to the revised shadow-flicker analysis (Table 3.4-2 in the Final EIS), the duration of shadow-flicker at the Schwab property is estimated to be 35:52 shadow hours per year. The highest modeled level of shadow-flicker per day at this receptor would be 42 minutes. Depending on the location of a future structure on the Garrett/Monaghan property, shadow-flicker effects would be anticipated to be similar in duration. No human or animal health impacts associated with shadow-flicker from wind turbines are documented (Nielsen, Prefiled Testimony, Exhibit 40).

The SEPA regulations do not require a comparative evaluation of the proposed project to other already-established, similar facilities to demonstrate differences in local land use patterns and ownership. Operating wind power facilities are located in a variety of locations and settings throughout the world, both in remote areas as well as in the presence of established residences.

30. The Draft EIS includes a recommended mitigation measure that requires the Applicant to conduct an acoustical analysis of the final turbine layout for all wind turbines prior to project construction. The analysis would be performed using noise level data for the final turbine type, size, and layout and would demonstrate compliance with the WAC 173-60. Also, please refer to Key Issue A in Section 2 of this volume regarding project definition and revisions to Section 3.12 (Noise) of the Final EIS.

31. Noise was an issue with some early wind turbine designs, but it has been largely eliminated as a problem through improved engineering and appropriate use of setbacks from nearby residences. According to a 2003 Scottish government survey of 1,810 individuals, 12% of people studied near wind farms had concerns about noise prior to their development, whereas only 1% thought wind turbines were noisy after installation (Public Attitudes to Windfarms: A Survey of Local Residents in Scotland 2003).

A paper (Wolsink and Sprengers 1993) investigating the noise problem in Denmark, the Netherlands, and Germany showed that the annoyance caused by wind turbine noise affects very few people, and the level of annoyance is often not related to the actual sound level of specific turbines. Instead, the annoyance is more likely related to other causes such as negative feeling toward the wind turbines. The Danish survey showed that those in favor of renewable energy sources and wind power in general are more positive about local turbines, and they find them less noisy and less intrusive to the landscape (Gipe 1995).

32. The suggestion to plant a 100-foot vegetative buffer to reduce noise level was found to be an unreasonable mitigation measure for the proposed project. The reason it is mentioned in the Draft EIS is to specifically address a recommended measure suggested during the EIS scoping process to reduce noise levels.

33. Whether a noise is objectionable depends on the type of noise and the circumstances and sensitivity of the person (or receptor) that hears it. Because of the wide variation in the levels of individual tolerance for noise, there is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction.

    WAC 173-60 establishes maximum permissible environmental noise levels that are applicable to Kittitas County and, therefore, also applicable to the project site. These maximum noise levels are objective thresholds against which all noise-generating activities are measured.

34. Many variables can affect the noise produced by a wind project and its effect on receptors. Wind directions, speeds, and turbulence levels are important variables. Site topography and vegetation affect turbulence and background noise levels. Intervening topography and atmospheric conditions (boundary layers, temperature gradients, or air absorption, etc.) affect propagation from source to receptor (NWCC no date). Therefore, the appropriate setback distance for noise depends on individual site circumstances and will vary from project to project.

    A setback distance of 1,000 feet from existing residences is commonly applied in the U.S. (please refer to Local Agency Letter 2, Response 48). In the case of the KVWPP the Applicant has offered a setback of 1,320 feet for existing non-participating residences. Table 3.12-5 of the Final EIS shows that predicted noise levels would not exceed the most restrictive nighttime noise limit of 50 dBA for any of the non-participating residences. Therefore, the 1,320-foot setback is appropriate for this particular site and additional setbacks are not warranted.

    The noise modeling undertaken for the proposed project does take into account the cumulative noise effect of multiple turbines.

35. Please refer to Key Issue B in Section 2 of this volume regarding property values.

36. Please refer to Individual Letter 10, Response 1 regarding financial compensation as mitigation for local property owners.

37. Thank you for your comment.

38. Thank you for your comment. Please refer to Individual Letter 3, Response 5 regarding the reliability of the Lincoln Township Wind Turbine Survey.

39. Please refer to Individual Letter 10, Response 1 regarding financial compensation as mitigation for local property owners.

40. The Draft EIS provides several examples where existing views from residential properties (e.g., Viewpoint 4) and from recreational properties (e.g., Viewpoints 7 and 11) are characterized as having moderately high to high visual quality. The photo-simulations presented in the Draft EIS are fair and accurate representations of future conditions.

41. The Draft EIS acknowledges that the state's designation of US 97 as a Scenic and Recreational Highway implicitly carries an additional level of care and scrutiny in the review of potential aesthetic impacts. Furthermore, the Draft EIS concludes that from certain viewpoints along US 97, the turbines would be visually dominant features that would result in moderately high to high visual impacts.

42. The Draft EIS acknowledges that there is little that can be done to mitigate the visual impact of a wind turbine. The visibility of the turbines would depend on several factors: their size, their distance to the viewer, and their degree of contrast with its surroundings. The landscape can be divided into distance zones that are related to the degree to which landscape details are detectable to the viewer. The U.S. Forest Service defines the background distance zone as the area 3 to 5 miles and further from the viewer in which little color or texture is apparent, colors blur into values of blue and gray, and individual visual impacts become least apparent (U.S. Forest Service 1973). At distances greater than 15 miles, objects the size of the proposed turbines would barely be discernible, if at all.

43. As stated in Section 3.9.1 of the Draft EIS, the principal types of viewers in the KVWPP area are resident viewers, roadway viewers (driveway and passengers), and recreating viewers. Because Cricklewood Lane and Elk Springs Road are not heavily traveled roadways and the experience of motorists in terms of visual exposure is transitory in nature, the visual sensitivity for motorists is considered low. Furthermore, drivers have a narrow cone of vision and single point of concentration (i.e., the roadway ahead) that limit visual exposure. However, visual sensitivity for residents residing in the immediate project area is considered high because there are no constraints on vision and the permanent nature of viewing conditions.

44. The Draft EIS acknowledges that there is little that can be done to mitigate the visual impact of a wind turbine. Furthermore, it concludes that for some viewers, the presence of the wind turbines represents a significant unavoidable adverse impact because it would greatly alter the appearance of the rural landscape over a large area of the Kittitas Valley. The Draft EIS fully acknowledges the potential extent and magnitude of the project's visual effects.

45. A conservation easement is an instrument to preserve or protect some valuable natural quality on a given piece of land. In this case, undeveloped land in the most critical foreground views of the turbines could remain in its current state until after turbine decommissioning. The "order and purity" maintained refers to avoiding the creation of a cluttered disarray of widely differing elements. However, this recommended mitigation measure has been removed from the Final EIS because there is no practical means to

gauge its potential effectiveness and there may not be sufficient evidence that the Applicant would be able to acquire enough easements to appreciably mitigate the most affected views.

46. All of the visual impact analysis methods currently used by government agencies in the U.S. consider the number and sensitivity of viewers when determining aesthetic impacts. The methods follow the assumption that if more people see something unsightly, it's more of an impact than if only a relative few people see it.

    Please refer to Individual Letter 10, Response 1 regarding financial compensation as mitigation for local property owners.

47. Please refer to Response 29 of this letter regarding the adequacy of the Draft EIS. Many published reports that reflect the downside of wind farms in the U.S. and abroad, such as the Lincoln Township Wind Turbine Survey in Wisconsin, are either not written for a regulatory agency audience or are not peer-reviewed. Therefore, the adequacy of these studies' conclusions is questionable and they have not been relied upon in the Draft EIS.

48. Your opposition to the project is noted.

Responses to Comments in Individual Letter 16 from Ed Garrett

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. This comment requests that a press release be added to your testimony that describes a lawsuit filed against a wind energy producer for the illegal, ongoing killing of tens of thousands of protected birds at the Altamont Pass Wind Resource Area. Please refer to Organization Letter 8, Response 2 regarding project comparisons to the Altamont Pass Wind Resource Area.

Responses to Comments in Individual Letter 17 from Emilia Burdyshaw

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Please refer to Individual Letter 11, Response 2 regarding project setbacks from future development on nonparticipating properties.

2. Please refer to Individual Letter 11, Response 2 regarding project setbacks from future development on nonparticipating properties.

3. Two very large parcels in the project area have been purchased by developers and subdivided for homes since the announcement was made about the KVWPP. Section 3.6.1 of the Final EIS has been revised to acknowledge that planned residential subdivisions are present in the project area.

4. Please refer to Individual Letter 11, Response 2 regarding project setbacks from future development on nonparticipating properties. Please refer to Individual Letter 15, Response 27 regarding the adequacy of proposed setbacks to minimize safety risks associated with ice throw. Please refer to Local Agency Letter 2, Responses 48 and 49 regarding the adequacy of proposed setbacks to minimize safety risks associated with tower collapse and blade throw, respectively. Please refer to Local Agency Letter 2, Response 54 regarding setbacks for shadow-flicker effects. Please refer to Individual Letter 15, Response 34 regarding the adequacy of setbacks for noise impacts.

5. Please refer to Individual Letter 15, Response 27 regarding safety setbacks for ice throw.

6. While a large earthquake could affect wind power operations, KVWPP facilities would be designed to at least the minimum current engineering standards applicable. Please refer to Individual Letter 15, Response 23 regarding the effect of strong winds on the turbine towers.

   Please refer to Local Agency Letter 2, Responses 48 and 49 regarding the adequacy of proposed setbacks to minimize safety risks associated with tower collapse and blade throw, respectively. The only properties where the turbines would be located less than tip height distance away would be those properties whose owners have signed agreements with the Applicant. These property owners have agreed to a zero setback from property lines because it allows the most efficient and lowest impact of wind turbines on the landowners' property.

   As stated in Section 2.2.2 of the Draft EIS, minor adjustments would be made to the proposed project layout, such as moving the tower foundations when the final turbine model is selected to ensure that safety setbacks proposed by the Applicant are maintained. Therefore, the proposed tip height setback would be maintained between the turbines and adjacent properties that do not have signed agreements with the Applicant.

7. The Applicant performed revised shadow-flicker models based on the most conservative 410-foot turbine height, with a maximum of 65-turbines. Table 3.4.2 in the Final EIS has been revised to present the updated modeling results.

   Shadow-flicker modeling was conducted only for existing residences. Neighboring properties close to the turbines that do not currently support habitable structures could also be affected by proposed wind power operations. Hypothetical residences on vacant lots were not modeled because the model requires identification of specific receptor locations. The output will vary depending on where the receptor is located relative to the turbine locations. The results of the modeling for existing residences, however, can be used as approximations of the duration of shadow-flicker that might be experienced at neighboring properties.

   Sections 3.4.2 and 3.14.8 of the Final EIS have been revised to acknowledge that both existing residences and neighboring properties would be affected by shadow-flicker from proposed wind power operations.

   Please refer to Individual Letter 11, Response 2 regarding project setbacks from future development on nonparticipating properties. Please refer to Local Agency Letter 2, Response 54 regarding setbacks for shadow-flicker effects.

8. Many variables can affect the noise produced by a wind project and its effect on receptors. For example, wind directions, speeds, and turbulence levels are important variables. Site topography and vegetation affect turbulence and background noise levels. Intervening topography and atmospheric conditions (such as boundary layers, temperature gradients, or air absorption) affect propagation from source to receptor (NWCC no date).

   The referenced Draft EIS text is from a discussion about predicted noise increases in relation to a site-specific set of measured ambient background noise levels. The perceived effect of noise levels in the 50 to 55 dBA range would depend on ambient background noise levels in the area of the receptor. Mitigation measures are recommended to ensure that project operations would comply with applicable regulatory thresholds to protect nearby receptors from adverse noise effects.

9. Regardless of existing land uses, planting dense vegetation at a depth and height sufficient to block the line of sight between the receptor and the wind turbine is not considered a reasonable mitigation measure. Wind energy facilities need to be located in areas that have the necessary climatic and topographical features conducive to producing wind of sufficient speed and consistency. Wind is affected by the friction or drag of the surface the wind is crossing. Bare earth or ocean offers the least friction, while large stands of trees can decrease wind speeds and add to turbulence. For these reasons, turbines are generally located away from forested areas and areas of dense vegetation (Renewable Energy Systems Ltd. no date).

10. A geotechnical study of the site at nine locations determined that there do not appear to be any unstable slopes that would give way and cause a landslide during blasting activities. Prior to construction, a more detailed geotechnical investigation, including soil strengths, consistency, in-place densities, etc., would be conducted at each turbine location to ensure that foundation designs are adequate and that blasting activities would not cause landslides.

11. Please refer to Key Issue B in Section 2 of this volume regarding property values.

12. Please refer to Individual Letter 15, Response 45 regarding the recommended mitigation measure for conservation easements.

Responses to Comments in Individual Letter 18 from H.S. "Sandy" and Maren Sandall

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Figure 3.6-1 in the Final EIS has been updated to be consistent with the data (e.g., number of structures) presented on the Appendix D noise map, Exhibit 21-2 (sheet 3 of 5) of the Draft EIS.

2. The attached markup of Section 35 indicates there are cabin structures on properties owned by the following individuals: Paul Abson, Len Scheele, Wayne Neilson, S. Plut, John Phillips, and J. Duncan. This new information was reviewed for potential discrepancies with the number and location of existing residences analyzed in the Draft EIS. The results of this review are summarized below.

   - According to Kittitas County property tax records, there are no buildings or structures on the Paul Abson, Len Scheele, or Wayne Neilson properties.
   - According to Kittitas County property tax records, there are two cabins on the S. Plut property and one small cabin on the John Phillips property.
   - According to Kittitas County property tax records, J. Duncan's property is divided into three separate parcels. Parcel Numbers 20-17-35000-0036 and 20-17-35000-0037 do not have buildings or structures. Parcel Number 17-35000-0033 has a residential structure, but the exact location of the structure is unknown.

   Section 35 is heavily forested and access to the properties is limited; therefore, it was not possible to identify every structure on the properties from a helicopter. The properties with the potential to be affected by the project (from noise, visual effects, shadow-flicker, etc.) are those in the southernmost portion of Section 35, but any structures on those properties are clearly identified. Precise, current global positioning system (GPS) locations for every structure within 2 miles is very challenging to produce in this area. Some structures on these properties possibly were not mapped because they either did not exist at the time of mapping or they did not appear to be habitable (e.g., the structure was a shed or outhouse).

   Any work or activity along turbine string H would not adversely affect the ability of residents living in the northern portion of Section 35 to access their properties because a separate new private road would access these turbines.

3. Access to the KVWPP area would be limited through site security measures (see Section 2.2.5 of the Draft EIS). For example, lockable gates would restrict access to the main operations and maintenance (O&M) facility area, site trailers, and wind turbine string roads. The gates on wind turbine access roads would be open during working hours only while O&M staff are present on a particular access road and would be secured by project O&M personnel after working hours. These restrictions would not affect private landowner access to their property in the surrounding area nor would it require restrictions on commercial deliveries.

4. Elk Springs Road is just east of the Pautzke Bait/Benson north-south property line and travels through the west portion of the Genson property. In a telephone communication on June 9, 2004, with the Applicant, Mike Genson stated that Elk Springs Road is approximately 50 feet from the Pautzke Bait property line. Figure 2-1 of the Final EIS has been corrected.

5. Please refer to Individual Letter 15, Response 45 regarding the recommended mitigation measure for conservation easements and Response 2 of this letter regarding updated information on property owners in and around Section 35. Please refer to Individual Letter 11, Response 2 regarding project setbacks from future development on nonparticipating properties.

6. Please refer to Organization Letter 3, Response 9 regarding the need for recommended cell phone mitigation and Local Agency Letter 2, Response 19 regarding the need for recommended radio interference mitigation.

   Consistent with other sections of the document, the referenced text in Section 3.13 of the Final EIS has been revised to make clear the source of proposed additional mitigation measures. Please refer to Local Agency Letter 2, Response 57 regarding the ability of EFSEC to enforce SEPA mitigation measures.

7. Please refer to Organization Letter 8, Response 2 regarding project comparisons to the Altamont Pass Wind Resource Area.

8. Please refer to Key Issue B in Section 2 of this volume regarding property values. Please refer to Individual Letter 3, Response 5 regarding the reliability of the Lincoln Township Wind Turbine Survey. Please refer to Individual Letter 10, Response 1 regarding financial compensation as mitigation for local property owners.

9. Please refer to Individual Letter 15, Response 27 regarding setbacks for potential ice throw and to Local Agency Letter 2, Response 49 regarding setbacks for potential blade throw.

10. Thank you for your comment. Please refer to Individual Letter 15, Response 4 regarding viability of the project site for wind power.

Responses to Comments in Individual Letter 19 from Maren Sandall

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Section 3.1.1 of the Draft EIS acknowledges that the rare type of agate known as Ellensburg Blue is found in Kittitas County, northeast to northwest of Ellensburg, and it is possible that this resource could be located on public lands where project facilities are proposed. However, the majority of the project is located exclusively either on private land or on DNR land not accessible to the public; therefore, the project would not affect the availability or accessibility of these agates. Furthermore, there are other areas within Kittitas County where Ellensburg Blue could potentially be found; therefore, it is not considered a unique feature specific to the project site.

Responses to Comments in Individual Letter 20 from Earle Price

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment. Every attempt has been made to present information in a concise and readable manner that the reader can understand.

2. An analysis of cumulative impacts is required under SEPA (WAC 197-11-060(4) (e). Cumulative effects are those that result from the incremental impacts of an action when added to other past, present, and reasonably foreseeable future actions. The intent of cumulative impact analyses is not to average the effects of the three projects but to assess the additive effects of the three projects combined and as a whole. For example, the total combined permanent cumulative loss of vegetation from the three projects would be approximately 350 acres. Please refer to revisions to Section 3.14 of the Final EIS for updated information on the Desert Claim and Wild Horse wind power projects.

   Each of the wind power projects currently under evaluation in Kittitas County is required under SEPA to undergo a thorough and comprehensive environmental review. The site-specific evaluation of the KVWPP is the subject of this Final EIS (see Volume 1). The Desert Claim Wind Power Project is evaluated in a separate EIS issued by Kittitas County; the Desert Claim Final EIS was published in August 2004 (Kittitas County 2004). The Draft EIS for the Wild Horse project was issued in August 2004 (EFSEC 2004a), and the Final EIS was issued in May 2005 (EFSEC 2005a).

3. No citations or Web site URLs are provided in this comment or its attachments, and the EIS authors are unable to verify the new ice throw information attributed to a "German spreadsheet." Please refer to Individual Letter 15, Response 27 regarding appropriate setback distances for ice throw.

Responses to Comments in Individual Letter 21 from Anonymous

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment. Your support for the project is noted.

Responses to Comments in Individual Letter 22 from Michael K. Genson

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment.

2. Thank you for the information presented in your comment.

3. Thank you for the information presented in your comment.

4. Thank you for your comment.

Responses to Comments in Individual Letter 23 from Michael H. and Elizabeth F. Robertson

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Please refer to Key Issue A in Section 2 of this volume regarding project definition.

2. Your comment is noted. Every attempt has been made to present information in an accurate and complete manner that the reader can understand. Please to Key Issue A in Section 2 of this volume regarding project definition.

3. The two proposed action scenarios represent the range in the physical characteristics of different project components that are proposed within the same maximum project footprint at the same proposed location. Revised Code of Washington (RCW) 80.50.020(4), Washington Administrative Code (WAC) 463-42-125, and the SEPA regulations (Chapter 197-11 WAC) do not include requirements that an impact analysis be performed for each individual component or part of an energy facility.

   Please refer to Key Issue A in Section 2 of this volume regarding project definition for more information. The combined or cumulative effects of multiple wind generation facilities in Kittitas Valley and County are described in Section 3.14 of the Draft EIS.

4. Please refer to State Agency Letter 3, Response 4 regarding demonstrated need for the proposed project. Please refer to Individual Letter 15, Response 4 regarding the net capacity and viability of the proposed project.

5. The total acreage under option for the project is approximately 6,000 acres (whole parcels), although only approximately 5,000 acres lie within the current project area boundary (please note that project area acreage in the Final EIS has been corrected from 7,000 to 6,000 acres). This correction does not change the boundaries of the project area. Only approximately 108 acres (or 1.5% to 1.8% of the total area) would be permanently developed with wind power facilities. The remainder of the project area would remain preserved as open space and rangeland, thus protecting this area from further development such as rural residential subdivisions.

   Please refer to Organization Letter 4, Response 9 regarding the need for conventional energy sources to balance wind power deliveries.

