



# Oregon

Theodore R. Kulongoski, Governor



OREGON  
DEPARTMENT OF  
ENERGY

December 30, 2009

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Ms. Valerie Franklin  
Project Development Manager  
Horizon Wind Energy LLC  
53 SW Yamhill Street  
Portland, OR 97204

RE: First Request for Additional  
Information (RAI) Regarding the  
Preliminary Site Certificate  
Application for the Antelope Ridge  
Wind Project

Dear Ms. Franklin:

The Oregon Department of Energy has completed its initial review of the Application for Site Certificate for the proposed Antelope Ridge Wind Project to be located in Union County, Oregon. The preliminary application was received by the Department on October 19, 2009. In accordance with Oregon Administrative Rules (OAR) 340-015-0190(1)(b), this letter serves to notify Horizon Wind Energy that the Department has determined that the Application is incomplete.

Please review the attached Request for Additional Information (RAI) and provide the requested information ***no later than February 16, 2010***. Responses should reference the applicable RAI item number in the first column of the attached table. If additional field surveys will need to be conducted to provide the requested information, please provide a detailed description of the survey, the schedule for the field work, and the date Horizon will submit the final report. If you need more time to respond to the enclosed RAI, please contact me no later than January 25, 2010 to request additional time.

Please do not hesitate to contact me by phone at 541-567-3840 (ext. 225) or by e-mail at [sue.oliver@state.or.us](mailto:sue.oliver@state.or.us) if you have any questions about the enclosed RAI or would like to set up a meeting with the Department to discuss the RAI.

Sincerely yours,

***[Original Signed]***

Sue Oliver  
Energy Facility Siting Officer

Enclosure: First Request for Additional Information (RAI No. 1)

Cc (via email distribution, with enclosure):

Thomas M. Stoops, Oregon Department of Energy  
Chad Darby, Golder Associates  
Colleen Fagan, Oregon Department of Fish and Wildlife  
Jan Houck, Oregon Parks and Recreation Department  
Hanley Jenkins, Union County Planning Department  
Sarah Kelly, Oregon Department of State Lands  
Marisa Meyer, U.S. Fish and Wildlife Service  
Sandra Patterson, City of Union  
Susan White, OPRD State Historical Preservation Organization

RAI No.	Application Reference	Related Rule (OAR)	Comment and Request for Additional Information
1-1	Exhibit B Section B.8.1 Section B.11	345-021-0010(1)(b)(B)	<p>Section B.8.1 states that expected overhead collection system will include approximately 65 miles of underground line and 28 miles of overhead line, for a total of approximately 82 miles of collector lines (almost 80% of which will be underground). However, Section B.11 states that "...the collector line system is anticipated to be approximately 94 miles in total, including both underground and overhead...".</p> <p>Section B.8.1 indicates that the nearby Elkhorn facility required approximately 50% of the total collection system to be located overhead and that Horizon "expects that a similar percentage of collector lines...could be overhead" at the Antelope facility. Other sections of the ASC (Exhibit I, Exhibit K) confirm that the geology and soils within the Antelope Ridge site boundary are very similar to that where the Elkhorn facility is located. This would indicate that the length of overhead collector lines at the Antelope facility could be as much as 47 miles, not 28 miles.</p> <p>Information from public meetings and inquiries indicate that the extent and visibility of the overhead collection lines is a significant local issue with the Antelope project. Clarify the discrepancy in the anticipated lengths of the underground and overhead components of the collection system. Ensure that the overhead collector lines are included in the visual analysis in Exhibit R.</p> <p>[Please see also RAI Comment No. 1-15 regarding revisions to Table G-1 and RAI Comment No. 1-67 regarding visual impact analysis of aboveground collector lines.]</p>
1-2	Exhibit B B.8.8	345-021-0010(1)(b)(B)	<p>Section B.8.8 states that "A temporary batch plant and temporary rock crusher will be located within one of the 10-acre laydown areas during construction." The site(s) for a temporary batch plant must be specified and fully described in the application.</p>
1-3	Exhibit C	345-021-0010(1)(c)(A)	<p>The proposed location of the Operations and Maintenance (O&amp;M) facility is not shown on any of the maps. Provide a map documenting the proposed</p>