6. Voluntary green power programs in Washington currently have low participation rates. Customers are participating in the green power programs offered by 16 of Washington's electric utilities (as directed under RCW 19.29A) at an average rate of 0.55% throughout the state or approximately one-half of 1%. It is helpful to consider the current statewide participation rates of green power programs in the context of long-term penetration. In particular, it often takes a long time for markets to develop. For example, when long distance telephone service was deregulated, AT&T did not lose half of its market share in

just a few years; it happened gradually at a pace of a few percentage points each year over 15 years. Similarly, recycling reached 25% market penetration over an extended period of time (Bolinger et al. 2001).

Please refer to Individual Letter 1, Response 9 regarding the predicted supply and price of electricity available to local consumers and to State Agency Letter 3, Response 4 regarding the need for the proposed project.

The SEPA rules (WAC 197-11-448) do not require agencies to address concerns such as tax treatment of the wind energy industry in an EIS. The statute and rules envision general economic considerations as factors decision-makers would evaluate apart from the environmental impacts addressed in an EIS.

7. The referenced text in Section 1.4.4 of the Draft EIS has been deleted. Section 2.7.1 of the Draft EIS (renumbered Section 2.6.2 in the Final EIS) indicates that ready access to sufficient available capacity on an existing electric transmission system is one of the site-specific criteria needed to determine the suitability of a site for wind facilities. This section explains why proximity to available transmission capacity is a necessary condition for a commercially viable wind energy facility. Alternative sites that do not satisfy this condition would not be "reasonable alternatives" under the SEPA rules. The SEPA rules provide that reasonable alternatives are those that could feasibly attain or approximate a proposal's objectives but at a lower environmental cost or decreased level of environmental degradation.

   Project profitability is inherently linked to project feasibility. Proximity to adequate transmission facilities is an appropriate criterion by which to evaluate potential wind power development sites because it affects a proponent's ability to feasibly attain or approximate their objective to construct and operate a viable wind facility.

8. Section 1.9 of the Draft EIS presents a brief summary of potential cumulative impacts that are fully articulated in Section 3.14. Section 3.14.6 of the Draft EIS acknowledges that construction of the three proposed wind power projects in Kittitas County would increase the potential for the spread of weeds into previously undisturbed areas. The presence of weeds makes the recolonization of disturbed areas with native vegetation difficult. The Applicants for the KVWPP, Wild Horse, and Desert Claim projects have recommended several measures to control the introduction and spread of noxious weeds in their respective project areas, both during and after construction. These measures include cleaning construction vehicles prior to bringing them into the project area from outside areas and quickly revegetating habitats that are temporarily disturbed during construction with native species (see revisions to Section 3.2.4 of the Final EIS). Cumulative impacts are not anticipated, and no further mitigation is warranted.

9. Please refer to Tribal Letter 1, Response 4 regarding the adequacy of the baseline wildlife study and to State Agency Letter 3, Response 14 regarding the adequacy of bat studies.

As discussed in Section 3.14.6 of the Draft EIS, cumulative impacts of the three proposed projects in Kittitas County on avian species, bats, and other wildlife species (KVWPP, Desert Claim, and Wild Horse) were addressed. The report entitled *Cumulative Impacts Analysis for Avian and Other Wildlife Resources from Proposed Wind Projects in Kittitas County, Washington* (WEST, Inc. 2003) is also presented in Appendix A of the Draft EIS.

10. As shown on Figure 3.2-5 of the Draft EIS, and based on the Washington Department of Fish and Wildlife Priority Habitat and Species database, the KVWPP area is located more than 3 miles southeast of elk calving areas. The Desert Claim project area is not located in an elk calving area, and the northern boundary of the Wild Horse site is approximately 0.5 mile from the Colockum elk calving area. Based on the distances of elk calving areas from the three proposed wind power projects in Kittitas County, no cumulative impacts to elk calving areas are anticipated. Section 3.14 of the Final EIS has been revised to clarify this information.

11. Please refer to Organization Letter 6, Response 1 regarding the effects of Washington State Initiative I-747 on property tax revenue. Please refer to Individual Letter 1, Response 9 regarding the predicted supply and price of electricity available to local consumers.

12. Because of topographic conditions, there are no areas along the portion of US 97 that bisects the KVWPP area where the KVWPP would be seen in the immediate foreground and the Desert Claim project would be seen in the middle ground or background. To motorists traveling northbound along US 97 south of Smithson Road, the two projects would not cumulatively contribute to visual degradation within the cone of vision of the driver because they are more than 1 mile apart. The proximity of these two projects, however, would contribute to the overall impression that wind turbines are plentiful in Kittitas Valley.

    Blade glint, the regular reflection of sun off rotating turbine blades, could be a potential distraction to drivers if major roads are aligned with a view toward turbines. Blade glint depends on the orientation of the nacelle, angle of the blade, the angle of the sun, and the reflectiveness of the surface of the blades. Matte surface finishes can be specified to minimize effects (Energy Efficiency and Conservation Authority 2004).

    An Internet review of wind turbine literature suggests that wind turbines do not create highway safety hazards. For example, evidence from existing wind farms in Britain indicates that turbines do not distract drivers unduly (Renewable Energy Systems 2004). Drivers must and generally do adjust to all types of distractions and external events, such as sun glare and other traffic. Furthermore, the KVWPP turbines would be setback from public and private roads at a distance equivalent to turbine tip height (from 330 to 410 feet). Therefore, temporary, fleeting potential exposure to shadow-flicker would not constitute a high accident risk.

The Draft EIS acknowledged that nighttime lighting of the proposed wind power projects is likely to have an adverse cumulative effect on views from residential properties near the Kittitas Valley and Desert Claim project areas, including along US 97, a state-designated Scenic and Recreational Highway. However, as explained in section 3.9.3 of the Final EIS, recent changes to Federal Aviation Administration requirements have reduced the number of turbines that have to be lit at night.

13. The project will comply with all noise standards as set forth in the Washington Administrative Code. Please refer to Individual Letter 13, Response 6 regarding low-frequency noise.

14. Please refer to Local Agency Letter 2, Responses 48 and 49 regarding safety setbacks for tower collapse and blade throw, respectively. Please refer to Individual Letter 15, Response 27 regarding safety setbacks for ice throw. Please refer to State Agency Letter 3, Response 18 regarding setbacks from ridge lines to prevent raptor collisions. Please refer to Local Agency Letter 2, Response 54 regarding setbacks for shadow-flicker effects. Please refer to Individual Letter 15, Response 34 regarding the adequacy of setbacks for noise impacts.

15. Please refer to Local Agency Letter 2, Response 10 regarding additional analysis of offsite alternatives.

16. Thank you for your comment. Please refer to Response 7 of this letter.

17. Please refer to Local Agency Letter 2, Response 10 regarding additional analysis of offsite alternatives. The Springwood Ranch site is included in the updated offsite alternatives analysis.

18. The KVWPP Draft Supplemental EIS (EFSEC 2004a) presents an updated evaluation of the Manastash Ridge site. The revised evaluation concludes that while there are two existing electrical transmission lines located approximately 3 miles from the site, the entire site is zoned Commercial Forest and is therefore not suitable for operation of a wind farm. Also, see revisions to Section 2.6 of the Final EIS.

19. Impacts to groundwater or water supply wells are not anticipated from project-related activities because the depth of the groundwater relative to the ground surface.

20. Please refer to Tribal Letter 1, Response 4 regarding the adequacy of the baseline wildlife study.

21. Please refer to State Agency Letter 3, Response 18 regarding local raptor hunting behavior and the need for setbacks from ridgelines.

    The recommendations by Western EcoSystems Technology, Inc. (WEST, Inc.) for turbine placement are based on site-specific information collected at each project site. For example, turbines at the Foote Creek Rim Wind Project in Wyoming were moved back

away from the ridgelines because baseline data detected a pattern of raptor use along the edge of the rim (Johnson et al. 2000a). However, the topographic and meteorological conditions and avian use patterns at the Foote Creek Rim and Desert Claim projects are different than those at the KVWPP site; therefore, the recommendation for setbacks from ridgelines would not be merited.

22. The method used in the baseline study to survey for nesting raptors does not allow detection of all nesting raptors, such as cavity dwellers. The methods chosen for the raptor nest survey were based on comment and approval from the Washington Department of Fish and Wildlife (WDFW) and U. S. Fish and Wildlife Service (USFWS), other studies of wind plants and wind resource areas throughout the Pacific Northwest, and accepted methods for monitoring nesting raptors over large areas (Erickson, Prefiled Testimony, Exhibit 29; Erickson, Prefiled Testimony, Exhibit 29R; WDFW 2004). While this method does not provide an estimate of cavity or ground nesting raptors in an area, it does provide a relative density of nesting raptors that can be used to compare with other sites studied. It also provides an objective impact assessment as well as identification of sensitive resource locations that should be avoided by the development. The study was not designed to monitor population trends or inventory all species within the area; it was designed to provide relative estimates of avian resources that could be used in the impact assessment.

    Please refer to Tribal Letter 1, Response 4 regarding the adequacy of the baseline wildlife study.

23. Please refer to Organization Letter 8, Responses 11 and 19 regarding nighttime wildlife surveys and use of radar, respectively, and State Agency Letter 3, Response 14 regarding adequacy of avian and bat surveys.

    Post-construction fatality monitoring studies of wind plants in the U.S. have shown that owl species do not appear to be at great risk of collision with wind turbines (Johnson et al. 2000a; Young et al. 2003b; Erickson et al. 2000; Erickson et al. 2003; WEST, Inc. and NWC 2004; Kerns and Kerlinger 2004). Based on the comments from WDFW and USFWS regarding the baseline studies, it was decided that nocturnal owl surveys were not part of the overall scope or protocol for the avian baseline studies (Erickson, Prefiled Testimony, Exhibit 29; Erickson, Prefiled Testimony, Exhibit 29R; Clausing, Prefiled Testimony, Exhibit 71R). The identification of owl nests was included in the raptor nest surveys that were performed as part of the baseline studies.

24. Please refer to Tribal Letter 1, Response 4 regarding the adequacy of the baseline wildlife study.

25. During the development of the study protocol, it was determined that direct observation of raptors in the area was a better predictor of use than indirect measures such as habitat or prey availability. Therefore, avian surveys were conducted to look for raptors using the study area, instead of conducting rodent surveys to try and predict raptor use (Erickson, Prefiled Testimony, Exhibit 29R).

26. Two winter seasons of surveys were conducted to document the level of wintering bald eagle use within the project site and within adjacent, more preferred habitats, such as the Yakima River corridor (Erickson, Prefiled Testimony, Exhibit 29).

27. As discussed in Section 3.2.2 of the Draft EIS, avian mortality estimates were based on a variety of studies performed at other wind power facilities (cited in the EIS).

28. As noted in the April 26, 2004, letter from the Director of the USFWS to the Regional Directors (Regions 1-7), the Interim Guidelines to Avoid and Minimize Wildlife Impacts from Wind Turbines, dated July 10, 2003, are voluntary, interim guidelines that are preliminary in nature. The USFWS has already acknowledged that they intend to revise these guidelines in the next 18 months to address a number of issues that have been raised regarding the specific content of the guidelines. As the Director's letter also notes, these national guidelines are, by necessity, very general in nature and not intended to be rigidly applied to all sites in all regions, but rather to provide field staff of the USFWS with guidance in developing comments on proposed projects.

    The preconstruction studies for this project were conducted prior to the issuance of these guidelines. No national guidelines were in place at the time. The WDFW developed state wind power siting guidelines, specifically crafted for the Central and Eastern Washington regions. The WDFW has stated in writing that the project complies with these guidelines.

29. Please refer to Individual Letter 15, Response 25 regarding the history and reliability of megawatt class turbines proposed for the KVWPP.

    Please refer to Local Agency Letter 2, Responses 48 and 49 regarding safety factors for determining appropriate setbacks from wind turbines.

30. Rotor blade tip throws are addressed in Section 3.4.2 of the Draft EIS under the subhead entitled Blade Throw. Blade throw is defined as "…blade fragments thrown from a rotating machine." There are selected reports in literature and popular media of instances of turbine blade fragments being thrown considerable distances. However, articles on such events have not included citations for authoritative source documents substantiating the reports, so these incidents cannot be verified.

31. Fires are extremely rare on modern turbines. Modern turbines are equipped with fire safeguards including multiple temperature sensors mounted on parts of the turbine machinery prone to higher temperatures. If the control system detects temperatures outside acceptable limits, it will trigger the automatic shutdown of the turbine and send an alarm to the central computer system, which in turn will alert on-call service technicians of the fault location, fault code, and turbine locations. For more information on the risk of a wind turbine catching fire, please refer to Jorgensen, Prefiled Testimony, Exhibit 37.

Please refer to Individual Letter 11, Response 10 regarding the Applicant's commitment to mitigate for fire risks at the project site.

32. Thank you for your comment. As stated in Section 2.2.2 of the Draft EIS, minor adjustments would be made to the proposed project layout such as moving the tower foundations when the final turbine model is selected to ensure that safety setbacks proposed by the Applicant are maintained. Therefore, if the Applicant is authorized to construct the project using 3-MW turbines (with an approximately 410-foot tip height), then the final turbine site plan would be verified in the field to ensure that proposed turbines are located no closer than tip height to residential access roads.

33. The actual potential maximum distance of a thrown blade would be some distance less than the classic maximum trajectory case. The classic maximum trajectory case tends to overestimate the distance traveled because aerodynamic drag is completely ignored. Furthermore, the blade center of gravity is estimated as if the blade were of uniform thickness, whereas in reality, the blade center of gravity is closer to the hub. Because of this center of gravity, the initial kinetic energy of the blade is lower than estimated and the thrown distance would be less (Kittitas County 2004). Please refer to Local Agency Letter 2, Response 49 for a discussion of documented blade throw distances and proposed setbacks.

34. Please refer to Individual Letter 15, Response 27 regarding ice throw impacts.

    As stated in Section 3.4.2 of the Draft EIS, the estimate of 3 to 5 days per year of icing is an average based on several years of meteorological data available and collected from the Ellensburg Airport. The number of days with icing will fluctuate greatly from year to year, and an estimate of average icing conditions cannot be developed based on one year's record (Nierenberg, pers. comm., 2004).

35. Please refer to Response 12 of this letter.

36. Thank you for your comment. Please refer to Local Agency Letter 2, Response 54 regarding setbacks for shadow-flicker. The Draft EIS recommends mitigation measures to reduce the effects of shadow-flicker on existing residences.

    Please refer to Individual Letter 11, Response 2 regarding project setbacks from future development on nonparticipating properties.

37. There are no documented human or animal health impacts associated with shadow-flicker from wind turbines (Nielsen, Prefiled Testimony, Exhibit 40). Livestock and animals can continue to move and graze directly beneath operating wind turbines with no adverse effect. According to the Applicant, "cattle, sheep, and other domestic animals such as horses routinely graze underneath operating wind turbines at projects across the United States [note: such as at the Stateline Wind Farm in Washington] and around the world" (Sagebrush Power Partners LLC 2003a).

38. As described in Section 3.2.2 of the Draft EIS, there is a lack of knowledge regarding the potential impacts of wind energy development on big game such as mule deer and elk. Recent photographic evidence shows elk herds migrating near the Blue Canyon Wind Farm in Oklahoma (see attached photograph at the end of these responses). It would be difficult, if not impossible, to isolate the effect of shadow-flicker on these species apart from the effect of human-related disturbance caused by regular maintenance activities. If shadow-flicker were to cause disturbance, these species may avoid the project site during certain times of day or during certain periods of the year. See also the response to State Agency Letter 23, Comment 26.

39. Rodent populations are highly dynamic and cyclical. As shown in Table 3.2-11 of the Final EIS, projected annual mortality rates for raptors is expected to be 2 to 3 individuals. The relatively low level of projected raptor mortality from the project would not be measurable in the overall raptor population in the area and would not have a measurable effect on highly dynamic rodent populations. There is no evidence that raptor mortality associated with the proposed project would result in a corresponding increase in rodent populations to create more widespread exposure to humans of the hantavirus.

40. Please refer to Individual Letter 11, Response 10. Initial emergency response would be by project personnel trained to respond to the various anticipated emergencies such as fire. Initial emergency response would also include contact with applicable fire district(s) that would be under contract for emergency response.

41. Please refer to Response 30 of this letter regarding blade tip throw and to Local Agency Letter 2, Response 49 regarding setbacks for blade throw.

42. Please refer to Response 36 of this letter.

43. Thank you for your comment. Please refer to Key Issue B in Section 2 of this volume regarding property rights.

44. Please refer to Individual Letter 1, Response 9 regarding the predicted supply and price of electricity available to local consumers. Please refer to Individual Letter 15, Response 4 regarding the net capacity and viability of the proposed project.

45. Additional digital images were taken from a location on your property and have been included as new Viewpoint 12 in Section 3.9 of the Final EIS. Project impacts from this new viewpoint have been evaluated for both proposed action scenarios. See Figure 3.9-14.

    Please refer to Key Issue B in Section 2 of this volume regarding property values.

46. The Draft EIS acknowledges that the presence of the wind turbines would represent a significant unavoidable adverse impact because they would greatly alter the appearance of the rural landscape over a large area of the Kittitas Valley.

47. The Draft EIS acknowledges that under some lighting conditions, the turbines could have a greater contrast with their backdrop, thereby increasing their visual impact. Simulating rotor movement and blinking lights would involve animation, which cannot be depicted in a printed document.

    The 410-foot turbine scenario is represented from Viewpoint 1 in Figure 3.9-1 of the Final EIS. The 410-foot turbine scenario is represented from two additional viewpoints in the Final EIS: Viewpoint 3 (US 97 at northern end of Bettas Road, Figure 3.9-5) and new Viewpoint 12 (Robertson property, Figure 3.9-14).

48. Thank you for your comment.

49. Section 3.9.4 of the Draft EIS states that the visual impacts of another facility are not predictable and would range from incompatible to acceptable depending on the type and location of the facility.

50. The Applicant proposes mitigation to address issues related to the effects of oversize and overweight vehicles traveling on county roads, including Bettas Road. Mitigation measures for construction traffic control proposed by the Applicant include the requirement that oversize or overweight vehicles comply with applicable state and county requirements, as permitted by the Washington State Department of Transportation and Kittitas County. In addition, the Applicant would consult with the Kittitas County Department of Public Works to determine the specific requirements for any required improvement and restoration to county roads used by the project. The Applicant would comply with any mitigation requirements imposed by the County for impacts to local roads, and it is expected that implementing these requirements would satisfactorily mitigate for these potential impacts.

51. The Draft EIS acknowledges the possibility that changes in background noise levels could be perceived as adverse depending on the magnitude of that change and the nature of the receptor. Like virtually every other type of rotating machinery, wind turbines do make some noise.

    The regulatory noise limits applied to a wind power project do not mean that the turbines would necessarily be inaudible to all of its neighbors, at all times, under all conditions. The limits would, however, protect the amenity of neighbors and ensure that the development could reasonably be expected not to disturb them. If limits were to be applied with inaudibility as an objective, it would be very difficult to build an economically viable wind power project (or indeed many other types of development) anywhere. This is because it would be difficult to find locations that combined the required resource, electrical infrastructure at a viable distance for connection, and no nearby neighbors.

The perception of a noise is also often influenced by the listener's attitude toward the noise source. One person may find a particular noise inconsequential, while another may find the same sound aggravating. A hearer who for some reason has a negative attitude toward a noise source is much more likely to view the noise itself negatively, however low its level.

Please refer to Key Issue B in Section 2 of this volume regarding property values.

52. Please refer to Individual Letter 13, Response 6 of this letter for a discussion of low frequency noise.

"Thumping" is more characteristically associated as a form of impulsive noise, described by short acoustic impulses or thumping sounds that vary in amplitude with time. It is caused by the interaction of wind turbine blades with disturbed airflow around the tower of a downwind machine. As described in Individual Letter 13, Response 6, the proposed KVWPP wind turbines would be an upwind design; therefore, impulsive thumping noise effects are not anticipated (Renewable Energy Research Laboratory Center for Energy Efficiency and Renewable Energy and Department of Mechanical and Industrial Engineering University of Massachusetts at Amherst 2002).

53. Initiative 747 limits the growth rate of locally collected property tax to 1% per year. Please refer to Organization Letter 6, Response 1 and revisions to Section 3.7.2 of the Final EIS for clarification of projected project tax revenues.

The Applicant has committed to pay the cost for necessary public services staffing and/or equipment serving the project. This mitigation would apply to both provision of adequate law enforcement and fire protection and maintenance of county roads (see Organization Letter 5, Comment 10). The project would not affect public services or utilities infrastructure.