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			location of the O&M facility.
1-4	Exhibit C	345-021-0010(1)(c)(A)	Section B.8.8 states that up to two 10-acre laydown areas will be located for equipment laydown and on-site rock crushing. Attachment C-3 and C-5 maps only show one laydown yard. Please provide maps with the location of the second proposed laydown area. See also RAI Comment No. 1-2 regarding location of temporary batch plant(s) and rock crushing areas.
1-5	Exhibit C (Section C.1)	345-021-0010(1)(c)(A)	<p>Section C.1 indicates that “In the course of final ASC preparations, potential additions to the Site Boundary were identified. These potential additions will be studied and additional information submitted to Oregon Department of Energy during the completeness determination period if such additions should prove to be viable alternate areas for the proposed preliminary Facility components.”</p> <p>The color shading in the printed map provided as Attachment C-4 (“Version 12” of the site boundary) makes it very difficult to discern the difference between the various site boundary notations identified in the legend. Review of the electronic version of the map provided clarity, except for the proposed “southern” transmission line route. Provide information on the status of the studies required for the areas identified as “unstudied additions to the site boundary.” Please confirm whether the southern transmission line corridor has been studied previously. (Note that the final application must include print versions of maps that can be accurately read without resorting to the electronic file. This might require multiple maps with a larger scale and/or larger print versions for inclusion in the final application).</p> <p>Comparison of Attachment C-4 with other maps, especially attachment C-5, indicates that not all areas identified as “removed” from the site boundary were also removed from other maps. The accurate and complete depiction of the site boundary is required for a site certificate application. The applicant should make a final determination of the site boundary and then ensure that it is consistently and accurately portrayed in every map in the ASC (including the</p>

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			maps provided for other exhibits).
1-6	Exhibit C	345-021-0010(c)(A &B)	<p>OAR 345-021-0010(c)(B) requires that the applicant provide “A description of the location of the proposed energy facility site, the proposed site of each related or supporting facility and areas of temporary disturbance, <i>including the approximate land area of each</i>” [<i>emphasis added</i>].</p> <p>Provide a table that indicates the maximum temporary and permanent impacts, in acres, of each related and supporting facility. The table should include all roads, laydown areas, transmission line(s), underground and overhead collector lines, turbines and transformer pads, substation(s), O&amp;M facility, meteorological towers, and any other disturbances that will have a temporary or permanent impact on the landscape.</p> <p>Note that the information provided should be reconciled with the stated soil disturbance acreage given in Exhibit I (see RAI No. 1-28) and the information provided for Exhibit W (see RAI No. 1-76).</p>
1-7	Exhibit C Attachment C-5 (maps)	345-021-0010(c)(A)	<p>The facility description indicates that there will be up to 182 turbines. However, the maps in Attachment C-5 appear to show only 175 turbines. Provide revised maps indicating the proposed locations of the additional seven turbines to ensure that the application reflects the greatest extent of the site boundary and areas of disturbance. See also RAI No. 1-77 on Exhibit X)</p>
1-8	Exhibit D Section D.5	345-021-0010(1)(d)	<p>Section D.5 states that “Through its subsidiary project companies Horizon has also developed and constructed, and is now operating, wind generation facilities throughout the United States. As the owner of numerous wind generating facilities throughout the United States, from time to time Horizon and/or its subsidiary project companies have received notices from regulatory authorities regarding a project’s compliance with laws or permits during construction and/or operation. However, Horizon has not received notices of non-compliance that would be considered materials [sic] either individually or in the aggregate.”</p>

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			<p>OAR 345-021-0010(1)(d) requires that Exhibit D of the ASC include “the past performance of the applicant, <i>including but not limited to the number and severity of any regulatory citations</i> in constructing or operating a facility, type of equipment, or process similar to the proposed facility” [<i>emphasis added</i>].</p> <p>A minimum of a three-year regulatory citation history for operating wind farms (construction and operations) must be provided for Horizon Wind Energy and its subsidiary project companies (U.S. operations only). The history should include the name of the facility, the date of the violation(s), the regulatory agency issuing the citation, a brief description of the violation, and the final resolution.</p>
1-9	Exhibit D Section D.8	345-021-0010(1)(d)	<p>It is clear that the Antelope project will need to rely in part on mitigation to demonstrate compliance with some standards of Division 22 and 24 of OAR Chapter 345, especially for wildlife impacts (and possibly for wetland and archaeological impacts). OAR 345-021-0010(1)(d)(G) requires that Exhibit D include “evidence that the applicant can successfully complete such proposed mitigation, including past experience with other projects and the qualifications and experience of personnel upon whom the applicant will rely, to the extent that the identities of such persons are known at the date of submittal.”</p> <p>The response in Section D.8 of the ASC states only that “Applicant’s sister companies (other subsidiaries of Horizon) have successfully completed and thereafter complied with mitigation plans proposed during the permitting process at wind projects in the Northwest.”</p> <p>The Applicant’s statement in the ASC is insufficient to meet the requirement to provide “evidence that the applicant can successfully complete...mitigation.” Please provide specific and detailed examples of mitigation requirements for at least three other projects, preferably projects in Oregon or other areas of the Northwest. Provide evidence that the applicant has successfully completed (or is in the process of completing) the mitigation requirement(s). An example of satisfactory evidence would be correspondence related to the completion of the</p>