54. Please refer to Response 53 of this letter.

55. Please refer to Response 53 of this letter. In addition, the turbines could be temporarily stopped to ensure zero air turbulence to facilitate use of Department of Natural Resources aerial fire-fighting techniques. Aerial fire fighting with helicopters would be somewhat affected by the presence of the towers. The existence of such hazards would need to be accounted for in planning and executing fire-fighting operations, similar to the hazards presented by the existing transmission lines in the project area.

56. Please refer to State Agency Letter 3, Response 4.

57. Thank you for your comment. Please refer to Response 58 through 77 of this letter.

58. Please refer to Local Agency Letter 2, Response 10 regarding the offsite alternative analysis and Response 7 of this letter regarding the project's need for access to sufficient available capacity on an existing electric transmission system.

59. Please refer to Tribal Letter 1, Response 4 regarding the adequacy of the baseline wildlife study.

60. Please refer to State Agency Letter 3, Response 18 regarding local raptor hunting behavior and the need for setbacks from ridgelines.

61. Please refer to Response 26 of this letter.

62. Please refer to Response 25 of this letter regarding rodent population surveys. Please refer to Response 39 of this letter regarding potential exposure to humans of the hantavirus.

63. Please refer to Organization Letter 8, Response 11 regarding nighttime wildlife surveys; State Agency Letter 3, Response 14 regarding adequacy of bat surveys; and Response 23 of this letter regarding owl surveys.

64. Please refer to Organization Letter 8, Response 11 regarding nighttime wildlife surveys; State Agency Letter 3, Response 14 regarding adequacy of bat surveys; and Response 23 of this letter regarding owl surveys.

65. Please refer to Response 47 of this letter.

66. As stated in Section 3.9.3 of the Draft EIS, not every potential view receptor in the project area has been documented. Individual viewpoints used in the Draft EIS visual impact analysis were chosen as being the most representative for the different roads, population areas, and recreation areas where views of the wind turbines would occur. Viewpoint 4 represents views from a residence at the upper end of Elk Springs Road.

67. Please refer to Individual Letter 13, Response 6.

68. Please refer to Local Agency Letter 2, Response 54.

69. Please refer to Individual Letter 11, Response 10.

70. Please refer to Individual Letter 13, Response 6.

71. Please refer to Individual Letter 11, Response 2 regarding project setbacks from future development on nonparticipating properties.

72. Safety setbacks are proposed for ice throw, blade throw, and tower collapse risks. Setbacks are not proposed for shadow-flicker, but as explained in Local Agency Letter 2, Response 54, the Applicant will control the operation of turbines to minimize shadow flicker for non participating residences within 2500 feet of a turbine.

73. Please refer to Individual Letter 15, Response 23 regarding setbacks from private roads.

74. Please refer to Local Agency Letter 2, Response 49 regarding setbacks for blade throw and Individual Letter 15, Response 27 regarding setbacks for ice throw.

75. Please refer to State Agency Letter 3, Response 18 regarding setbacks from ridgelines.

76. Please refer to Response 8 of this letter.

77. Mitigation for shadow-flicker impacts is not required by law or regulation but is being offered to minimize perceived problems at those potentially affected residences. Please refer to Local Agency Letter 2, Response 54 regarding mitigation offered for shadow-flicker.

Elk Herd Migrating near Blue Canyon Wind Farm, Oklahoma 2004

Source: Wind Ridge Power Partners LLC 2004.

Responses to Comments in Individual Letter 24 from Keith Johnson

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment. Please refer to Organization Letter 8, Response 4 regarding the wildlife cumulative impact analysis.

2. Please refer to State Agency Letter 3, Response 4 regarding the demonstrated demand for wind power. While conservation will help reduce the amount of new power generation that may be required in the future, it is not predicted to replace the need for new generation (please refer to Organization Letter 8, Response 3 for more information). A similar argument can be made for why upgrading the existing power distribution grids would not by itself replace the need for new generation.

3. Please refer to State Agency Letter 3, Response 4 regarding the demonstrated demand for wind power.

4. The Draft EIS acknowledges that the proposed project is not consistent with nor is it in compliance with Kittitas County land use plans or zoning ordinances (see Section 3.6). The Draft EIS evaluates the project's potential effects on bird and bat mortality and loss of habitat, including shrub-steppe (see Section 3.2). The Final EIS has been updated to reflect mortality rates for a project with a maximum of 65-turbines. It is anticipated that the project would result in an average of two to three raptor fatalities per year, between 30 to 200 annual passerine fatalities, and between 65 to 130 annual bat fatalities. The project would also result in the permanent loss of approximately 40 acres of shrub-steppe habitat. However, mitigation has been proposed through consultation with WDFW that would adequately mitigate for these potential impacts.

   Please refer to State Agency Letter 3, Response 13 regarding the Technical Advisory Committee (TAC) that will be established to evaluate the mitigation and monitoring program.

5. Please refer to Tribal Letter 1, Response 4 regarding the adequacy of the baseline wildlife study. Please refer to Organization Letter 8, Response 11 regarding nighttime wildlife surveys. Please refer to Organization Letter 8, Response 4 regarding the wildlife cumulative impact analysis. There are no available data that document cumulative mortality rates of wind farms located 1.6 miles apart.

6. The Draft EIS acknowledges that bald eagles are frequently seen flying in the KVWPP and Desert Claim project areas during the winter and early spring. Please refer to Organization Letter 8, Responses 4 and 27 regarding cumulative bald eagle mortality.

   Please refer to State Agency Letter 2, Response 16 regarding the project Habitat Conservation Plan, Endangered Species Act (ESA), and incidental take of bald eagles.

7. Please refer to State Agency Letter 2, Response 16 regarding the Bald Eagle Protection Act, the project Habitat Conservation Plan, ESA, and incidental take of bald eagles. The bald eagle is a federally threatened species, whereas the golden eagle is not federally listed but is a state species of concern. Golden eagles, while not protected under the incidental take permitting process associated with the ESA, are still protected under the Bald Eagle Protection Act.

   Please refer to State Agency Letter 3, Response 13 regarding the TAC that would be established to evaluate the mitigation and monitoring program and address the potential decommissioning or moving of turbines if wildlife mortality rates exceed EIS estimates.

8. Please refer to State Agency Letter 3, Response 14 regarding the adequacy of the bat surveys. Please refer to Organization Letter 8, Response 11 regarding nighttime surveys and surveys during inclement weather. Please refer to Organization Letter 8, Response 19 regarding use of radar technology.

9. Several measures are proposed to restore temporarily disturbed habitat at the project site (see Section 3.2.5 of the Draft EIS). Please refer to State Agency Letter 3, Response 13 regarding the TAC that would be established to evaluate the mitigation and monitoring program.

10. Please refer to Tribal Letter 1, Response 4 regarding the adequacy of the baseline wildlife study. Livestock and wildlife carcasses as a source of food for bald eagle are discussed in Section 3.2.3 of the Draft EIS.

11. Please refer to State Agency Letter 3, Response 13 regarding the TAC that would be established to evaluate the mitigation and monitoring program and to address the potential decommissioning or moving of turbines if wildlife mortality rates were to exceed EIS estimates. Please refer to Organization Letter 8, Response 2 regarding project comparisons to the Altamont Pass Wind Resource Area.

12. The proposed depth of the turbine foundations is presented in Section 2.2.4 of the Draft EIS (Foundation Construction) and would vary depending on the type of selected turbine and foundation design. The depth of the excavated spread footing foundations is expected to range from 14 to 22 feet. The depth of vertical mono-pier foundations could range from 15 to 35 feet deep depending on the composition of the underlying rock. Removing the turbine foundation to a depth of 3 feet is included in the Applicant's wind option agreements with local landowners; therefore, the affected landowners are fully aware of the Applicant's plans.

13. Thank you for your comment.

Responses to Comments in Individual Letter 25 from Jeffrey S. Howard

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Table 2-9 of the Draft EIS (renumbered Table 2-11 in the Final EIS) estimates annual carbon dioxide emissions at 234,297 tons. As noted in footnote number 2, emission estimates are based on 1993 data. Correcting for technology improvements in emissions control, projected generation emissions are anticipated to be different. Using more recent (2000) data from existing operating facilities, projected nitrogen dioxide and carbon monoxide emissions are expected to decrease, but carbon dioxide emissions are anticipated to increase to more than 2 million tons per year. Table 2-11 of the Final EIS has been revised to clarify that correcting the data for technology improvements in control of regulated pollutants would result in an increase of carbon dioxide emissions.

2. Figures representing Noise Impact Zones presented in Appendix D of the Draft EIS have been replaced by Figure 3.12-2 in the Final EIS.

3. Please refer to Local Agency Letter 2, Response 10 regarding additional analysis of offsite alternatives.

4. Thank you for your comment. Please refer to Local Agency Letter 2, Response 19 regarding updated information and analysis of the project's effects on radio interference.

5. Section 3.9 of the Draft EIS contains multiple source references, including, but not limited to: *Landscape Aesthetics, A Handbook for Scenery Management* (U.S. Forest Service 1995), *Visual Impact Assessment for Highway Projects* (Federal Highway Administration 1988), *Swift Water Corridor Vision Plan* (Kittitas County 1997a), and *Wind Power in View: Energy Landscapes in a Crowded World* (Pasqualetti et al. 2001). This section of the Draft EIS was prepared by a senior landscape architect from the firm Otak Inc. with over 25 years of experience. The visual impact conclusions were based on the professional judgment of the EIS author after a thorough review of background materials, including research on the general topic of wind power visual effects (e.g., Pasqualetti et al. 2001) and multiple visits to the project area.

   Comments on the photo simulations are noted. The Draft EIS acknowledges that under certain lighting conditions, turbines viewed from long distances would have greater contrast with the simulated backdrop, thus increasing the degree of visual impact. Nonetheless, the photo simulations are representative of the type and extent of visual impacts that are expected to occur as a result of project implementation.

6. Please refer to Key Issue B in Section 2 of this volume regarding property values.

7. Please refer to Key Issue B in Section 2 of this volume regarding property values.

8. The specific power generation source(s) required to back up the proposed wind power project is not known at this time. Because of its flexible nature, it is likely that hydroelectric power would be used to provide most of the backup power. Hydroelectric power is controllable, fast, and renewable. Hydroelectric dams are perhaps best suited for "shaping" energy output from wind farms because their output can easily be ramped up and down by releasing more water through turbines (Mulick 2004). Please refer to Organization Letter 4, Response 9 for more information.

9. Please note that over 60 new references have been cited in Volume 2 of this Final EIS (see Section 1, Introduction to Volume 2, Responses to Comments). The majority of this new reference list includes sources prepared by or for federal, state, and county government as well as documents prepared by independent scientific researchers.

   The responsibility of EFSEC's independent EIS consultant is to review and analyze the Applicant's application for site certification (ASC) and supporting documents for adequacy and compliance with EFSEC regulations. The consultant then used this and other relevant and available information to prepare the EIS. The Draft EIS presents an independent and objective evaluation of the project and discloses a full range of potential impacts to the surrounding community. It reflects the independent judgment of EFSEC's consultant based on relevant and available data and is consistent with the Washington State Environmental Policy Act guidance that an EIS be prepared in a professional manner with appropriate interdisciplinary methodology (WAC 197-11-420).

10. Thank you for your comment.

Responses to Comments in Individual Letter 26 from William Erickson

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. The Draft EIS acknowledges that the highest expected fire risk at the project site occurs during the hot, dry summer season. Construction of the KVWPP would add an element of potential fire risk to the environment. However, fires are extremely rare on modern turbines. Mechanical fires were more common in the 1980s, primarily from disc brakes that deployed and overheated. Newer turbines do not have a high-speed disc because of the adequacy of the other redundant braking systems. Also, please refer to State Agency Letter 3, Response 24 regarding fire safeguards in modern wind turbines.

2. The Applicant would establish and maintain policies of insurance during the development, construction, and operation of the KVWPP. Such forms of insurance would be established and maintained as required by state, federal, and local ordinance or law; customary business practice; and third-party participants and lenders. In addition to automobile and worker's compensation insurance, the insurance coverage would include commercial general liability insurance, property insurance, machinery insurance, and environmental impairment (see Section 1.3 of the January 2003 Application for Site Certification for more detail).

Responses to Comments in Individual Letter 27 from Linda Waits

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment. Please refer to Individual Letter 9, Response 3 regarding the project's benefits.

   The Washington State Environmental Policy Act rules (WAC 197-11-448) do not require agencies to address concerns such as tax treatment of the wind energy industry in an EIS. The statute and rules envision general economic considerations as factors decision-makers would evaluate apart from the environmental impacts addressed in an EIS.

2. Thank you for your comment.

3. Thank you for your comment. Your opposition to the project is noted.

Responses to Comments in Individual Letter 28 from Walt Farrar

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. EFSEC will take all necessary measures to make adjustments at public meetings to ensure that that public can fully understand the proceedings and the information being communicated.

2. Thank you for your comment. However, the requested presentation is not required under the Washington State Environmental Policy Act.

3. Please refer to Local Agency Letter 2, Response 10 regarding additional analysis of offsite alternatives.

4. EFSEC and their consultants reviewed all written comments submitted during the 30-day Draft EIS scoping process that concluded March 14, 2003. They also reviewed the transcription of flip chart notes taken at the March 12, 2003, agency scoping meeting in Ellensburg, Washington, along with the transcript documenting oral comments provided at the public scoping meeting conducted later that evening in Ellensburg. A summary of oral and written comments received from the agencies and the public through the end of the public comment period was documented in the Kittitas Valley Wind Power Project Scoping Summary, posted on EFSEC's Web site in April 2004. These comments were used to help refine the scope and content of the Draft EIS. Substantive scoping comments are addressed throughout the Draft EIS.

Responses to Comments in Individual Letter 29 from Ken Fyall

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Section IX (Washington State Environmental Policy Act Environmental Checklist) A.4. of the Cascade Field and Stream Club's (CFASC) November 7, 2003 County Development Activities Application states that Zilkha Renewable Energy's proposed wind farm may affect the subject property but that no conflict between these two uses is apparent (the CFASC Application is reproduced as an attachment to Organization Letter 4). Please refer to Organization Letter 4, Response 24 for more information.

2. Please refer to Organization Letter 4, Response 24.

3. Please refer to Organization Letter 4, Response 24.

4. Please refer to Organization Letter 4, Response 24.

5. No overhead electrical collection or transmission lines are currently present at the CFASC parcel and none are proposed at this parcel as part of the KVWPP (see Figure 2-1 of the Final EIS). Therefore, gunshots would not conflict with or adversely affect overhead electrical lines.

6. The closest structure to the CFASC parcel that would support the wind power project would be the proposed Bonneville substation. The Bonneville substation would be located approximately 3,000 feet northeast of the northeast corner of the CFASC parcel. Because rifle activities would be limited to the CFASC property, there would be no impacts to the Bonneville substation.

7. Thank you for your comment. Please refer to Responses 1 through 6 of this letter.

8. Thank you for your comment.

9. Thank you for your comment. Your opposition to the project is noted.

Responses to Comments in Individual Letter 30 from Dwight Lee Bates

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Please refer to Tribal Letter 1, Response 4 regarding the adequacy of the baseline wildlife study.

2. Please refer to Organization Letter 8, Response 2 regarding project comparisons to the Altamont Pass Wind Resource Area. Note that the turbine blades would turn between 10 to 23 rotations per minute. Turbine blades on the larger 410 foot turbine models would turn at 17 to 20 rotations per minute.

   The KVWPP design and proposed mitigation measures are consistent with and follow the recommendations and guidelines developed by the Washington Department of Fish and Wildlife as stated in their January 20, 2004, letter regarding the KVWPP (WDFW 2004).

   Also, please refer to State Agency Letter 3, Response 13 regarding the Technical Advisory Committee that will be established to evaluate the mitigation and monitoring program.

3. Please refer to Tribal Letter 1, Response 4 regarding the adequacy of the baseline wildlife study.

4. Thank you for your comment. Please refer to Tribal Letter 1, Response 4 regarding the adequacy of the baseline wildlife study.

5. Operational fire prevention and response plans are not typically prepared for projects at the Draft or Final EIS stage. If EFSEC recommends and the governor approves the project, the fire prevention and suppression plans would be requirements of the Site Certification Agreement (SCA). Also, please refer to Individual Letter 11, Response 10.

6. Thank you for your comment.

7. Thank you for your comment.

8. Thank you for your comment.

9. Thank you for your comment. There are no documented human or animal health impacts associated with shadow-flicker from wind turbines (Nielsen, Prefiled Testimony, Exhibit 40). Please refer to Individual Letter 3, Response 5 regarding the reliability of the Lincoln Township Wind Turbine Survey.

10. The Draft EIS summarizes existing relevant studies relating to wind development and property value effects (see Section 3.7.2) and concludes that no long-term impacts to

property values are expected as a result of the project. Also, please refer to Key Issue B in Section 2 of this volume regarding property values.

11. Please refer to Local Agency Letter 2, Response 49 regarding setbacks for blade throw and Individual Letter 15, Response 27 regarding setbacks for ice throw.

    Operational plans such as project maintenance plans are not typically prepared for a project at the Draft or Final EIS stage. If EFSEC recommends and the governor approves the project, the specific requirements and process for conducting project maintenance activities and inspections would be governed by the terms and conditions set forth in the SCA.

12. Please refer to Individual Letter 15, Response 27 for a discussion of ice throw setbacks.

    As described in Individual Letter 15, Response 28, the proposed project would be fitted with multiple wind vane sensors at a number of locations to ensure that there is a redundant system in place for ice detection. If an icing event were detected by the project's central control system, the system would perform any necessary action (Jorgensen, Prefiled Testimony, Exhibit 37). In the event of faults, the system could send signals to a fax, pager, or cell phone to alert operations staff of the situation.

13. Please refer to State Agency Letter 3, Response 11 regarding the production tax credit for renewable energy production facilities.

14. The Draft EIS provides extensive documentation of the expected impacts and thorough, objective analysis of their significance. Additional information and analysis of two proposed action scenarios, as well as of two offsite alternatives, has been included in the Final EIS (Volume 1). Also, please refer to Key Issue A in Section 2 of this volume regarding project definition.

15. Impacts to cultural resources have been thoroughly discussed in Section 3.8 of the Draft EIS and summarized in Table 3.8-1. Areas where facilities are proposed were surveyed and the impacts were adequately assessed. The Draft EIS addresses potential project impacts on prehistoric sites, historic sites, and Traditional Cultural Properties. Section 1.7.4 of the Draft EIS only refers to those issues that are yet to be resolved through consultation with the State Historic Preservation Officer and the Tribes. Since the production of the Draft EIS, these issues have been resolved and a Cultural Landscape Investigation and assessment of impacts to historic properties have been completed. This study found that the section of the North Branch Canal that crosses the project site was not eligible for inclusion on the National Register of Historic Places. The Washington State Department of Archaeology and Historic Preservation (DAHP) concurred with this finding in August 2004.

    Consultation with the Yakama Nation is ongoing. Please refer to Local Agency Letter 2, Response 18. Sections 1.7.4 and 3.8 of the Final EIS have been revised accordingly.

16. A complete Section 106 investigation of the project site has been completed. Lithic Analysts prepared archaeological and historic resources reports on the findings from their investigations, and the Applicant pursued Tribal consultations with the Yakama Nation. The Section 106 findings were reviewed by DAHP, and DAHP concurred with the findings of the consultant firm (Lithic Analysts). In addition, DAHP has reviewed the Draft EIS and submitted their comments (see State Agency Letter 4 in Volume 2 of this Final EIS).

17. Please refer to Local Agency Letter 2, Response 18.

18. Please refer to Tribal Letter 1, Response 4 regarding the adequacy of the baseline wildlife study.

19. Section 1.9.5 of the Draft EIS acknowledges that the combined energy output of the three proposed wind power projects in Kittitas County on a long-term basis would be approximately 180 average MW of electricity, and that this would represent a relatively small addition to the total regional electricity supply. Please refer to State Agency Letter 3, Response 4 regarding demonstrated need for the proposed project.

20. Thank you for your comment.

21. Thank you for your comment. To ensure aircraft safety, the proposed turbines are required to comply with the minimum lighting requirements imposed by the Federal Aviation Administration (FAA). Please refer to Local Agency Letter 1, Response 3 regarding FAA safety lighting standards.

22. Please refer to Individual Letter 3, Response 5 regarding the reliability of the Lincoln Township Wind Turbine Survey.

23. The process for project decommissioning is described in Section 2.2.6 of the Draft EIS. If EFSEC recommends and the governor approves the project, the specific terms of project decommissioning, including financial assurances from the Applicant, would be governed by the terms and conditions set forth in the SCA.

24. The KVWPP turbines would not be considered obstructions and would not interfere with protected airspace associated with Bowers Field. Please refer to Local Agency Letter 3, Response 9 regarding the project aviation study.

    There is a private facility, identified as the Flying Rock Ranch grass airstrip, located approximately 1 mile due east of KVWPP turbine string J. As a private facility unregulated by the FAA, there is no protected airspace associated with the Flying Rock Ranch airstrip. However, in compliance with applicable FAA flight rules and regulations, aircraft outside of other controls (such as instrument arrival or departure procedures or visual flight rule procedures) must at all times maintain a safe minimum flying altitude. Please refer to Individual Letter 11, Response 11 for further information.

25. Please refer to Local Agency Letter 2, Response 54 regarding setbacks for shadow-flicker effects.

    The Draft EIS acknowledges that the presence of flashing lights on the tops of turbines would be considered a significant unavoidable adverse impact, but these lights are required by FAA requirements and additional setbacks are not proposed.

    Please refer to Individual Letter 15, Response 34 regarding the adequacy of proposed setbacks for noise impacts. Please refer to Individual Letter 15, Response 27 regarding safety setbacks for ice throw. Please refer to Local Agency Letter 2, Response 49 regarding safety setbacks for blade throw.

26. Please refer to Individual Letter 3, Response 5 regarding the reliability of the Lincoln Township Wind Turbine Survey and to Key Issue B in Section 2 of this volume regarding property values.

Responses to Comments in Individual Letter 31 from Lee Bates

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment. Please refer to Organization Letter 8, Response 2 regarding project comparisons to the Altamont Pass Wind Resource Area.

Responses to Comments in Individual Letter 32 from Robert G. Green

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment. Your support for the project is noted.

Responses to Comments in Individual Letter 33 from Clem A. Staloch

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. A 2002 survey conducted by the Evergreen Research Group showed that local voters supported wind energy projects in Kittitas County by a margin of more than 3 to 1. Based on a randomly selected, statistically valid poll of 400 registered voters in the County, of the 92% who said they were already familiar with the issue, support for wind was recorded at 70 %, 19 % were opposed, and 12 % were undecided. However, the issue of support for or against the project is not germane to the purpose of an EIS, which is to provide impartial discussion of environmental impacts (WAC 197-11-400[2]).

2. There are no plans to close the project area to recreation. The project area consists of private lands and lands owned by the State Department of Natural Resources (DNR). Hunting, bird watching, and other recreational pursuits on private lands leased for wind power would continue to be at the discretion of individual landowners. Furthermore, the Applicant has agreed to allow controlled hunting of big game on DNR lands if necessary to manage these herds.

3. As discussed in Section 3.2.3 of the Draft EIS, it is difficult to predict with certainty the effects of the proposed wind project on mule deer and elk. During construction, elk and mule deer would likely avoid the site because of the disturbance associated with construction equipment and other human activity. Given the amount of disturbance within the project area associated with residential development and existing roads, disturbance levels after facility operation begins would not greatly increase. Some avian species that occupy the project area may relocate to avoid disturbances associated with the project. There is no evidence that activities associated with the project would result in female deer aborting their fawns.

4. If bird-nesting boxes are encountered at the project site, the Applicant will not remove the boxes without prior consent from the property owners.

5. Please refer to Local Agency Letter 3, Response 1 regarding traffic levels and the project's effect on Hayward Road. Please refer to State Agency Letter 3, Response 4 regarding the need for the proposed wind energy facility.

   The proposed project is economically sound. Please refer to updates to Section 3.7.2 of the Final EIS regarding revisions to the proposed property tax revenue projections.

6. Please refer to Individual Letter 15, Response 4 regarding the project's capacity factor.

7. Your opposition to the project is noted.

8. Please refer to Local Agency Letter 3, Response 9. The County will be required to take into account the placement of the proposed KVWPP turbines, as well as other wind

power developments proposed in the Kittitas Valley, in considering its plans to extend runways at Bowers Field. However, given the distance between the closest proposed KVWPP turbine and Bowers Field (over 6 miles), a runway expansion of 1,000 feet would be unlikely to result in project conflicts with protected airspace.

9. Your comment is noted.

10. The Draft EIS states that the KVWPP is projected to require between 12 to 14 full-time employees. This projection is based on the working knowledge and experience that the Applicant has at other operating wind power sites that it owns and manages.

11. Please refer to Individual Letter 15, Response 4 regarding project viability.

    The presence of the proposed turbines would not change existing wind conditions in the project area. Please refer to Local Agency Letter 3, Response 9 regarding aviation safety.

12. Your opposition to the project is noted.

Responses to Comments in Individual Letter 34 from Melissa Bates and Jim Briggs

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment. Your support for the project is noted.

Responses to Comments in Individual Letter 35 from Joseph Powell

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment.

2. It is assumed that the "Park Creek" site is the general area in and around (to the west) of the proposed Wild Horse project site. As described in Section 3.14 of the Final EIS, The Wild Horse Wind Power Project has been constructed approximately 10 miles east of the town of Kittitas. Please refer to Local Agency Letter 2, Response 10 regarding additional analysis of offsite alternatives.

3. Please refer to Key Issue B in Section 2 of this volume regarding property values.

Responses to Comments in Individual Letter 36 from Hal and Gloria Lindstrom

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Please refer to State Agency Letter 3, Response 4 regarding demonstrated need for the proposed project. Please refer to State Agency Letter 3, Response 11 regarding the production tax credit for renewable energy production facilities.

   Of the approximate 6,000-acre project area, only 108 acres of land (1.5% to 1.8%) would be permanently converted from cattle grazing/rangeland to energy production. (Please refer to Individual Letter 23, Response 5 regarding clarification of project site acreage.) Although Kittitas County classifies wind power projects as utilities rather than industrial uses, the Draft EIS acknowledges that the project would result in a significant unavoidable adverse impact because it would greatly alter the appearance of the rural landscape over a large area of Kittitas Valley.

   Please refer to Individual Letter 15, Response 4 regarding viability of the site for wind power and efficiency of the proposed project. Please refer to Organization Letter 4, Response 9 regarding the need for backup power.

2. Backup power will most likely be provided by existing hydroelectric power resources, which do not generate carbon monoxide emissions. Please refer to Organization Letter 4, Response 9.

3. Your comment is noted.

4. Thank you for your comment.

5. Please refer to Individual Letter 1, Response 8 regarding the project permitting process. Please refer to Individual Letter 33, Response 1 regarding the issue of support for or against the project.

6. At the time the Draft EIS was prepared, a full study on the impacts to historic properties and the cultural landscape had not been prepared. A rural historic/cultural landscape is defined in the National Register Bulletin 30 as "a geographic area that historically has been used by people, or shaped by human activity, occupancy, or intervention, and that possesses a significant concentration, linkage, or continuity of areas of land use, vegetation, buildings and structures, roads and waterways, and natural features." In July 2004, Lithic Analysts submitted this study to the State Department of Archaeology and Historic Preservation (DAHP) for concurrence. DAHP agreed with Lithic Analysts that the "area does not constitute a cultural or rural landscape, as identified by the National Register of Historic Places (NRHP)." Three properties were identified as historic structures, but none of these were considered to be eligible for listing in the NRHP.

7. Please refer to Tribal Letter 1, Response 4 regarding the adequacy of the baseline wildlife study. Please refer to Organization Letter 8, Response 11 regarding nighttime wildlife surveys, Response 16 regarding bat deaths at the referenced West Virginia wind plant, and Response 19 regarding use of radar technology for studying bats. Please refer to State Agency Letter 3, Response 14 regarding the adequacy of the bat surveys.

8. Please refer to Tribal Letter 1, Response 4 regarding the adequacy of the baseline wildlife study. Please refer to Organization Letter 8, Response 2 and Individual Letter 15, Response 18 regarding project comparisons to the Altamont Pass Wind Resource Area.

9. As discussed in 3.2.2 of the Draft EIS, while few bald eagles were observed within the project site, as many as 12 eagles were observed in a single day along the Yakima River (Table 3.2-4).

   Please refer to State Agency Letter 2, Response 16 regarding the Bald Eagle Protection Act, the project Habitat Conservation Plan, Endangered Species Act, and incidental take of bald eagles.

10. If both the KVWPP and Desert Claim wind power projects were developed, there would be up to 155 turbines installed. Facilities from the two projects would occupy a permanent footprint of approximately 184.5 acres (the remaining portions of the 6,000-acre and 4,783-acre project areas would remain undeveloped). The turbine blades would turn between 10 to 23 rotations per minute.

    Cumulative impacts of the three projects in Kittitas County (KVWPP, Desert Claim, and Wild Horse) on bats and avian species are updated in Section 3.14.6 of the Final EIS. Please refer to Organization Letter 8, Response 4 for more information regarding the cumulative impact analysis.

11. Please refer to Tribal Letter 1, Response 4 regarding the adequacy of the baseline wildlife study.

12. Section 3.9 of the Draft EIS includes an extensive analysis of views from numerous locations, with particular attention to views of the Stuart Range (e.g., see descriptions of Viewpoints 9 and 10 and the discussion of "scenic views of regional importance"). This section of the Draft EIS also relates that not all of the identified visual impacts can be mitigated. The Draft EIS does not and could not propose mitigation for the "scenic impact on the viewscape."

Responses to Comments in Individual Letter 37 from Tim Henebry

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Your opposition to the project is noted. Please refer to revisions to Sections 1 and 3 of the Final EIS for updated information concerning potential project impacts on visual resources, shadow-flicker, noise, communication services, and wildlife (including avian species).

2. Thank you for your comment.

3. Please refer to Local Agency Letter 2, Response 10 regarding additional evaluation of alternative Kittitas County sites in the Final EIS.

   Section 3.9.6 of the Draft EIS concludes that for many viewers, the presence of the wind turbines represents a significant unavoidable adverse impact because it would greatly alter the appearance of the rural landscape over a large area of the Kittitas Valley.

Responses to Comments in Individual Letter 38 from Chris Cole and Roger Binette

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. The Draft EIS relies on factual, unbiased reports and testimony by expert witnesses in their field. Please refer to Individual Letter 3, Response 5 regarding the reliability of the Lincoln Township Wind Turbine Survey.

   Expert witness testimony submitted on behalf of the Applicant explains that the incidence rate of documented cases where wind turbines have malfunctioned is extremely low. Furthermore, the circumstances surrounding these cases have been rectified (see Jorgensen, Prefiled Testimony, Exhibit 37 and Bernay, Prefiled Testimony, Exhibit 38 for more information). Based on the operating history of wind turbines elsewhere, the potential health and safety risks to the public, livestock, and wildlife posed by this project are less than the risks posed by other common energy-generating technologies and activities (Kammen, Prefiled Testimony, Exhibit 39).

2. Thank you for your comment. Please refer to Key Issue B in Section 2 of this volume regarding property values.

3. According to expert witness testimony (Erickson, Prefiled Testimony, Exhibit 29R), "The vast majority of evidence indicates that the bat populations that are at risk of collision with wind turbines are foliage dwelling migratory bats and in the Pacific Northwest, are hoary bats (*Lasiurus cinereus*) and silver-haired bats (*Lasionycteris noctivagans*). Diets of hoary bats are comprised mainly of moths. Silver-haired bats appear to be more of a generalist, eating a variety of insects. Overall mosquitoes comprise a small proportion of their diets. Post-construction fatality studies at wind plants throughout the U.S. have repeatedly shown that the vast majority of bat fatalities occur during the fall. Studies of resident bats at the Buffalo Ridge (Minnesota) Wind Plant, in conjunction with post-construction fatality monitoring studies, showed that resident bats do not appear to be at great risk of collision with wind turbines. In addition, fatality studies at other wind plants rarely find spring migrant or summer resident bat fatalities. While additional research is necessary to reach a conclusive determination, based on the studies to date, it is believed that many of the bats that are at risk of collision with any given wind plant are migrants, and in the Pacific Northwest these bats could be from northern populations from Canada and/or southern Alaska."

   Mosquito populations are dependent on other environmental conditions. In wet years there are more mosquitoes, and in dry years there are fewer mosquitoes. There is no evidence that mosquito populations in any location would be controlled by fall migrant bats and that bat mortality would lead to more widespread exposure to humans of the West Nile virus (Erickson, Prefiled Testimony, Exhibit 29R).

   Please refer to Individual Letter 23, Response 39 regarding rodent populations and potential exposure to humans of the hantavirus.

4. Thank you for your comment. Please refer to Individual Letter 3, Response 5 regarding the reliability of the Lincoln Township Wind Turbine Survey.

5. Thank you for your comment. Please refer to responses to Local Agency Letter 1 from Derald Gaidos, Kittitas County Fire Marshal.

6. Thank you for your comment. Please refer to State Agency Letter 3, Response 18 regarding raptor observations and flight paths near project area ridgelines.

7. Please refer to Local Agency Letter 2, Response 33 regarding proposed rock-crushing activities.

8. The KVWPP Draft EIS responds to a proposal by a developer to provide power from a wind project. Part of the need for the action is the need to acquire power from renewable resources, specifically from wind resources. Electric utilities may consider acquiring power from other renewable energy projects, such as biomass (and subsequently conduct appropriate Washington State Environmental Policy Act environmental analysis of them), if an entity proposes to develop such a project and the project generates a sufficient quantity of power and is price competitive.

Responses to Comments in Individual Letter 39 from Helen Wise

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment. Your support for the project is noted.

2. Thank you for this information.

3. Thank you for your comment.

Responses to Comments in Individual Letter 40 from Arthur DePalma

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Please refer to Individual Letter 15, Response 4 regarding the viability and efficiency of the proposed wind power project. Please refer to Organization Letter 4, Response 9 regarding the project's backup power needs.

2. Please refer to State Agency Letter 3, Response 11 regarding the production tax credit. If the project were to be terminated for any reason, the Applicant would be required to remove the turbines.

   The Washington State Environmental Policy Act (SEPA) rules (Washington Administrative Code [WAC] 197-11-448) do not require agencies to address concerns such as tax treatment of the wind energy industry in an EIS. The statute and rules envision general economic considerations as factors decision-makers would evaluate apart from the environmental impacts addressed in an EIS.

3. This project is proposed because of existing and projected future demands for energy. The SEPA rules (WAC 197-11-448) do not require agencies to address concerns such as wind power revenues and profits in an EIS. The statute and rules envision general economic considerations as factors decision-makers would evaluate apart from the environmental impacts addressed in an EIS.

4. Thank you for your comment. Please refer to Organization Letter 4, Response 9 regarding the project's backup power needs.

5. The proposed project consists of up to 65 turbine towers ranging in total height from 330 to 410 feet. The outer edges of Ellensburg lie approximately 11 miles southwest of the project site. From most areas of Ellensburg, views toward the project site are blocked by structures and trees in the foreground of the view; however, there are a few locations where the project site ridges are visible in the distance. The proposed turbines would be seen from these locations against the slopes of the ridges and more distant hills, and would have a minimal visual impact from these viewpoints. Table Mountain and Lion Rock are located more than 5 miles north/northeast of the project site, but as acknowledged in Section 3.9 of the Draft EIS, the impacts of the project on recreational users of National Forest lands would be moderately high.

6. Thank you for your comment.

7. The Draft EIS visual analysis does identify particular areas where the view impact would be significant. Please refer to Key Issue B in Section 2 of this volume regarding property values.

8. Please refer to Individual Letter 1, Response 9 regarding quality of life issues.

Although there is no measurement available to quantify impacts to the "severity of the quality of life," the Draft EIS, using standard methods, does evaluate impacts to visual quality. The degree to which visual impacts affect the quality of life of individuals is likely to vary greatly.

9. The Draft EIS acknowledges that the flashing red lights would be a new visual element into the project area's nighttime landscape and would be likely to have an adverse effect on views from residential properties located within 1 mile of the project. Although the project's nighttime lighting may be visible throughout the Kittitas Valley, it would be most noticeable from within a distance of 1 mile. Please refer to Local Agency Letter 1, Response 3 regarding Federal Aviation Administration lighting requirements for the proposed project.

10. Thank you for your comment. Your opposition to the project is noted.

Responses to Comments in Individual Letter 41 from Felicia Persson

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Please refer to Individual Letter 1, Response 9 regarding quality of life issues.

   Please refer to Responses 2 through 5 of this letter regarding specific visual, noise, shadow-flicker, wildlife, and fire-fighting concerns.

2. Because wind turbines are always located where the wind speed is higher than average, the background noise of the wind tends to mask sounds that might be produced by operating wind turbines.

   The Applicant intends to implement blasting notification signage and temporary traffic control zones (modeled after current Washington State Department of Transportation blasting notification standards) along stretches of road within 1,000 feet of proposed blasting activities. No blasting activity would take place within 500 feet of roads. This measure has been identified in Section 3.12.3 of the Final EIS.

   The sensitivity of residents and recreational users to operational noise has been considered during the noise impact analysis. The project is required to meet Class A EDNA standards for residential and recreational land uses, and the Final EIS recommends that the Applicant conduct an acoustical analysis of the final turbine layout to demonstrate compliance with the Washington Administrative Code (173-60). If compliance were not demonstrated, turbines should be relocated or removed, to the extent necessary, so that the project meets applicable regulatory thresholds to protect the sensitivity of nearby residents and recreational users.

3. Section 3.4.2 of the Final EIS has been revised to include a discussion of outdoor exposure to shadow-flicker. Shadow-flicker could be noticed by people outdoors at locations other than residences in the project area. Because the shadow-flicker model requires input of specific mapped locations, it does not take into account instances where people performing functions outdoors away from buildings might be exposed to shadow-flicker. The shadow-flicker contour map presented in Appendix B of the Draft EIS illustrates the potential extent of shadow-flicker exposure throughout the project area. For a person engaged in outdoor activity, exposure to shadow-flicker would likely be a transitory experience that would be experienced as an annoyance or a distraction and could usually be avoided by moving out of the relatively narrow band of the turbine shadow. Furthermore, the intensity of the shadow-flicker effect would be low because of the more diffuse light outside. Please refer to Individual Letter 23, Response 37 regarding shadow-flicker effects on pets and livestock.

   There are no documented human health impacts such as vertigo associated with shadow-flicker from wind turbines (Nielsen, Prefiled Testimony, Exhibit 40).

Because shadow-flicker can only occur when turbine blades are moving, shadow-flicker could (in principle) be prevented by shutting down specific turbines at times when weather and sun conditions would otherwise result in shadow-flicker at specific receptor locations. The Applicant has committed to turning off those turbines that cause shadow-flicker annoyance effects during the times the annoyance occurs. This mitigation measure would be implemented for non-participating landowners whose residence falls within 2,500 feet of a turbine and has a line of sight view of the turbine in question.

4. Extensive wildlife surveys were performed as part of the project analysis. A summary of results from the *Wildlife Baseline Study for the Kittitas Valley Wind Project* and the *Draft Biological Assessment of Endangered, Threatened, Proposed & Candidate Species* are presented in Exhibits 11 and 12, respectively, of the Applicant's Application for Site Certification (January 2003). Data from these studies are presented in Section 3.2 of the Draft EIS, as summarized in Section 1.

   The estimate that there would be 15 raptor fatalities annually for the three proposed wind power projects in Kittitas County is based on the report entitled *Cumulative Impacts Analysis for Avian and Other Wildlife Resources from Proposed Wind Projects in Kittitas County, Washington* (WEST, Inc. 2003). (This report is reproduced in its entirety in Appendix A of the Draft EIS). This estimate has been updated in Section 3.14 of the Final EIS to 8 to 27 raptor fatalities per year for the three projects combined with 282 turbines (Desert Claim Wind Power LLC 2006; EFSEC 2004a, 2005a).

   The EIS for the Desert Claim project acknowledges that eagles and hawks have been observed at that project site. The conclusions reached in the cumulative impact analysis are based on the results of the data collected during extensive site surveys of the three proposed project sites as well as on the results of studies undertaken at other operating wind power sites in the U.S. These projects include Buffalo Ridge (Minnesota), Foote Creek Rim (Wyoming), Klondike (Oregon), Nine Canyon (Washington), Zintel Canyon (Washington), Stateline (Oregon/Washington), and Vansycle (Oregon).