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			mitigation requirement(s) from the agency that imposed the requirement in the first place. If possible, provide evidence relating not only to fish and wildlife habitat mitigation projects, but also archaeological and wetlands mitigation projects.
1-10	Exhibit E Section E.2.3 Section E.3.3	345-021-0010(1)(e)	Rock crushers and concrete ready mix plants (“batch plants”) require general air contaminant discharge permits from the Oregon Department of Environmental Quality (see OAR 340-216-0060). The ASC indicates that both types of facilities might be located within the Antelope Ridge site boundary. Provide the required permit description(s) and the contact information.
1-11	Exhibit E Section E.2.4 Section E.3.4	345-021-0010(1)(e)(C)	The Applicant should note that in the event the Energy Facility Siting Council issues a Site Certificate for the Antelope Ridge facility, a Conditional Use Permit must still be obtained from Union County. Revise E.2.4 and E.3.4 to indicate that a Conditional Use Permit must be obtained from Union County. See ORS 469.401.
1-12	Exhibit E Section E.5  Exhibit I Attachment I-8	345-021-0010(1)(e)(D)	Attachment I-8 of the ASC includes an unsigned copy of an NPDES 1200-C permit application. On November 25, 2009 the Department of Energy received a signed copy of the NPDES permit application, with a copy of an email (dated November 20, 2009) from Horizon Energy to the Department of Environmental Quality (DEQ) indicating that an [apparently revised] application was to be transmitted to DEQ the following Monday (November 23, 2009).  Provide the information required by OAR 345-021-0010(1)(e)(D), which states that the applicant must submit “evidence that the responsible agency has received a permit application and the estimated date when the responsible agency will complete its review and issue a permit decision.” Correspondence from DEQ with the required information would suffice to meet this requirement.
1-13	Exhibit G Table G-1	345-021-0010(1)(g)(A)	The proposed facility will use a substantial quantity of concrete during construction of the facility. Revise Table G-1 to include the estimated amount of concrete that will be used for construction of facility components, including

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			turbine and met tower foundations, O&M facility construction, transformer pads, and other structures requiring concrete. If the amount of steel and concrete (and related water/rock/gravel) needed is different for different turbine types, the amount must be specified for each turbine type.
1-14	Exhibit G Table G-1	345-021-0010(1)(g)(A)	Clarify why the amount of rock and gravel to be removed from the facility upon retirement will be twice the amount of rock and gravel estimated to be used for construction of the facility.
1-15	Exhibit G Table G-1	345-021-0010(1)(g)(A)	Revise Table G-1 as necessary to reflect any revisions made to the amount of underground and overhead collection lines in response to RAI Comment No. 1-1.
1-16	Exhibit G Table G-2	345-021-0010(1)(g)(A)	The estimated amount of mineral oil (161,400 gallons) indicated in Section G.2.2 (127, 400 gallons from 182 turbines at 700 gallons each plus 34,000 gallons from two transformers at 17,000 gallons each) does not match the total of 144,600 gallons that is indicated in Table G-2. Please confirm the amount of mineral oil that will be used.
1-17	Exhibit G Table G-2	345-021-0010(1)(g)(A)	The amounts of some material listed in Table G-2 seem unusually low for a facility of this size with an estimated operating life of 20 years. For example, the amount of Roundup and 2, 4-D for weed control, general lubricants, and paints/solvents is only a fraction of the amounts estimated to be used by other wind facilities that are much smaller than the proposed Antelope Ridge facility. Please confirm the amounts listed in Table G-2 and revise if necessary.
1-18	Exhibit G Section G.4.1	345-021-0010(1)(g)(A)	A significant amount of brush and tree clearing will be needed for the construction of 56 miles of new roads through the site boundary. Explain how Horizon proposes to dispose of the woody debris that will be generated during construction.
1-19	Exhibit G Section G.4.1	345-021-0010(1)(g)(A)	Section G.4.1 states that “Truck wash-outs, excess concrete, etc will all be disposed of off-site to the local landfill as well.” Describe the process by which Horizon will capture, store, and transport excess concrete and solid and liquid material from “truck wash-outs.”

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1-20	Exhibit G	General Comment	Please ensure that the amounts of material given in Exhibit G are reconciled with the amounts given in Exhibit W.
1-21	Exhibit H Section H.3.1	345-021-0010(1)(h)(B)	<p>The proposed future work plan provides only generalized types of studies that may be undertaken once a site certificate has been approved. The purpose of this requirement is to identify what, if any, special conditions occur at the site so that these can be included as conditions in the Site Certificate. The information provided is insufficient to evaluate if special conditions could occur at the site.</p> <p>Provide a specific plan of geo-technical investigations and the investigation schedule as required by OAR 345-021-0010(1)(h)(B), including, but not limited to, the following information:</p> <ul style="list-style-type: none"> <li>• Specify the number and nature (e.g. depths) of test pits, boreholes, and other subsurface investigations;</li> <li>• Estimate of the nature and number of soil and other testing procedures proposed at the site; and</li> <li>• The duration and schedule for field investigations.</li> </ul>
1-22	Exhibit H Section H.4	345-021-0010(1)(h)(C)	There is no information provided as to what specific issues were discussed with the Oregon Department of Geology and Mineral Industries (DOGAMI) or what issues, if any, DOGAMI identified as significant or requiring specific attention to ensure the site application will be complete. Please provide documentation of the consultation with DOGAMI (email, phone records, written correspondence).
1-23	Exhibit H Section H.7	345-021-0010(1)(h)(F)	The note in Section V(h) of the Project Order stated that “The application should note the codes and guidelines used to prepare information in Exhibit H and provide an explanation if any are different from those cited in the Council’s rules.” OAR 345-021-0010(1)(h)(F) requires use of the 2003 IBC edition, although more recent editions are available (as noted in the Project Order). Exhibit H is unclear about the version of the International Building Code (IBC)

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			<p>that was used to establish seismic design parameters for this part of the submittal. This is important because the 2006 and 2009 editions of the IBC refer to a companion volume of ASCE 7-05 that applies to site-specific assessments of seismic hazard.</p> <p>Exhibit H presents what is essentially a site-specific assessment based on the 2008 U.S. Geological Survey (USGS) National Hazard Model, then applies post-2003 IBC seismic design requirements. However, as noted above, the use of post-2003 IBC requirements would require reference to Chapters 21 and 22 of ASCE 7-05 (the companion volume). Exhibit H does not provide reference to ASCE 7-05. Clarify exactly which codes and guidelines were used in the preparation of Exhibit H. Consult with DOGAMI about the most appropriate approach for the Exhibit H analysis and revise as necessary.</p>
1-24	Exhibit H Section H.7	345-021-0010(1)(h)(F)	<p>The 2003 IBC provides a map from which the spectral accelerations <math>S_s</math> and <math>S_1</math> can be obtained. These values can also be taken from the USGS 2002 National Hazard maps provided for use with the 2003 IBC. While the values are similar, it is not correct to apply the 2008 USGS hazard values to the 2003 IBC.</p> <p>As currently described in the ASC, the facility is not designed for the Maximum Considered Earthquake ground motions. The five-percent damped design response spectrum is two-thirds of the five-percent damped Maximum Considered Earthquake response spectrum. The two-thirds factor is a simple scaling factor and unrelated to the development of a five-percent damped response spectrum.</p> <p>To meet the requirement of OAR 345-021-0010(1)(h)(F)(ii) the submittal would need to review all the known seismic sources in northern Oregon and southern Washington, including the subduction zone and unspecified background sources. Expected ground motions at the site from the maximum magnitude earthquake on each Maximum Credible Earthquake source is then calculated from appropriate peak ground acceleration (PGA) ground motion attenuation relationships selected for the different types of seismic sources considered and their source-to-site distances. All the sources with median (not</p>

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			<p>mean) PGA values of more than 0.05 g should be listed.</p> <p>The analysis of the deaggregation of the USGS hazard assessment provided in the submittal is non-standard. Normal procedure is to use the modal earthquake magnitude and distance from the deaggregation rather than the mean. This is particularly important (and difficult) in the Pacific Northwest where the hazard contribution is from two major sources—the subduction zone and local earthquakes. Review of the deaggregation plots provided in the submittal indicates that the mean values have little or no contribution to the hazard because they are the average of the infrequent, moderate-magnitude-local earthquakes and the more frequent large and distant subduction zone earthquakes. The modal values have magnitudes and distances associated with the subduction zone earthquakes. Please explain why the analysis used the mean values rather than the modal earthquake magnitude and distance from the deaggregation for the Exhibit H analysis. Consult with DOGAMI about the most appropriate approach for the Exhibit H analysis and revise as necessary.</p>
1-25	Exhibit H Section H.7.2	345-021-0010(1)(h)(F)(iii)	<p>In addition to presentation in a table, the earthquakes listed in Table H-3 would be more easily identified and understood if they include a distance from the site and were also presented on a map. Calibration of the inferred MM III or greater intensities with 38 actual MMI measurements from La Grande between 1906 to 1985 as listed in the National Geophysical Data Center (NGDC) felt intensity database would assist understanding of the history of earthquake shaking at the site. Please revise to include this information.</p>
1-26	Exhibit H Section H.7.3	345-021-0010(1)(h)(F)(iv)	<p>The submittal does not provide the median response spectrum for the site Maximum Credible Earthquake, rather it provides the Maximum Considered Earthquake response spectrum (five-percent damped) based on mean spectral accelerations from the 2008 US Geological Survey National Hazard Maps. The IBC Maximum Considered Earthquake response spectrum provided is not for the 2003 IBC but rather a later version. Consult with DOGAMI about the most appropriate approach for the Exhibit H analysis and revise as necessary.</p>