   Please refer to Organization Letter 8, Response 4 regarding the cumulative impact analysis and to Tribal Letter 1, Response 4 regarding the adequacy of baseline wildlife surveys, including avian surveys.

5. Please refer to State Agency Letter 3, Response 24 regarding fire safeguards in modern wind turbines. Please refer to Individual Letter 23, Response 55 regarding aerial fire fighting techniques.

   As identified in Section 3.4 of the Draft EIS, all onsite service vehicles would be fitted with fire extinguishers, and fire station boxes with shovels, water tank sprayers, etc. would be installed at multiple locations onsite along roadways during summer fire season. These measures will be implemented during both project construction and operations. Please refer to Individual Letter 23, Response 53 regarding cost of public services.

6. Please refer to Individual Letter 1, Response 9 regarding the project's impacts to quality of life.

   Many of the unresolved issues identified in Section 1.7 of the Draft EIS have been clarified through further consultation and coordination with state and local agencies and through completion of additional studies.

   Please refer to State Agency Letter 3, Response 29 regarding updates to the wetland impact analysis. Please refer to Organization Letter 5, Responses 5 and 6 regarding updates to the economic impact analysis. Please refer to Local Agency Letter 2, Response 17 regarding updates to the tourism impact analysis. Please refer to Local Agency Letter 2, Response 18 regarding updates to the historical and tribal resources analysis. Please refer to Organization Letter 5, Response 7 regarding updates to the radio interference impact analysis. Please refer to Responses 1 through 5 of this letter regarding project operations and mitigation measures. Please refer to Local Agency Letter 2, Response 98 regarding the project's decommissioning plan. Please refer to State Agency Letter 3, Response 4 regarding the need for the proposed wind energy project.

Responses to Comments in Individual Letter 42 from Eric Larsen

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. The Draft EIS presents an independent and objective evaluation of the project and discloses a full range of potential impacts to the surrounding community in a manner consistent with the Washington State Environmental Policy Act (SEPA) guidelines and regulations. Please refer to Responses 2 through 31 of this letter.

   Please refer to Individual Letter 9, Response 1 regarding the permitting process for the proposed project.

2. Please refer to Key Issue A in Section 2 of this volume regarding project definition.

3. Thank you for your comment. Please refer to Local Agency Letter 2, Response 10 regarding additional analysis of offsite alternatives.

4. Section 2.7 of the Final EIS has been revised to redefine the No Action Alternative. Please refer to State Agency Letter 3, Response 5. Please refer to Organization Letter 4, Response 9 regarding the project's need for backup power sources.

5. Television signal interference created by wind towers and generator blades was identified at the Top of Iowa Wind Farm, a wind power project developed and operated by Zilkha Renewable Energy near Mason City, Iowa. The discovery of television signal degradation at this wind farm, however, led to research and an evaluation process that was used to predict potential television signal interference at the KVWPP (Johnston 2003).

   Proposed mitigation measures to address the issue of potential television interference, including the recommendation for the Applicant to connect affected residents to an existing cable or satellite television system, are identified in Section 3.13.4 of the Draft EIS.

   Please refer to Local Agency Letter 2, Response 19 regarding updated information and analysis of the project's effects on radio interference. Sections 1.7.6 and 3.13.2 of the Final EIS have been revised to incorporate this new information.

6. Bonneville provided information for the existing transmission tower diagram used in Draft EIS, Figure 2-2. While this might represent the tallest transmission tower in the project area, it is adequately representative of existing conditions.

7. Please refer to Local Agency Letter 1, Response 3 regarding Federal Aviation Administration review of the proposed project's lighting plan.

8. Turbine blades are washed approximately once a year or as needed. A high-pressure water hose is used to wash the turbine blades. No cleaners or solvents would be used in this process.

9. Please refer to State Agency Letter 3, Response 5 regarding the appropriateness of the No Action Alternative.

10. The sizes of the towers shown in Figure 2-6 of the Draft EIS do not represent the upper (maximum) estimate of their size range. The legend indicates that the typical size of turbine technology B (and hence the existing Bonneville transmission tower) would be between 150 to 200 feet. As described in Response 6 of this letter, while this might represent the tallest transmission tower in the project area, it is adequately representative of existing conditions.

11. Please refer to State Agency Letter 3, Response 5 regarding the appropriateness of the No Action Alternative.

12. As discussed in Section 3.2.2 of the Draft EIS, "Although the risk is low, the potential exists for bald eagle fatalities during operation of the project."

    Please refer to State Agency Letter 2, Response 16 regarding the Bald Eagle Protection Act, the project Habitat Conservation Plan, Endangered Species Act, and incidental take of bald eagles, and Organization Letter 8, Response 14 regarding the Migratory Bird Treaty Act.

    Please refer to Tribal Letter 1, Response 4 regarding the adequacy of the baseline wildlife study and State Agency Letter 3, Responses 13 and 16 regarding the Technical Advisory Committee (TAC) that will be established to evaluate the mitigation and monitoring program and EFSEC's ability to enforce compliance with this program.

13. Please refer to Tribal Letter 1, Response 4 regarding the adequacy of the baseline wildlife study. Please refer to Organization Letter 8, Response 11 regarding nighttime wildlife surveys and Response 19 regarding use of radar technology for studying bats. Please refer to State Agency Letter 3, Response 14 regarding the adequacy of the bat surveys.

14. Please refer to Individual Letter 15, Response 19 regarding the TAC that will be established to evaluate the mitigation and monitoring program. Please refer to Individual Letter 23, Response 28 regarding Washington Department of Fish and Wildlife (WDFW) guidelines and appropriate mitigation measures.

15. Although the WDFW states they would prefer the use of white strobe lights at night on turbine towers, red lighting is also acceptable, which is consistent with the Applicant's lighting plan.

16. The Draft EIS presents an independent and objective evaluation of the project and discloses a full range of potential impacts to the surrounding community in a manner consistent with the SEPA guidelines and regulations.

    Please refer to Local Agency Letter 2, Response 54 regarding setbacks for shadow-flicker. Please refer to Individual Letter 23, Response 12 regarding shadow-flicker effects on motorists traveling on local roads. Please refer to Individual Letter 23, Responses 37 and 38 regarding shadow-flicker effects on domestic animals and big game such as mule deer and elk, respectively.

17. Please refer to State Agency Letter 3, Response 5 regarding the appropriateness of the No Action Alternative.

18. Please refer to Key Issue B in Section 2 of this volume regarding property values and Individual Letter 10, Response 1 regarding financial compensation as mitigation for local property owners.

19. The digital images used in Section 3.9 of the Draft EIS were obtained with cameras using lenses that replicate a standard 55 millimeter (mm) lens used in 35 mm cameras that most closely replicate the image seen by the human eye. The camera lenses used were not zoom or wide-angle lenses.

    Many of the digital images include cloudy skies; however, this was not deliberately done to reduce the contrast of a turbine against a sky background. For some distant images such as the view shown in Figure 3.9-10 of the Final EIS (Viewpoint 8: Simulation View), the cloudiness does reduce the amount of contrast. For other images, such as the view shown in Figure 3.9-16 of the Final EIS (simulated view of gray turbines), dark clouds in the background increase the amount of contrast. There is no requirement under SEPA to illustrate the worst-case scenario in the analysis. It is sufficient to show normal conditions for the visual simulations.

20. Thank you for your comment.

21. The difference in tip height between the 330 and 410-foot turbine scenarios is 80 feet. At distances of 0.8 to 3 or more miles (the distance between the turbines and Viewpoint 1 illustrated in Figure 3.9-1 of the Final EIS), this height difference would not be obviously perceptible.

22. Please refer to Individual Letter 10, Response 1 regarding financial compensation as mitigation for local property owners.

23. Global warming is an indirect effect of energy production, whether from natural gas or coal, and therefore it is appropriate to discuss in the Draft EIS. Please refer to State Agency Letter 3, Response 5 regarding the appropriateness of the No Action Alternative.

24. Please refer to State Agency Letter 3, Response 5 regarding the appropriateness of the No Action Alternative.

25. The primary purpose of an EIS is to provide an impartial discussion of environmental impacts and mitigation measures that avoid or minimize adverse environmental impacts. The EIS author's independent evaluation of the project discloses a full range of potential impacts to the surrounding community. The Draft EIS concludes that there would be no significant noise impacts across the project site.

    There is a difference between low-frequency noise and tonal noise. Low-frequency noise is noise with frequencies in the range from 20 hertz (Hz) to 100 Hz and is associated mostly with older-model, downwind turbines. Low-frequency noise from wind turbines is produced by the flow of air over the blades or around the nacelle or tower. Please refer to response to Individual Letter 13, Response 6 regarding low-frequency noise effects.

    Tonal noise is defined as noise at discrete frequencies. Tonal noise produces a "hum" or "whine" sound at a steady pitch. Both mechanical sources and aerodynamic sources can cause tonal noise. Tonal noise from mechanical sources is typically associated with the rotation of mechanical equipment. However, turbines can be designed or retrofitted to minimize mechanically induced tonal noise. This can include adding special finishing to gear teeth, using low-speed cooling fans and mounting components in the nacelle instead of at ground level, adding baffles and acoustic insulation to the nacelle, using vibration isolators and soft mounts for major components, and designing the turbine to prevent noises from being transmitted into the overall structure.

    Aerodynamic noise is generated by the passage of air over the moving blades. Tonal components of aerodynamic noise may be generated by airflow over blunt trailing edges or flow over slits and holes. Efforts to reduce tonal aerodynamic noise may include modifications to the blade design, e.g., the use of specially modified blade trailing edges.

    The background noise measurements collected ranged from below 20 decibels on the A-weighted scale (dBA) at Location A to the mid-60s dBA. This is equivalent to a noise range from rustling leaves to busy traffic.

26. The Class C environmental designation for noise abatement (EDNA) category applies to "lands involving economic activities of such a nature that higher noise levels than experienced in other areas is normally to be anticipated." Typically, Class C EDNA will include " (i) Storage, warehouse, and distribution facilities; (ii) Industrial property used for the production and fabrication of durable and nondurable man-made goods; and (iii) Agricultural and silvicultural property used for the production of crops, wood products, or livestock." The latter definition (for agricultural property) applies to the project site (not the industrial facility definition), which is dominated by rangeland uses; therefore, the Class C EDNA classification is appropriate at the project site.

    Although the project area is predominately rangeland with scattered rural residential uses, the results of ambient noise measurements indicate that the noise levels in the project area

range from below 20 dBA to the mid-60s dBA. Noise modeling indicates that predicted noise levels at property lines would range from a minimum of less than 30 dBA to a maximum of 49 dBA, well below the allowable Class C EDNA noise standard of 70 dBA. Representative sounds for 55 dBA would be somewhere between a quiet office and normal conversation, which is not much different than existing ambient noise levels.

The regulatory noise limits applied to a wind power project do not mean that the turbines will necessarily be inaudible to all of their neighbors, at all times, under all conditions. They do, however, protect the amenity of neighbors and ensure that the development can reasonably be expected to not disturb them.

No significant noise impacts that could not be mitigated below regulatory thresholds were identified in the Draft EIS; therefore; mitigation such as soundproofing or buy-out of affected properties is not warranted. Also, please refer to Individual Letter 10, Response 1 regarding financial compensation as mitigation for local property owners.

27. Animal species differ greatly in their response to noise of various characteristics and duration. Individual animal response to a given noise event or series of events also can vary widely from a variety of factors, including time of day and year, physical condition of the animal, physical environment (such as whether the animal is restrained or unrestrained), the experience of the individual animal, and whether or not other physical stressors are present.

    Please refer to Individual Letter 13, Response 6 regarding why low-frequency noise impacts are not anticipated for the proposed project and to Individual Letter 23, Responses 37 and 38 regarding the ability of domestic animals and big game, respectively, to coexist with wind power plants.

28. The purpose of the referenced paragraph describing combustion turbines is to provide an example of a type of energy facility that could generate vibration. As described in the following paragraph of the Draft EIS, there is no evidence to demonstrate that wind power projects would result in significant impacts from ground-borne vibration.

29. Please refer to State Agency Letter 3, Response 5 regarding the appropriateness of the No Action Alternative.

30. Please refer to Individual Letter 10, Response 1 regarding financial compensation as mitigation for local property owners.

31. Thank you for your comment. Please refer to Local Agency Letter 2, Response 57 regarding the ability of EFSEC to enforce the project's mitigation measures.

Responses to Comments in Individual Letter 43 from John and Barbara Foster

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment. Your opposition to the project is noted. Please refer to Individual Letter 15, Response 4 regarding the efficiency of wind power and project viability.

2. Given the size and land acreage requirements of wind power projects, they will affect some property owners wherever they are located. As described in Section 3.14 of the Final EIS, the Wild Horse Wind Power Project has been constructed approximately 10 miles east of the town of Kittitas. Please refer to Local Agency Letter 2, Response 10 regarding additional analysis of offsite alternatives.

3. Thank you for your comment.

4. Thank you for your comment. Your opposition to the project is noted.

Responses to Comments in Individual Letter 44 from Geoff Saunders

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. The No Action Alternative is typically defined as what would be most likely to happen if the proposal did not occur. If a rezone is proposed, then the No Action Alternative would be defined as the most likely development on the site under existing zoning. Residential development and other permitted uses such as agricultural practices, quarrying, and mining could occur at the project site under existing local land use and zoning designations if the KVWPP is not developed.

   Information on existing rural residential subdivisions in the project area has been included in revisions to Section 3.6.1 of the Final EIS. The EIS presents an objective and impartial discussion of the potential effects at the project site under both the proposed action and No Action Alternative.

2. Please refer to Individual Letter 9, Response 3 for a discussion of the proposed project's benefits. Please refer to Organization Letter 6, Response 1 and revisions to Section 3.7.2 of the Final EIS regarding the effects of Washington State Initiative 747 (I-747) on property tax revenue and for clarification of projected project tax revenues. Please refer to Local Agency Letter 2, Response 17 regarding the project's effects on tourism.

   The areas designated Urban Growth Areas and Urban Growth Nodes in the Kittitas County Comprehensive Plan (Kittitas County 2002a) are intended to urbanize and become annexed to local cities in the next 20 years. These areas appear to be most suitable and likely for future development and city utilities. The project area is designated in the Comprehensive Plan as Rural. The Comprehensive Plan's goals, policies, and objectives for land uses on rural lands are, among other things, "established in an attempt to prevent sprawl" and to "direct growth toward the Urban Growth Areas and Nodes." Therefore, development of the project site with the proposed wind power facility would not necessarily slow county growth or limit areas where Ellensburg can expand in the future, as planned for in the Comprehensive Plan.

3. Initiative 747 does limit the growth rate of locally collected property tax to 1% per year. Please refer to Organization Letter 6, Response 1 and revisions to Section 3.7.2 of the Final EIS for clarification of projected project tax revenues.

4. Please refer to Individual Letter 15, Response 7 regarding the relevancy of landowner status in the project area.

5. Section 2.7 of the Final EIS has been revised to redefine the No Action Alternative. Please refer to State Agency Letter 3, Response 5. Please refer to Individual Letter 15, Response 9 regarding local agency interest to pursue development of renewable energy resources.

Wind energy's stable and increasingly competitive cost is an attractive factor for utilities seeking to diversify their energy portfolio (Swisher 2003). Several local and regional utilities have recently submitted requests for proposals to acquire wind power (see Section 3.5.1 of the Final EIS) to help diversify their energy portfolios and to stabilize electricity costs. Please refer to State Agency Letter 3, Response 4 for more information.

6. While large areas of Washington support a dynamic wind resource, this does not render them necessarily commercially viable areas to develop wind power. While a sufficient wind resource is the most important factor for siting a wind power facility, there are other important criteria typically used by developers to investigate potential site suitability for wind facilities. These include proximity to existing transmission lines with unused capacity within 10 miles of the site; large undivided land parcels totaling a minimum of approximately 6,000 acres; compatible zoning designation(s); and the absence of significant environmental constraints or conflicting land uses. See revisions to Section 2.6.1 of the Final EIS for further discussion of this topic.

   Please refer to Organization Letter 4, Response 5 regarding reasons why EFSEC has limited its analysis of alternative sites to those within Kittitas County. Please refer to Local Agency Letter 2, Response 10 regarding additional analysis of offsite alternatives.

7. Please refer to Individual Letter 23, Response 7 regarding the project's need for access to sufficient available capacity on an existing electric transmission system.

8. Please refer to Individual Letter 13, Response 6 regarding why low-frequency noise impacts are not anticipated for the proposed project.

9. The noise modeling conducted for the proposed project takes into account the cumulative effect of all turbines rotating simultaneously.

10. The EIS acknowledges that vegetative buffering to reduce noise is not considered a reasonable mitigation measure for the project. This discussion is in response to a specific recommendation brought up during the EIS scoping period.

11. Please refer to Individual Letter 15, Response 34 regarding the adequacy of proposed noise setbacks.

12. Please refer to Individual Letter 23, Response 34 regarding icing conditions and documented instances of ice throw. Please refer to Individual Letter 15, Response 27 regarding the adequacy of proposed ice throw setbacks.

13. Thank you for your comment. Please refer to Local Agency Letter 2, Response 49 regarding the adequacy of proposed setbacks for blade throw and to Individual Letter 15, Response 27 regarding setbacks for ice throw.

14. Section 3.4 of the Draft EIS acknowledges that a review of Internet sites on the topic of wind power revealed photographic evidence of wind tower collapse in Europe. However,

at the time the Draft EIS was prepared, the specific conditions and circumstances supporting this photographic evidence was uncertain. Please refer to Individual Letter 15, Response 22 for further information regarding documented cases of wind tower collapse. This information has been included in revisions to Section 3.4 of the Final EIS.

15. As evidence submitted for the adjudicative hearings, Dr. Daniel Kammen, a recognized expert in risk analysis and renewable energy, conducted a detailed risk assessment for the project. Please refer to Individual Letter 15, Response 27 for more information. The risk assessment revealed that the probability of a wind turbine at the proposed project killing or seriously injuring a member of the public as a result of blade throw, tower collapse, or ice throw is less than 1 in 1 billion. The assessment indicated that, within the project area, cars passing along US 97 have the highest probability of being struck by thrown ice or a turbine blade (Kammen, Prefiled Testimony, Exhibit 39).

16. Please refer to Individual Letter 15, Response 25 regarding the maturity of wind turbine technology. Please refer to Individual Letter 15, Response 23 for a discussion of safety setbacks.

17. Thank you for your comment. Individual property owners could be consulted as to whether they would want the mitigation strategies employed or not at their residence.

18. Thank you for your comment. Please refer to Individual Letter 23, Response 12 regarding shadow-flicker effects on motorists traveling on local roads.

19. Please refer to Local Agency Letter 2, Response 54 regarding "zero effect" shadow-flicker setbacks.

20. Please refer to Individual Letter 11, Response 10. Several measures to reduce the risk of fire are proposed by the Applicant in Section 3.4.4 of the Draft EIS. Fires are extremely rare on modern turbines (please refer to State Agency Letter 3, Response 24 and Individual Letter 26, Response 1 for more information). Also, please refer to Organization Letter 5, Response 14 clarifying that welding is not required during turbine erection.

21. As stated in Section 3.4.4 of the Draft EIS, the Applicant proposes many measures to reduce fire risk during construction and operation. This includes clearing vegetation from the immediate vicinity of project facilities and locating fire-fighting equipment onsite. Also please refer to Individual Letter 11, Response 10 regarding emergency response planning.

22. Most of the viewpoints used in the visual impact analysis are at publicly accessible locations where most people would view the project. However, the quality of the view from highly populated viewing locations, such as along I-90 and in the more populated portions of Ellensburg, would vary, depending on several factors such as the distance between object and viewer and the presence of intervening objects (e.g., landscaping, buildings).

23. Section 3.9 of the Draft EIS acknowledges that from certain portions along the US 97 corridor (e.g., from Viewpoint 2), turbines would be new and visually dominant features that would substantially alter the existing character of this scenic landscape and the potential visual impact would be moderate to high. With the revision to the project layout brought forward in late 2005/early 2006, turbines are no longer proposed on the ridge to the east of Bettas Road, north of the intersection of Bettas Road and US 97.

    The review of current literature on wind farm installations produced no published evidence to support that higher vehicle accident rates resulting from driver inattention occur where wind turbines are visible.

24. Section 3.9 of the Draft EIS acknowledges the scenic quality of the area. The installation of wind turbines would result in a marked change in that scenery. However, changes to scenic quality would not result in the loss of land buyers, recreational users, potential residents, or tourists. In a review of the current published literature on wind project visual impacts, that type of wide-scale, economically detrimental impact due to visual impacts has not been shown to occur after the installation of similar projects.

    Please refer to Individual Letter 40, Response 8 regarding quality of life issues.

25. Measures proposed to minimize construction-related dust and soil erosion are identified in Sections 3.11.5 and 3.1.4 of the Draft EIS, respectively. Section 3.2 of the Draft EIS acknowledges that construction of the proposed project would increase the potential for the spread of weeds but that implementation of a proposed invasive weed control program would minimize potential adverse effects associated with noxious weeds.

    Please refer to State Agency Letter 3, Response 26 regarding updated project road length calculations.

26. Please refer to Individual Letter 23, Response 19 for a discussion of impacts to wells from blasting.

27. Please refer to Key Issue B in Section 2 of this volume regarding property values.

Responses to Comments in Individual Letter 45 from Randy and Joanna Fischer

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment. Your opposition to the project is noted.

   Please refer to State Agency Letter 3, Response 4 regarding the demonstrable need for the proposed wind power project. Please refer to Individual Letter 1, Response 8 regarding the project permitting process. Please refer to Individual Letter 9, Response 3 regarding the project's benefits.

Responses to Comments in Individual Letter 46 from Janet Morris

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Please refer to Organization Letter 6, Response 1 regarding clarification of the project's effect on local property tax revenues. Please refer to Sections 3.9, 3.12, 3.4, and 3.2 of the Final EIS for an updated discussion of the project's impacts on visual resources and lighting; noise; health and safety (including shadow-flicker); and vegetation, wetlands and wildlife, respectively. Please refer to Individual Letter 23, Response 39 regarding the project's effect on rodent populations. Please refer to Key Issue B in Section 2 of this volume regarding property values.

   We are not aware of any "grant monies" that may be available to the project. The Washington State Environmental Policy Act rules (Washington Administrative Code 197-11-448) do not require agencies to address concerns such as tax treatment of the wind energy industry in an EIS. The statute and rules envision general economic considerations as factors decision-makers would evaluate apart from the environmental impacts addressed in an EIS.

   Please refer to Local Agency Letter 2, Response 6 and Individual Letter 1, Response 9 regarding distribution and price of the project's wind-generated electricity, respectively.

Responses to Comments in Comment Individual 47 from Forrest Wilbanks

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Please refer to State Agency Letter 3, Response 4 regarding demonstrated need for the proposed project and to Individual Letter 15, Response 4 regarding wind power efficiency.

2. Thank you for your comment. Please refer to State Agency Letter 3, Response 11 regarding the production tax credit for renewable energy production facilities.

   Please refer to Key Issue B in Section 2 of this volume regarding property values.

Responses to Comments in Individual Letter 48 from Charles and Linda Schantz

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Please refer to Key Issue A in Section 2 of this volume regarding project definition.

2. Please refer to Local Agency Letter 2, Response 5 regarding independent study and analysis of the project.

3. Please refer to Local Agency Letter 2, Response 10 regarding additional analysis of offsite alternatives.

4. Section 2.7 of the Final EIS has been revised to redefine the No Action Alternative. Please refer to State Agency Letter 3, Response 5.

5. Please refer to Local Agency Letter 2, Response 10 regarding additional analysis of offsite alternatives. Sections 1.4.2 and 1.4.3 of the Final EIS have been revised to reflect the new offsite alternatives evaluated in the Draft Supplemental EIS.

6. Please refer to Local Agency Letter 2, Response 18 regarding the Applicant's attempts to involve the Yakama Nation in the development and review of the proposed project. Also, please refer to Tribal Letter 1 for the Yakama Nation's comments on the Draft EIS.

7. Please refer to State Agency 3, Response 29 regarding unresolved wetlands issues. Please refer to Organization Letter 5, Responses 5 and 6 regarding unresolved economic issues.

8. Please refer to Local Agency Letter 2, Response 17 for a more detailed discussion of why it is anticipated that tourism would increase as a result of the proposed project and Local Agency Letter 3, Response 1 regarding the effect of tourism on local roads.

   The proposed project would not directly change or replace existing uses of the project site (rangeland and rural residential) or adjacent rural areas.

   Please refer to Individual Letter 3, Response 5 regarding the reliability of the referenced Lincoln Township Wind Turbine Survey.

9. Information pertaining to traditional cultural properties and native land use is considered confidential and is not subject to public disclosure. The Applicant has agreed to avoid ground-disturbing activity within 100 feet of all documented cultural resource sites; therefore, the proposed turbine locations would not impact these resources. Furthermore, there is adequate mitigation to ensure that if unknown resources were encountered during construction, they would be protected to minimize adverse effects. In addition, approximately 550 acres has been set aside for permanent protection. Sagebrush Power Partners LLC intends to offer members of the Yakama Nation the ability to use this

parcel for cultural and spiritual practices, including the gathering of traditional foods and medicines, throughout the lifetime of the project.

10. Please refer to Local Agency Letter 2, Response 88 regarding the need to conduct a television reception survey prior to project approval and Response 57 regarding the ability of EFSEC to enforce Washington State Environmental Policy Act (SEPA) mitigation measures. Proposed and recommended mitigation measures to ensure that any identified reception problems are adequately mitigated are presented in Section 3.13.4 of the Draft EIS.

    Please refer to Individual Letter 3, Response 5 regarding the validity of Lincoln Township Wind Turbine Survey results in Wisconsin.

11. Please refer to Local Agency Letter 2, Response 19 regarding updated information and analysis of the project's effects on radio interference. Please refer to Individual Letter 3, Response 5 regarding the validity of Lincoln Township Wind Turbine Survey results in Wisconsin.

12. Since publication of the Draft EIS, the Applicant and EFSEC have conducted additional studies to resolve several of the issues identified in Section 1.7. For example, see State Agency Letter 3, Response 29 regarding updated wetlands information; Organization Letter 5, Responses 5 and 6 regarding updated information on economic effects; and Local Agency Letter 2, Responses 17, 18, and 19 regarding tourism, historical and tribal resources, and radio interference, respectively.

    Please refer to Local Agency Letter 2, Response 57 regarding the ability of EFSEC to enforce SEPA mitigation measures.

13. The Introduction to Section 2 of the Final EIS (Section 2.1) has been revised to reflect that two offsite alternatives have been considered and carried forward as part of the impact analysis. Also, please refer to Local Agency Letter 2, Response 10.

14. Please refer to Individual Letter 15, Response 4 regarding the project's capacity factor.

15. Please refer to Local Agency Letter 2, Responses 48 and 49 regarding the adequacy of proposed setbacks to minimize safety risks associated with tower collapse and blade throw, respectively.

    If all or any part of a blade detaches from the rotor, its trajectory would depend on the loading and stress state at the time of failure and on the type and progression of failure before separation. It has been reported that no advanced analytical modeling of blade throw from wind turbines has been undertaken. This is likely due to the complexity of the analysis along with the extremely low incidence of reported blade throw incidents (Kittitas County 2004) as well as of tower collapse (Jorgensen, Prefiled Testimony, Exhibit 37).

As described in Individual Letter 15, Response 27, the probability of a wind turbine at the proposed project killing or seriously injuring a member of the public as a result of blade throw or tower collapse is less than 1 in 1 billion.

16. Please refer to Individual Letter 15, Response 34 regarding the adequacy of proposed setbacks for noise impacts. Please refer to Individual Letter 3, Response 5 regarding the validity of Lincoln Township Wind Turbine Survey results in Wisconsin.

17. The Draft EIS acknowledges that there is little that can be done to mitigate the visual impact of a wind turbine. As demonstrated in the visual impact analysis (Section 3.9 of the Draft EIS), the proposed turbines would be visible to varying degrees from throughout the Kittitas Valley, including at distances greater than 5 miles. However, because the turbines would most frequently be seen against the sky, particularly in close-range views where visual concerns are the greatest, the gray finish is recommended as the best choice for minimizing aesthetic impacts because it blends better when weather conditions are cloudy or overcast.

18. The tower's lightning protection system diverts harmful stray surge voltages away from the turbine and into the surrounding grounding system. The turbines protection system includes lightning receptors in the blades that divert lightning strikes through the tower to the base flange, and grounding system consisting of copper rods and conductors buried around the foundation of the towers. The electrical and control systems of the turbines are also protected to prevent to these components.
Electrical current entering the earth from a power system is the source of stray voltages. These currents can be intentional, for example when an electrical distribution system uses the earth as an electrical conductor. The currents an also be unintentional, for example when an electrical problem causes a discharge to the ground at a wind farm (Dahlberg and Falk 1995). Stray voltages at wind farms are typically associated with onsite wiring practices and conditions or with the local electric distribution system. Transmission-level voltages do not typically cause stray voltage issues at wind farms (Shawano County 2003). There is nothing different or unusual about managing the electricity flow from an operating wind plant compared with any other electrical generating facility. Standard electric wiring practices are implemented to prevent stray voltage from occurring (AWEA 2004b).

The conductivity of specific earth materials determines the locations and magnitudes of current in the earth. Conducting materials buried in or on the earth have the potential to carry electrical current (Dahlberg 2000). The Applicant plans to conduct tests of the conductivity of the site soils prior to construction to ensure that the engineered lightning protection systems would function as designed. If changes were to be required to ensure proper grounding, they would be made prior to construction. Such changes are not anticipated based on initial review of onsite soil information (Taylor, pers. comm., 2004).

19. Measures proposed to minimize construction-related air emissions and dust are identified in Section 3.11.5 of the Draft EIS. Dust suppression would be accomplished through application of either water or a water-based environmentally safe dust palliative on

unpaved construction access roads, parking areas, and staging areas. The closest existing structure is approximately 788 feet from the nearest turbine site. The majority of existing structures are more than 2,000 feet from the proposed turbine sites (see Table 3.12-5 of the Final EIS). With implementation of proposed dust suppression mitigation measures, homes in the project area would not be adversely affected.

20. Please refer to State Agency Letter 3, Response 5 regarding the appropriateness of the No Action Alternative.

21. Please refer to State Agency Letter 3, Response 5 regarding the appropriateness of the No Action Alternative.

22. Thank you for your comment. The referenced text has been revised in Section 2.7.1 of the Final EIS (renumbered Section 2.6.1 in the Final EIS).

23. Please refer to Local Agency Letter 2, Response 10. Also, the Wild Horse project cannot be increased in size, on its own, to generate the same amount of energy output as can be cost-effectively generated by constructing both the Wild Horse and Kittitas Valley projects. Therefore, doubling the size of one project is not a reasonable alternative to constructing both projects.

    According to the Wild Horse Wind Power Draft and Final EIS (EFSEC 2004a, 2005a), there are no current plans to expand the Wild Horse project into the surrounding Whiskey Dick Mountain area. However, if market, technology, or other conditions evolve in a manner that encourages expansion, there is potential for adding additional wind turbines within or adjacent to the existing Wild Horse project boundary in the future, subject to landowner consent and regulatory approval.

24. The SEPA rules (WAC 197-11-440(c)(vii) requires that an EIS discus the benefits and disadvantages of reserving for some future time the implementation of the proposal, as compared with possible approval at this time. Section 2.8 of the Final EIS has been revised to more clearly link the disadvantages of delaying project approval to the need of regional utilities to purchase renewable wind-generated energy within defined periods of time.

25. The project area will be permanently altered by the construction of roads to service the wind farm facilities. These roadways would not be located on nonparticipating landowners' properties. The estimated amount of crushed rock required is presented in Table 3.1-3 of the Final EIS; the amount needed for project roadways exceeds 80,000 cubic feet for both proposed action scenarios. Best management practices to reduce or prevent impacts to earth resources would be employed. Therefore, while the impact created by earth moving may be unavoidable, it is not considered a significant adverse impact with implementation of proposed mitigation measures.

Please refer to State Agency Letter 3, Response 26 regarding updated calculations of project roadway lengths.

26. Please refer to Response 19 of this letter regarding dust mitigation.

27. Please refer to State Agency Letter 3, Response 5 regarding the appropriateness of the No Action Alternative.

28. Please refer to Tribal Letter 1, Response 4 regarding the adequacy of the baseline wildlife study. Please refer to Organization Letter 8, Response 11 regarding nighttime wildlife surveys and Response 19 regarding use of radar technology for studying bats. Please refer to State Agency Letter 3, Response 14 regarding the adequacy of the bat surveys.

29. Please refer to Individual Letter 23, Response 39 regarding rodent populations and potential exposure to humans of the hantavirus. Please refer to Individual Letter 38, Response 3 regarding mosquito populations and potential exposure to humans of the West Nile Virus.

30. Interviewing local residents about avian resources in the area was not part of the overall scope or protocol for the avian baseline studies. While local residents are often a good source of information about local resources, the information is usually not quantitative and is often historical in nature. Based on the input from WDFW and USFWS regarding the baseline studies, it was decided that contemporary information would be best for the impact assessment, and field surveys by trained ornithologists over a 1-year period was an appropriate study design. Field personnel conducting the study were extremely qualified and experienced in bird identification, bird surveys, and in the types of surveys conducted (Erickson, Prefiled Testimony, Exhibit 29 and Exhibit 29R).

    Despite nearly weekly surveys of the project area, no bald eagles were observed in the project area after mid-April. The same results were also found at the studies of the other proposed wind plants in Kittitas County (WEST, Inc. 2003). No bald eagle nests were found during the nest survey, and the Washington Department of Fish and Wildlife (WDFW), U. S. Fish and Wildlife Service (USFWS), and Washington Breeding Bird Atlas have no records of bald eagles nesting in the Ellensburg area (Kittitas County 2004). Habitat along the Yakima River appears suitable for bald eagle nesting, but to date there are no known nests near the project. The project would not affect nesting bald eagles.

31. Please refer to Individual Letter 23, Response 28 regarding USFWS guidelines.

32. Section 3.2 of the Draft EIS acknowledges that exposed, unvegetated, and/or compacted soils that result from land conversion may also be susceptible to colonization by invasive species if measures are not taken to reduce the establishment of these species. However, the Applicant has recommended measures to control the introduction and spread of noxious weeds in the project area during and after construction. Implementation of proposed measures to control the introduction and spread of undesirable plants during

construction would adequately minimize potential adverse effects associated with invasive species. Also note that depending on the selected proposed action scenario, between one-quarter to as much as one-half of the temporarily disturbed area would be developed with project facilities (e.g., roads, turbines, and meteorological towers) that would permanently exclude vegetation growth, including invasive species.

The cumulative effect of the three proposed wind power projects on soils and vegetation in Kittitas County is addressed in Section 3.14 of the Draft EIS. Also, please refer to Individual Letter 23, Response 8.

33. Please refer to Individual Letter 23, Response 19 regarding blasting effects on local groundwater wells.

34. Please refer to State Agency Letter 3, Response 5 regarding the appropriateness of the No Action Alternative.

35. The Draft EIS acknowledges that the project would add risks to health and safety, including risk of fire. Mitigation is proposed in Section 3.4.4 of the Draft EIS that would, if implemented, reduce or eliminate those risks.

36. Please refer to Local Agency Letter 2, Response 17 for a more detailed discussion of why it is anticipated that tourism would increase as a result of the proposed project.

Indirect growth is not anticipated at a regional level as a result of this project. The Draft EIS acknowledges that it anticipates tourists would be attracted to the project area. However project-induced economic activity due to increased tourist activity is not expected to result in indirect population growth and a related demand for housing capacity (see Section 3.7.2 of the Draft EIS). This is because the local economy and infrastructure is expected to absorb and respond to temporary economic events such as tourist spending.

37. There is no record of damage caused by an accidental spill from a wind turbine (Jorgensen, Prefiled Testimony, Exhibit 37). Each turbine would be subject to a third-party certification, which would provide assurances that the turbine is made according to specification, complies with codes and standards, and will operate safely and efficiently. Detailed measures, including project design features, proposed to reduce potential releases of hazardous materials to the environment during both project construction and operations are presented in Section 3.4.4 of the Draft EIS.

Modern turbines have been designed to contain all accidental spills of lubrication oil, grease, and cooling fluids inside the nacelle, hub, and tower. These design features and construction and operating procedures would effectively mitigate the potential but highly unlikely risk that an accidental release of hazardous materials could infiltrate and contaminate the local groundwater or Yakima River.

38. Please refer to Response 18 of this letter regarding stray voltage. Please refer to Individual Letter 3, Response 5 regarding the reliability of the Lincoln Township Wind Turbine Survey.

39. Please refer to Response 18 of this letter regarding stray voltage.

40. Please refer to Individual Letter 3, Response 5 regarding the reliability of the Lincoln Township Wind Turbine Survey.

    Please refer to Response 18 of this letter regarding wind turbine lightning protection systems. The incidence of third party claims again wind power projects was discussed with a representative of WorldLink Specialty Insurance Services, the largest single insurance facility in the world offering coverage to wind power projects. WorldLink insures approximately 60% of the third party insured wind power projects in the U.S. and has processed and paid only two of these types of claims since they have been in business. Claims were made by landowners and were related to brush fires—a discarded cigarette caused one incident, the other was caused by a welding incident. A powerful lightning strike, however, can damage the turbine blade and temporarily take the turbine out of commission (Bernay, Prefiled Testimony, Exhibit 38).

    Please refer to Individual Letter 23, Response 55 regarding use of aerial fire fighting techniques at the project site.

41. Please refer to Response 18 of this letter regarding lightning damage, and Individual Letter 11, Response 10; Individual Letter 41, Response 5; and Response 40 of this letter regarding fire protection plans.

42. Please refer to State Agency Letter 3, Response 5 regarding the appropriateness of the No Action Alternative.

43. Please refer to State Agency Letter 3, Response 5 regarding the appropriateness of the No Action Alternative.

44. The project would conserve a substantial portion (> 97%) of the larger project area, and this area could continue to be used for rangeland and cattle grazing operations.

45. In Kittitas County, wind farms may only be located in areas designated as a Wind Farm Resource Overlay Zone. The overlay zone permits wind energy use in addition to uses permitted in the underlying zoning classification (Agriculture-20 and Forest and Range); it does not change the underlying land use nor does it permit other types of development such as warehouses. The proposed project would not directly change or replace existing uses of the project site (rangeland) or adjacent rural areas. The intent of the zoning code's provision is to provide for the recognition and designation of properties located in areas suitable for wind energy production, while protecting the welfare of the public and ensuring compatibility between nearby land uses.

Please refer to Individual Letter 1, Response 8 regarding updated information on the project permitting process.

46. Please refer to Key Issue B in Section 2 of this volume regarding property values. Please refer to Individual Letter 3, Response 5 regarding the reliability of the Lincoln Township Wind Turbine Survey.

47. Please refer to Key Issue B in Section 2 of this volume regarding property values and to Individual Letter 10, Response 1 regarding financial compensation as mitigation for local property owners.

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48. EFSEC and the Applicant have undertaken several measures to initiate interaction and consultation with the Yakama Nation (see Section 3.8.2 of the Final EIS). In January 2004, the Yakama Nation requested a meeting with EFSEC and the Applicant to discuss and plan for the cumulative effect of wind power on a regional basis. As of April 2004, the Yakima Nation had postponed the meeting with the Applicant based on the Nation's position "to oppose all wind power projects until a regional approach to planning, impact assessment, and mitigation is completed." Consultation to resolve these concerns is currently ongoing.

49. The digital images and simulations provided in the Draft and Final EIS show existing conditions and simulated post-construction conditions using standard methods and best available technology.

    Please refer to Individual Letter 42, Response 19 regarding photograph conditions with cloudy skies. Simulating moving components is not possible in a printed document format as required for an EIS.

50. Please refer to Individual Letter 23, Response 50 regarding proposed mitigation to address issues related to the effects of oversize and overweight vehicles traveling on county roads, including Bettas Road.

51. Although tourist traffic-related impacts on county roads are not anticipated from the project, the Applicant has proposed mitigation for possible impacts. As described in Section 3.10.4 of the Draft EIS, mitigation includes constructing a visitor kiosk at the plant's operations and maintenance facility, which would provide tourists a safe place to view and learn about the wind turbines. Mitigation also includes placing signs in key locations to direct tourists to the viewing area, away from Hayward Road. These measures would minimize potential tourist-generated traffic impacts. Also, please refer to Local Agency Letter 2, Response 17 and Local Agency Letter 3, Response 1 regarding tourism, its effects on local roadways, and project mitigation measures.

52. Please refer to Organization Letter 4, Response 16 regarding the relationship between project-generated noise and health effects. Please refer to Individual Letter 1, Response 9 regarding project effects on quality of life.

Please refer to Key Issue B in Section 2 of this volume regarding project impacts to property values.

53. Please refer to Local Agency Letter 2, Response 10 regarding additional analysis of offsite alternatives.

The Draft EIS relies on factual, unbiased reports and testimony by expert witnesses in their field. Please refer to Individual Letter 3, Response 5 regarding the reliability of the Lincoln Township Wind Turbine Survey.

54. Thank you for your comment.

Responses to Comments in Individual Letter 49 from Michael and Patsy A. Ptaszynski

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Your opposition to the project is noted. In response to public comments requesting that offsite alternatives be analyzed in greater detail, EFSEC issued a Draft Supplemental EIS in August 2004 (EFSEC 2004b) that considers and evaluates several offsite alternatives in greater detail than was originally presented in the December 2003 Draft Project EIS. These offsite alternatives include several areas east of Ellensburg, such as at Skookumchuck Creek, Quilomene (4 miles northwest of the town of Vantage), and Boylston Mountains. Also, please refer to Local Agency Letter 2, Response 10.

2. Thank you for your comment. Your opposition to the project is noted. Please refer to Individual Letter 1, Response 8 regarding the project permitting process.

3. Please refer to Individual Letter 15, Response 4 regarding the viability of the project site to support wind power operations.

4. EFSEC has not approved the KVWPP proposed by Sagebrush Power Partners LLC. EFSEC will recommend approval or denial of the proposed wind facility to the governor of Washington when the environmental review process is complete. The tower observed being erected is not part of the proposed project.

5. The Draft EIS acknowledges that the proposed towers would greatly alter the appearance of the rural landscape over a large area of the Kittitas Valley. The proposed towers would not be present in the foreground of every key view available in the project area. The relative position of an object within a given view is a function of the distance between viewer and object. As shown in several of the photo simulations presented in Section 3.9 of the Draft and Final EIS, the proposed turbine towers would be located in the background view from Viewpoints 9 (I-90) and 10 (Lower Green Canyon Road).

6. Please refer to Response 1 of this letter. Also, please refer to Individual Letter 10, Response 1 regarding financial compensation as mitigation for local property owners.

Responses to Comments in Individual Letter 50 from Chris Hall

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Please refer to Organization Letter 3, Response 9 regarding an updated evaluation of cell phone interference issues. As stated in Section 3.13 of the Draft EIS, cell phone reception is not affected by line-of-sight disruptions.

   If EFSEC recommends and the governor approves the project, required implementation of proposed and recommended measures to mitigate for potential interference with communication microwave paths will be made part of the project's Site Certification Agreement (SCA) between the Applicant and EFSEC. Also, please refer to Local Agency Letter 2, Response 57 regarding the ability of EFSEC to enforce Washington State Environmental Policy Act (SEPA) mitigation measures.

2. The projected peak work force of 160 people refers to temporary construction workers, not permanent operational employees. Table 3.10-5 of the Final EIS shows that project construction would generate 320 daily trip by employees (one trip arriving at the site and one trip departing).

   Table 3.10-1 shows existing average daily traffic volumes. Table 3.10-7 shows existing and future daily peak-hour (not daily) traffic volumes during project operations (not construction). Peak-hour traffic volumes typically represent about 10% of daily volumes on a given roadway. Therefore, traffic volumes are not underestimated.

3. Please refer to Local Agency Letter 3, Response 1 for a discussion of the project's impacts of tourism on Bettas and Hayward roads. It is possible that placement of a kiosk and viewing area would increase the volume of traffic along US 97 and Bettas Road. However, the availability of a kiosk/public viewing area would provide interested tourists a safe location to park their vehicles (as opposed to pulling off the side of a road). In addition, Section 3.10.3 of the Final EIS recommends a mitigation measure to improve traffic safety that would require the Washington State Department of Transportation to monitor the incidence of traffic accidents at the intersection of US 97 and Bettas Road. Also, please refer to Organization Letter 5, Response 26 regarding updates to this proposed mitigation measure.

4. Your suggested highway safety mitigation is a recommended mitigation measure in the Draft EIS. Please refer to Response 3 of this letter and Section 3.10.3 of the Final EIS.

5. Please note that the shadow-flicker receptor model was rerun for the revised 65-turbine layout with the most conservative 410-foot high turbines. Table 3.4-2 of the Final EIS has been revised to include the results of the updated model run. Receptors included in the modeling were selected based on their proximity to the proposed turbines and their likelihood of exposure to shadow-flicker. There are several residences located within a 1-mile radius of the project site (shown on Figure 3.6-1) that would experience absolutely

no shadow-flicker due to their distance (typically greater than 2,000 feet) from the turbines and/or their orientation.

Please refer to Local Agency Letter 2, Response 57 regarding EFSEC's regulatory authority to enforce compliance with SEPA mitigation measures.

6. What is meant by the "failure" of an attempt to screen the view refers to an effect whereby an incomplete screening results in additional attention being focused on the object being screened.

7. As stated in Section 3.9 of the Draft EIS, Kittitas County would be the agency responsible for imposing setbacks along that portion of US 97 that traverses their jurisdiction.

8. Table 1-3 is a summary of information presented in Chapter 3 of the Draft EIS. See Section 3.9 of the Final EIS for a detailed analysis of visual impacts from locations throughout the project area.

9. Thank you for your comment.

10. Thank you for your comment. Your opposition to the project is noted.

11. Table 3.6-2 of the Draft EIS presents a summary of the project's potential land use and recreation impacts. Section 3.6.1 of the Draft EIS acknowledges that a variety of different recreational activities are available near the project area, including hiking, cycling, and bird watching. Potential impacts to these activities, including to recreation users on publicly accessible land in the project area as well as users in the Wenatchee National Forest and along the John Wayne Trail, are addressed in Section 3.6.2 of the Draft EIS. No significant adverse conflicts or impacts to these other activities are anticipated.

12. Thank you for your comment. Please refer to Individual Letter 1, Response 8 regarding the project's permitting process.

13. Order and purity refers to the visual quality gained from the logical placement of elements in an uncluttered landscape. For this project, the turbine placement would generally follow the land form (ridges), which would produce a pattern in harmony with the overall scene. The simplicity or purity of the views refers to a lack of other built elements in the scene that could detract from the overall quality.

    Please refer to Individual Letter 15, Response 45 regarding removal of the recommended mitigation measure for conservation easements.

14. The economic effects of landowners are discussed in Section 3.7.2 of the Final EIS under Indirect Operations and Maintenance Impacts, Employment and Income. It is anticipated that property owners who lease land for wind turbines would receive a combined $585,500 per year in income (approximately $10,371 per turbine).

Please refer to Key Issue B in Section 2 of this volume regarding effects on landowner property values.

15. Section 1.9 is a summary of the cumulative impacts addressed in Section 3.14 of the Draft EIS. Section 3.14 thoroughly evaluates both geographical and temporal impacts. Section 1.9.2 of the Final EIS acknowledges that the three wind power projects would result in the loss of approximately 97 acres of lithosol habitat. A more detailed and updated discussion of cumulative impacts to lithosol habitat is presented in Section 3.14 of the Final EIS.

    We apologize for the document printing error.

16. Section 3.14.6 of the Draft EIS acknowledges that construction of the Kittitas Valley, Desert Claim, and Wild Horse projects would increase existing levels of habitat fragmentation and reduce the amount of habitat available for wildlife.

17. Please refer to State Agency Letter 3, Response 6 regarding project impacts on lithosol habitat.

    The temporary and permanent loss of vegetation at the project site is addressed under construction impacts (the loss is created at the time of construction) and summarized in Table 3.2-5 of the Draft EIS. Table 3.2-5 summarizes the total amount of temporary and permanent vegetation removal and habitat loss, of which shrub-steppe and lithosol habitat is a subset (also see Tables 3.2-6 and 3.2-7). Vegetation impacts during decommissioning would be lower than those described for construction, as identified in Table 3.2-5. Routine operations and maintenance activities would not affect shrub steppe or lithosol habitat at the project site. The Final EIS updates the acreage impacts expected based on the revised 65-turbine project.

18. Please refer to State Agency Letter 3, Response 20 regarding mitigation for loss of lithosol habitat.

    A note has been added to Table 3.2-13 of the Final EIS indicating that the lithosol sub-type is a sub-category of the grassland, low sagebrush, and shrub-steppe cover types. The three cover types in the table do not separate the lithosol sub-category. It is estimated that approximately 85.4 acres of lithosols would be temporarily disturbed and that approximately 33.1 acres of lithosols would be permanently disturbed (also, see Tables 3.2-6 and 3.2-7 of the Final EIS).

19. Please refer to State Agency Letter 2, Response 16 regarding the Bald Eagle Protection Act, project Habitat Conservation Plan, Endangered Species Act, and incidental take of bald eagles.

Please refer to Organization Letter 8, Response 14 regarding the Migratory Bird Treaty Act.

20. The Draft EIS acknowledges that for many viewers (not necessarily all viewers) the presence of the wind turbines would represent a significant unavoidable adverse impact.

    Please refer to Organization Letter 5, Response 20 regarding the recommended mitigation measure to plant native conifers to minimize visual impacts.

21. Please refer to Individual Letter 10, Response 1 regarding financial compensation as mitigation for local property owners.

22. If EFSEC recommends and the governor approves the project, the specific requirements for facility decommissioning, including plans for equipment removal, site restoration, and financial assurances, would be governed by the terms and conditions set forth in the SCA.

23. As described in Section 2.2.6 of the Draft EIS, if the project were approved, only three project elements may remain aboveground after the project is terminated: (1) the substation(s) (which may revert to the ownership of the applicable utility), (2) the overhead powerlines (if they could be used by the utility), and (3) the operations and maintenance facility. If EFSEC recommends and the governor approves the project, the specific requirements for facility removal during decommissioning would be governed by the terms and conditions set forth in the SCA.

24. Please refer to Response 22 of this letter.

25. Please refer to Response 22 of this letter.

26. Section 2.7 of the Final EIS has been revised to redefine the No Action Alternative. Please refer to State Agency Letter 3, Response 5.

    Alternative sites in the Kittitas Valley that could potentially support wind power development are discussed in detail in revisions to Section 2.6 of the Final EIS. Please refer to Local Agency Letter 2, Response 10.

27. Please refer to Individual Letter 15, Response 4 regarding viability of the project to support wind power operations. Please refer to Local Agency Letter 2, Response 6 regarding distribution of the project's wind power energy.

28. Please refer to Local Agency Letter 2, Response 10 regarding additional analysis of offsite alternatives.

29. The SCA will contain a condition requiring the Applicant to submit detailed, applicable project plans for EFSEC approval prior to commencement of construction. Please refer to Local Agency Letter 2, Response 57 regarding the ability of EFSEC to enforce SEPA mitigation measures.

30. Although the Applicant has committed to constructing no more than 65 turbines, the proposed action scenarios still consider several variables, including the capacity, and height of the proposed turbines. A comparison of specific wind turbine features for the two proposed action scenarios is presented in Table 2-4 of the Final EIS (and graphically depicted in Figure 2-2).

31. The Fact Sheet and Table 3.6-2 of the Final EIS have been revised to clarify that the project now considers a range of turbines that can be described as two scenarios: the 330-foot high turbine scenario, composed of up to 65 turbines with a generating capacity of 1.5 to 2 MW each; and the 410-foot high turbine scenario, composed of up to 65 turbines with a generating capacity of 3 MW each.

32. Neutral gray turbine towers are proposed. Brown turbines were simulated in 2 of the 11 views illustrated in the Draft EIS (see Viewpoint 2 from US 97 and Viewpoint 9 from I-90) in response to a specific scoping comment submitted by U.S. Department of Agriculture, Forest Service (USFS), and in the Final EIS (see Figure 3.9-16). The USFS recommended that the towers should be painted with darker, light-absorbing earth tones. As demonstrated in the Draft EIS, although the brown color would reduce visual contrast in views where the turbines would be seen against a landscape backdrop, it would accentuate the visibility of the turbines in views where they are seen against the sky. Because the turbines would most frequently be seen against the sky, particularly in close-range views where visual concerns are the greatest, the light gray finish is recommended as the better choice for minimizing aesthetic impacts.

33. Please refer to Individual Letter 23, Response 53 regarding the Applicant's commitment to pay the cost for necessary public services staffing and/or equipment serving the project, including law enforcement, fire protection, and maintenance of county roads.

34. We apologize for the document printing error.

35. Section 3.10.1 of the Final EIS has been revised to clarify that Bettas Road branches off US 97 at two locations approximately 10 and 13 miles north of the I-90 interchange.

Responses to Comments in Individual Letter 51 from Jeff Slothower

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. The responsibility of EFSEC's independent EIS consultant is to review and analyze the Applicant's Application for Site Certification (ASC) and supporting documents for adequacy and compliance with EFSEC regulations and to use this and other relevant and available information to prepare the EIS. The Draft EIS reflects the independent judgment of EFSEC's consultant based on relevant and available data. Information provided by the Applicant and their consultants is only one of several sources reviewed for this effort. Also, please refer to Individual Letter 11, Response 3.

2. Please refer to Local Agency Letter 2, Response 6 regarding distribution of power generated by the proposed project and to State Agency Letter 3, Response 4 regarding regional demand for wind power.

3. The cost incurred by the Applicant is irrelevant to EFSEC's decision to approve or deny the proposed project. Please refer to State Agency Letter 3, Response 11 regarding the production tax credit for the wind energy industry, and to Individual Letter 1, Response 9 regarding the cost of power to consumers.

4. Please refer to Organization Letter 4, Response 9 regarding the anticipated power generation source(s) required for backup to the proposed wind power project.

   The cost of reserve power would depend on the type of power source required. For example, the cost of Bonneville's proposed wind power integration services (refer to Organization Letter 4, Response 9 for more information) is 0.45 cents per kilowatt-hour (KWh) for the network wind integration service and 0.6 cents/KWh for storage and shaping—both separate from energy and transmission charges. Costs for transmission and wind energy run approximately 3.5 cents/KWh, including the federal wind energy production tax credit.

5. The proposed 65 turbines would be sited within defined corridors in the larger project area. The Draft EIS provides extensive documentation of expected impacts associated with siting these turbines under the proposed action scenarios within the defined corridors and thorough, objective analysis of their significance. EFSEC has the authority to remove or redefine the location of specific turbines based on information presented in the Draft and Final EIS.

   Please refer to Key Issue A in Section 2 of this volume for more information on the project definition.

6. The Draft EIS provided information on residences and land uses adjacent to the project and in the surrounding area and extends that coverage to larger portions of the Kittitas Valley as appropriate. For example, the location of residences, roads, and other features

in relation to the proposed turbines within a 1-mile buffer under the middle scenario were identified on Figure 3.6-1. The Washington State Environmental Policy Act (SEPA) regulations do not prescribe a specific distance range for resource inventory and impact analysis. An attempt to do so would not likely result in a universally acceptable figure.

Please refer to Response 5 of this letter regarding the range of turbines evaluated.

7. The visual impacts of the proposed project are fully disclosed and analyzed in Section 3.9 of the Draft EIS. They have been updated in the Final EIS. The Revised Code of Washington (RCW) 80.50.020(4), Washington Administrative Code (WAC) 463-42-125, and the SEPA regulations (Chapter 197-11 WAC) do not include requirements that a visual impact analysis be performed for each individual component or part of an energy facility.

   Please refer to Response 5 of this letter regarding the range of turbines evaluated.

8. Please refer to Response 5 of this letter.

9. Please refer to Individual Letter 23, Response 7 regarding the project's need to access available capacity on an existing electric transmission system.

10. The Applicant has agreed to avoid ground-disturbing activity within 100 feet of all documented cultural resources sites; therefore, the proposed turbine locations would not impact these resources. Furthermore, there is adequate mitigation proposed to ensure that if unknown resources were encountered during construction, they would be protected to minimize adverse effects. In addition, a detailed Stormwater Pollution Prevention Plan would be developed and implemented to minimize the potential for runoff or erosion impacts during construction and operation activities.

11. Impacts to cultural resources have been thoroughly discussed in Section 3.8 of the Draft EIS and summarized in Table 3.8-1. Areas where facilities are proposed were surveyed, and the impacts were adequately assessed.

12. Table 3.9-1 is a landscape scenic quality scale developed by the U.S. Forest Service and the U.S. Department of Transportation. Other visual quality studies that may have been performed in the project vicinity that happen to use the same rating scale are not referenced because they are not necessarily relevant to visual impacts from the KVWPP. Wind farms are a unique and highly noticeable addition of built elements into rural or natural environments and are very different from forest practices and transportation projects.

13. Any rating of visual quality is necessarily subjective. The methods used to determine visual impacts, however, are widely employed and accepted. There is no particular accounting for the subjectivity applied to the rating scale as used for this project because the fundamental methods used are applied uniformly regardless of the location.

14. Please refer to Response 7 of this letter.

15. Please refer to Response 7 of this letter.

16. Distances between photo viewpoint locations and the proposed turbines can be scaled off of Figures 3.9-1 and 3.9-2 of the Draft EIS.

    Figure 2-2 depicts, to scale, a Bonneville transmission tower that currently occupies the project area in relation to the maximum dimensions not to be exceeded of the range of the two proposed action scenarios. This figure assists the reader in getting a sense of the scale of the proposed turbines in relation to a commonly recognizable element in the existing landscape.

17. Please refer to Key Issue B in Section 2 of this volume regarding property values.

18. Cost and economic impacts, including effects on property values, are not topics analyzed under SEPA. An EIS is not required to evaluate and document all of the possible effects and considerations of a decision or to contain the balancing judgments that must ultimately be made by the decision-makers (WAC 197- 11- 448[1]). Please refer to Key Issue B in Section 2 of this volume regarding property values.

19. Please refer to Key Issue B in Section 2 of this volume regarding property values. There is a limited amount of literature available that presents studies of the relationship between wind power projects and property values. Studies from countries outside the U.S. are valuable to the extent they disclose findings on this relatively obscure topic. EFSEC will consider the effect the project would have on local property values based on the whole of the evidence presented before them, including the summary of previous property value studies.

20. Visual impacts for projects of this nature are not so measurable as to fall on either side of a definitive threshold. The degrees of impact lie along a continuum rather than crossing a bright line whereby mitigation measures could simply be a matter of subtracting individual turbines to achieve a level of acceptability. The turbine strings, rather than individual turbines, should be viewed as a single component because the spacing and placement of the turbines within a string has both a meteorological and project design basis.

    For the KVWPP, it is more appropriate to examine the impacts from the combined effect of the turbine strings from specific viewpoints. Examining the combined effects from given viewpoints allows a more meaningful comparison of the impacts from different turbine densities and heights in the two scenarios (Figure 2-2).

21. A cost-benefit analysis (as defined in WAC 197-11-726) is not required by SEPA. For purposes of complying with SEPA, the weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis (WAC 197-11-450).

Also, please refer to Individual Letter 23, Response 7 regarding the relevancy of the business needs of the Applicant (namely, the need to feasibly attain or approximate the proposal's objective to develop a commercially viable wind energy facility).

22. Please refer to Response 18 of this letter regarding consideration of cost impacts in a SEPA EIS. Cumulative environmental effects are discussed in Section 3.14 of the Draft EIS.

23. Please refer to Local Agency Letter 2, Response 10 regarding additional analysis of offsite alternatives.

24. Revised criteria used to evaluate project alternatives are presented in Section 2.6.1 of the Final EIS. Please refer to Organization Letter 4, Response 5 regarding reasons why EFSEC has limited its analysis of alternative sites to those within Kittitas County.

25. SEPA WAC 197-11-440 (6) (d) (i) requires the EIS to include a summary of existing plans and zoning regulations applicable to the proposal, and how the proposal is consistent or inconsistent with these plans. The Draft EIS clearly indicated that the KVWPP proposal was inconsistent with those requirements specifically addressing the siting of wind farms, namely GPO 6.34, and Kittitas County Zoning Code KCC 17.61.A.040(B). The Final EIS has been revised to indicate that the KVWPP may or may not be consistent with a number of other applicable County GPO's. Regarding the issue that the Draft EIS did not address GPOs 2.109 and 2.109A, the section of the Comprehensive Plan that cites to these GPOs is entitled "industrial uses". As described in Response 18 to Organization Letter No. 4, the County's Comprehensive Plan does not consider wind farms as an industrial use, but rather a utility. Nevertheless, the issue of compatibility with surrounding land use is part of EFSEC's consideration of the Applicant's request for preemption.

26. The land development pattern in the immediate area surrounding the project is one of rural residential development. For example, there are two rural residential subdivisions in the project area located off of Bettas Road that are selling lots for future development. This includes the Horse Canyon Estates development located near turbine string F, composed of 24 parcels ranging in size from 4 to just under 20 acres, and a four-lot subdivision immediately south of Bettas Road near the proposed operation and maintenance facility. These properties were purchased after the proposed wind power project was disclosed in the community with the intent to subdivide and sell as future residential development. As of February 2004, 6 of the 24 parcels at Horse Canyon Estates had sold.

    It is speculative to assess how these rural residential land use patterns would specifically be impacted by the proposed project. It appears, however, that the project has not deterred developers from continuing to purchase large parcels of land for developing rural residences.

27. If EFSEC recommends and the governor approves the project, the terms of the site approval (including the length of time this approval lasts) would be governed by the project's Site Certification Agreement (SCA). After the SCA is executed, a development window is established. When construction has commenced, the SCA is valid for the life of the project/agreement.

    The Applicant's plans for development in relation to the Energy Bill are not relevant for purposes of SEPA. Furthermore, present versions of the Bill are subject to continual and further review and revision in Congress; therefore, it is impossible to predict the final outcome of the Bill and its influence on any present or future business plans. The County is cognizant of the Applicant's proposed development plans, and it is impossible to predict if and when there may be changes at the local government level that could affect this project.

28. Thank you for your comment.

Responses to Comments in Individual Letter 52 from Michael E. Gossler

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. According to data collected by the National Association of Home Builders Research Center (NAHB Research Center 2002), current trends indicate that nationally, single-family homes use approximately 5.0-kilowatt hours (kWh) of electricity per square foot per year. For a 2,000-square-foot home, this would represent 10,000 kWh annually or 10 MWh annually. These data represent only electricity use and therefore do not differentiate between homes that use gas for heating and major appliances, and all-electric homes. In addition, climatic differences between regions affect electricity use. When these data are divided into geographic zones defined by the Energy Information Administration of the U.S. Department of Energy, the results show that annual per-square-foot electricity consumption for the households sampled in the Pacific region was 6.0 kWh (or 12 MWh) annually for a 2,000-square-foot home. (The Pacific region is defined as the states of Washington, Oregon, California, Alaska, and Hawaii).

   Section 3.5.2 of the Draft EIS estimates that the proposed project would consume between 800 to 875 MWh of electricity annually. This level of energy consumption is the equivalent of between 80 to 88 2,000-square-foot, single-family homes assuming an average consumption rate of 10 MWh per square foot annually. The size of the project area is approximately 6,000 acres (please refer to Individual Letter 23, Response 5 regarding updated calculations of project site acreage). The minimum lot size in the project area under both the Agriculture-20 and Forest and Range zones is 20 acres. Larger lots, however, such as the Horse Canyon Estates property along Bettas Road, have already been subdivided into smaller lots for residential development. As of the winter of 2003/2004, the Horse Canyon Estates project was marketing 24 lots for new residences. Therefore, it would not be infeasible that if the KVWPP were not approved, an equivalent or greater amount of electrical energy would be consumed through the development of residential units across the project site.

   Visual impacts attributable to the No Action Alternative are discussed in Section 3.9.4 of the Draft EIS. Section 3.9.4 does not conclude that permitted residential development at the project site would have a greater aesthetic impact than the proposed project. Section 3.9.4 states that the visual character of the project area would remain rural assuming that land uses would continue to follow recent trends and that no areawide rezoning would occur in the near future.

2. Please refer to Individual Letter 48, Response 45 regarding the potential for further development at the project site under the current zoning ordinance. Please refer to Individual Letter 1, Response 8 regarding updated information on the project permitting process.

3. The Draft EIS recognizes in several places that rural residential development and recreation uses occupy the project area. Section 3.6.1 of the Draft EIS states, “There are

approximately 60 dwellings within 1 mile of the proposed project"; these residences are illustrated on Figure 3.6-1. Section 3.6.1 also describes hunting and rock hounding as recreational activity that occurs on the project site and in the project area.

4. Please refer to Key Issue B in Section 2 of this volume regarding property values and Local Agency Letter 2, Response 17 regarding increased tourism in Kittitas County.

   The project's effects on recreational users are addressed in Section 3.6.2 of the Draft EIS. The Draft EIS discloses that because of liability and safety concerns, it is anticipated that recreational activities would either be not allowed or be restricted on Washington Department of Natural Resources lands leased for wind energy use. Access restrictions on this property, however, would not be expected to substantially affect the level of recreational users countywide.

5. Section 3.9 of the Draft EIS acknowledges that for many viewers, the mere presence of the wind turbines, as well as the constant flashing of lights on the turbines, would represent a significant unavoidable adverse impact. These project features would greatly alter the appearance of the existing rural landscape over a large area of the Kittitas Valley.

Responses to Comments in Individual letter 53 from Jill D. Kuhn

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Please refer to Key Issue A in Section 2 of this volume regarding project definition.

2. Please refer to Local Agency Letter 2, Response 5 regarding independent study and analysis of the project.

3. Please refer to Local Agency Letter 2, Response 6 regarding distribution of power generated by the proposed project and to Individual Letter 1, Response 9 regarding the cost of power to consumers.

   To be interconnected to either the Bonneville or Puget Sound Energy (PSE) grids, the project would require an interconnection and transmission agreement that complies with Federal Energy Regulatory Commission, National Electric Reliability Council, and Western Electric Coordinating Council standards. This would ensure the safe and reliable delivery of power from the project to the grid. Power from the project would be integrated into the overall grid system. The overall grid system is handled by Bonneville and/or PSE system operations groups, who are responsible for scheduling and managing their respective grid control areas (Taylor, pers. comm., 2004).

   As described in the Application for Site Certification, the Applicant contracted with Bonneville to perform a System Impact Study (SIS) to determine the impact of adding wind power into the Bonneville grid at the proposed point of interconnection. This study will determine the scope and approximate costs of upgrading the Bonneville system to accept the power from the project. Bonneville's preliminary interconnection feasibility evaluation confirmed an interconnection can made at the proposed point. Once the SIS is complete, a detailed Facilities Impact Study (FIS) will be performed to determine the basic design, construction costs, and schedule for installing the Bonneville interconnection facilities. The project is undergoing a similar SIS and FIS review with Puget Sound Energy (Sagebrush Power Partners LLC 2003a, Section 2.4.4).

   Wind power developers are not able to execute a power sales agreement until after project land use approvals have been obtained. Therefore, the cost of selling this power will be determined at a later date.

4. Please refer to Key Issue A in Section 2 of this volume regarding project definition.

5. Please refer to Local Agency Letter 2, Response 10 regarding additional analysis of offsite alternatives.

6. Please refer to State Agency Letter 3, Response 5 regarding adequacy of the No Action Alternative. Please refer to Local Agency Letter 2, Response 6 regarding distribution of power generated by the proposed project.

7. Sections 1.7.2 and 3.7.2 of the Final EIS have been revised to identify differences in construction and operational employment numbers as well as in property tax impacts for a 65-turbine project.

8. Please refer to Local Agency Letter 2, Response 17 and Individual Letter 15, Response 13 for a more detailed discussion of why it is anticipated that tourism would increase because of the proposed project.

   Nearly three-fourths of the approximate 6,000-acre project area is in private ownership (please refer to Individual Letter 23, Response 5 regarding updated calculations of project site acreage). Recreational activities on these private lands would continue to be at the discretion of the individual landowners after the project is operational. As discussed in Section 3.6 of the Draft EIS, there could be conflicts between recreational uses on the publicly accessible portion of Washington Department of Natural Resources (DNR) property in the project area. However, roughly half of the DNR lands within the project area currently do not have legal public access; the only DNR parcels to which public access is currently allowed are in Sections 10 and 16 within Township 19 North, Range 17 East. Any recreational conflicts on DNR lands would be adequately mitigated.

9. An archaeological survey and cultural landscape study were completed for the project area. These survey reports were submitted to the State Historic Preservation Office for review and met the standards and guidelines for Washington State. The Applicant has agreed to avoid ground-disturbing activity within 100 feet of all documented cultural resources sites; therefore, the proposed turbine locations would not impact these resources. Furthermore, there is adequate mitigation to ensure that if unknown resources are encountered during construction, they would be protected to minimize adverse effects. In addition, EFSEC and the Applicant have undertaken several measures to initiate interaction and consultation with the Yakama Nation (see Section 3.8.2 of the Final EIS). In January 2004, the Yakama Nation requested a meeting with EFSEC and the Applicant to discuss and plan for the cumulative effect of wind power on a regional basis. This consultation is ongoing. Also, please refer to revisions to Sections 1.7.4 and 3.8 of the Final EIS.

10. Please refer to Organization Letter 5, Comment 63 regarding updated information on the various types of television interference expected at the project site. This information has also been included in revisions to Section 3.13.2 of the Final EIS.

    Please refer to Local Agency Letter 2, Response 19 regarding the Applicant's proposed mitigation measure to consult with affected residents and the recommendation for additional mitigation measures to minimize television interference.

    Please refer to Local Agency Letter 2, Response 19 regarding updated information and analysis of the project's effects on radio interference. Sections 1.7.6 and 3.13.2 of the Final EIS have been revised to include new information on radio interference.

11. The Draft EIS recognizes that the project is not consistent with the Kittitas County Comprehensive Plan or the Kittitas County Zoning Code. The County has developed a process whereby no proposed wind power project is consistent with the existing Comprehensive Plan or Zoning Code. Applicants proposing wind power development in Kittitas County must submit an application for a Comprehensive Plan amendment, rezone change, development agreement, and development permit to the County for review and approval. Please refer to Individual Letter 1, Response 8 regarding updated information on the project permitting process.

    Section 1.9.6 of the Draft EIS, cited in this comment, refers to cumulative land use impacts. Even if a project proposal is not consistent with existing local plans and policies, this does not relieve the obligation under SEPA (WAC 197-11-060[4][e]) to consider the cumulative effect of the three proposed wind power projects; therefore, the analysis of cumulative land use and recreation impacts can and should be evaluated.

12. Please refer to State Agency Letter 3, Response 5 regarding updates to the No Action Alternative and to Local Agency Letter 2, Response 6 regarding distribution of power generated by the proposed project.

13. Please refer to Key Issue A in Section 2 of this volume regarding project definition.

14. The number and location of the proposed meteorological towers are described and illustrated in Section 2.2.3 of the Draft EIS as follows: "The Applicant proposes to erect up to nine permanent meteorological towers in the project area, although it is likely that only four would be constructed. The potential location of the nine proposed permanent meteorological towers is shown in Figure 2-1." In their post hearing filings with EFSEC, the Applicant committed to reducing the number of turbines to no more than 5. The Final EIS reflects this revised number.

15. Under the No Action Alternative existing uses in the project area including cattle grazing and recreational activities would continue without being affected by the proposed project. However, this does not preclude other development allowed under permitted uses in the project area. The specific type, nature, and extent of future development at the project site are unknown and would depend primarily on county growth trends and consistency with the Kittitas County Comprehensive Plan and Zoning Code. Permitted land uses in the project area include ranching, resource management uses such as agricultural practices, and residential.

16. Cricklewood Lane would not be used as an access road as part of proposed project construction. (See Section 3.10.2 of the Draft EIS under Roadway Navigation Hazards: "Construction vehicles would not use private roadways used by residents who live in or visit the project area, such as Elk Springs Road and Cricklewood Lane.") Existing and proposed new project access roads are clearly identified in Figure 2-1 of the Draft EIS. The footprint of temporary disturbance for the existing and new roads has been updated in Tables 2-1 and 2-2 of the Final EIS. The construction effects of new roads have been quantified and accounted for throughout the Final EIS construction impact analyses.

Please refer to State Agency Letter 3, Response 26 regarding updated calculations of project roadway lengths.

17. A discussion of tower collapse is presented in Section 3.4.2 of the Draft EIS. Available information on the topic was provided. After the Draft EIS was published, additional information on two specific instances of tower collapse and their causes was made available through the prefiled testimony on the project (Jorgensen, Prefiled Testimony, Exhibit 37). The discussion of tower collapse has been updated in Section 3.4.2 of the Final EIS to include this information. Mitigation measures are presented in Section 3.4.4.

18. Please refer to Local Agency Letter 2, Response 6 regarding distribution of power generated by the proposed project. The power produced would most likely serve a portion of the needs of the Northwest power pool. Therefore, a discussion of the Northwest region's electricity market is relevant and applicable per SEPA rules (WAC 197-11-440[6][a]).

Responses to Comments in Individual Letter 54 from Charles S. Wassell, Jr.

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Please refer to Organization Letter 4, Response 9 regarding the anticipated power generation source(s) required to back up the proposed wind power project. Please refer to Individual Letter 51, Response 4 regarding the incremental cost of integrating wind power into the existing utility grid.

2. Please refer to Organization Letter 4, Response 9. The KVWPP would not include any provision for conventional (fossil fuel) backup power; at times when the wind is insufficient for the turbines to operate, the project simply would not generate electricity. The utility purchasing the power from the project would integrate it into the utility's overall supply. The utility would make the decision regarding additional power requirements including the source of additional power, if any. Any new power facility needed to support the proposed wind power project would be required to undergo its own environmental review.

3. A revised tax revenue analysis was prepared for a 65-turbine project by ECONorthwest in August 2006. The revised analysis assumed that the total value of the project was $190,000,000. Section 3.7 of the Final EIS presents the updated information. Washington State Initiative 747 (I-747) applies to taxable personal property such as machinery and equipment but does not apply to new construction, which is considered the real property portion of the project. Substitute Senate Bill 6141 (effective in June 2006) clarified that 100% of the project would be regarded as new construction (Strand 2006a, 2006b; Washington State Legislature 2006). The KVWPP would therefore be exempt from the limits established by Initiative I-747.

   The Economic Development Group of Kittitas County has provided more accurate estimates of project tax revenues that take into account a wider array of variables and factors. Please refer to Organization Letter 6, Response 1 and revisions to Section 3.7.2 of the Final EIS.

   The ECONorthwest study did not explicitly conclude that the project would bring substantial property tax benefits to Kittitas County. This referenced sentence in Section 3.7.2 of the Final EIS has been deleted.

4. Please refer to Key Issue B in Section 2 of this volume regarding property values.

5. The discussion of the No Action Alternative in Section 3.5.2 of the Final EIS has been revised to eliminate the statement that the anticipated land requirements for a 60-aMW combustion turbine facility would be more than two times greater than the KVWPP.

Responses to Comments in Individual Letter 55 from Woody Woodcock

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Please refer to Key Issue A in Section 2 of this volume regarding project definition.

2. The estimated property tax revenue for the project would be for the first year of project operations, with the revenue diminishing in subsequent years due to project depreciation. In addition, the projected estimate of added property tax value has been revised. Please refer to Organization Letter 6, Response 1 and revisions to Section 3.7.2 of the Final EIS.

3. Please refer to Key Issue B in Section 2 of this volume regarding property values.

4. Please refer to Local Agency Letter 2, Response 88 regarding the need to conduct a survey on microwave communications reception prior to project construction.

5. If EFSEC recommends and the governor approves the project, the specific time frame requirements for implementing mitigation would be governed by the terms and conditions set forth in the Site Certification Agreement. Also, please refer to Local Agency Letter 2, Response 19.

6. Proposed project setbacks are identified for residences, public and private roads, and property lines. Please refer to Local Agency Letter 2, Response 48 regarding similar setback distances prescribed at other operating wind power projects in the U.S. The proposed noise setback is 1,320 feet from existing non-participating residences.

7. Please refer to Response 6 of this letter. Please refer to Individual Letter 11, Response 2 regarding project setbacks from future development on nonparticipating properties.

8. The project's central control system can be programmed to detect icing events using wind vane and temperature sensors. When the temperature falls below or hovers around freezing and the wind vane stays in one direction, an icing event may be occurring. The project will be fitted with multiple wind vane sensors at a number of locations to ensure there is a redundant system in place for ice detection. If an icing event is detected, the central control system can detect this and perform any necessary action (Jorgensen, Prefiled Testimony, Exhibit 37).

9. Please refer to Local Agency Letter 1, Response 3 regarding the Federal Aviation Administration's review of the project's lighting plan.

10. Please refer to Response 5 of this letter.

11. Please refer to Local Agency Letter 2, Response 10 regarding additional analysis of offsite alternatives. The environmental impacts of the Wild Horse Wind Power Project

have been analyzed in a separate Draft and Final EIS issued by EFSEC (EFSEC 2004a, 2005a). The discord between project area neighbors is noted.

12. Please note that EFSEC received an Application for Site Certification for the Wild Horse project on March 9, 2004, issued a Draft EIS for this project in August 2004 (EFSEC 2004a), and a Final EIS in May 2005 (EFSEC 2005a). Also, please refer to Local Agency Letter 2, Response 10 regarding additional analysis of offsite alternatives, including the Wild Horse Wind Power Project.

13. Please refer to Individual Letter 1, Response 8 regarding the project permitting process. Please refer to Local Agency Letter 2, Response 57 regarding the ability of EFSEC to enforce State Environmental Policy Act mitigation measures.

Responses to Comments in Individual Letter 56 from Neal Houser

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment. Please refer to Key Issue B in Section 2 of this volume regarding property values.

2. Unlike wind turbines, transmission lines are almost universally considered unattractive. There is also widespread belief that living near transmission lines is a health hazard. For these reasons, there is a much clearer case that transmission lines would negatively affect property values.

3. Thank you for your comment. Your opposition to the project is noted.

4. Please refer to Local Agency Letter 2, Response 10 regarding additional analysis of offsite alternatives. Please refer to Organization Letter 4, Response 5 regarding reasons why EFSEC has limited its analysis of alternative sites to those within Kittitas County.

Responses to Comments in Individual Letter 57 from Gail Farrar

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Please refer to Individual Letter 15, Response 4 regarding viability of the project site to support wind power operations.

2. At times when the wind is insufficient for the turbines to operate, the project simply would not generate electricity. Also, please refer to Organization Letter 4, Response 9.

3. Please refer to Response 2 of this letter.

Responses to Comments in Individual Letter 58 from Ray and Cookie Ridenour

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment. Please note that Kittitas County categorizes wind farms as a utility use, not an industrial use.

2. Thank you for your comment.

3. Please refer to Local Agency Letter 2, Response 10 regarding additional analysis of offsite alternatives.

   As identified in Section 2.6.2 of the Final EIS, the Boylston Mountains site has sufficient wind resource but is composed of lands that do not satisfy criteria related to land use or environmental constraints. Construction and operation of a wind farm in the Boylston Mountains would conflict with ongoing military operations on the Yakima Training Center, a federal military reservation administered by the U.S. Department of Defense.

   Wind Ridge Power Partners LLC submitted an Application for Site Certification to EFSEC for the Wild Horse Wind Power Project at the Whiskey Dick site in March 2004 (Wind Ridge Power Partners LLC 2004). EFSEC issued a Draft EIS for the Wild Horse project in August 2004 (EFSEC 2004a) and a Final EIS in May 2005 (EFSEC 2005a). Because this project has been analyzed un depth in a separate document, and because the EFSEC members have considered this information in other proceedings, the Wild Horse Project was not carried forward for further evaluation in the impact analysis of the KVWPP Final EIS.

4. Thank you for your comment. Your opposition to the project is noted.

Responses to Comments in Individual Letter 59 from Carla H. Kaatz

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment.

2. Thank you for your comment. Please refer to Local Agency Letter 2, Response 18 regarding historic tribal resources. Your support for the project is noted.

Responses to Comments in Individual Letter 60 from Ed Garrett

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. Thank you for your comment. This e-mail includes a copy of Individual Letter 3. Please refer to the responses to Individual Letter 3.

Responses to Comments in Individual Letter 61 from Eloise Kirchmeyer

Note: The responses listed below are numbered to correspond to the numbers shown in the right-hand margin of the comment letter.

1. The proposed project would not directly change or replace existing uses on the project site (i.e., rangeland) or adjacent rural areas. Furthermore, Kittitas County categorizes wind farms as a utility use not an industrial use.

2. There is a vertical axis wind turbine located on Thorp Prairie about 2 miles southwest of the KVWPP site near Ellensburg. The current status of this turbine is unknown.

   If for any reason the KVWPP is terminated or decommissioned, the Applicant has agreed to remove all turbine towers and foundations to a depth of 3 feet below the ground.

3. Based on your address (6281 Reecer Creek Road), the closest KVWPP wind turbine would be located approximately 2.5 miles to the west. Please note that not every potential view receptor in the project area has been documented. However, selected viewpoints are representative of a reasonable variety and range of views in the project area.