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1-27	Exhibit I Attachments I-1 through I-7	345-021-0010(1)(i)(D)	The soil maps and associated legends (even the inset maps) are too small to be legible. Provide larger versions of these maps for review. Note that the final application will need to include maps that are legible.
1-28	Exhibit I Section I.4	345-021-0010(1)(i)(C)	<p>Section I.4 states that “Unavoidable impacts to soils within the Site Boundary will result from placement of permanent facilities such as gravel roads and concrete turbine foundations on approximately 190 acres of land. Additionally, Facility construction will temporarily disturb soils on up to approximately 517 acres of land.”</p> <p>Revise this statement if necessary after responding to RAI No. 1-6 concerning the table to be provided of the number of acres that will be permanently and temporarily disturbed by the construction and operation of the facility.</p>
1-29	Exhibit I Section I.5	345-021-0010(1)(i)(D)	On December 1, 2009 the U.S. Environmental Protection Agency promulgated new rules in the Federal Register that the Department believes will apply to the Antelope Ridge facility. The rules (“Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category; Final Rule”) are being phased in over four years and go into effect on February 1, 2010. Please review the new rules and provide a discussion of their applicability to the Antelope facility. Additional information about the new rules can be found at <a href="http://www.epa.gov/waterscience/guide/construction/">http://www.epa.gov/waterscience/guide/construction/</a> .
1-30	Exhibit J	345-021-0010(1)(j)(B)	Please provide a copy of the DSL’s “Letter of Concurrence” with the applicant’s wetland delineation report to verify which waters within the site boundary are jurisdictional.
1-31	Exhibit K Section K.2	345-021-0010(1)(k)	Meteorological towers are identified to range from 210 feet up to approximately 312 feet tall. ORS 215.283(2)(m) & OAR 660-033-0130(16) identify “transmission towers over 200 feet in height” as a nonfarm use subject to local government approval in an Exclusive Farm Use (EFU) Zone. The Union County Zoning, Partition and Subdivision Ordinance (UCZPSO) (Article 21.00) requires demonstration that the OAR 660-033-0130(16) review criteria

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			<p>can be satisfied. In addition, the ASC does not indicate that the FAA requirement to light all towers over 200 feet will also apply to the meteorological towers.</p> <p>Please explain how the meteorological towers, a listed nonfarm use under ORS 215.283(2)(m), would meet the minimum standard criteria in OAR 660-033-0130(16). In addition, indicate how the FAA requirement to light all towers over 200 feet will be met on the meteorological station towers.</p>
1-32	Exhibit K  Section K-2 “Additional Construction Areas”	345-021-0010(1)(k)	<p>Temporary aggregate crushing and temporary (concrete) batching are listed uses in OAR 660-033-0120 (Table 1) that require review by a governing body or its designate under ORS 215.296 and are required to meet the following criteria per OAR 660-033-0130(5):</p> <p>(a) Will not force a significant change in accepted farm or forest practices on surrounding lands devoted to farm or forest use; and</p> <p>(b) Will not significantly increase the cost of accepted farm or forest practices on lands devoted to farm or forest use.</p> <p>Please explain how the temporary aggregate crushing and temporary (concrete) batching activities will meet the minimum standard criteria in OAR 660-033-0130(5)(a) and (b).</p>
1-33	Exhibit K  Section K.4	345-021-0010(1)(k)(C)	<p>Union County indicates that the one predominantly forestland parcel (a mixture of rangeland and forest land owned by the Rocky Mountain Elk Foundation on the east face of Glass Hill) includes part of the 230 kV transmission feeder line route north to the City of La Grande. The proposed use on this parcel would therefore be evaluated under the requirements of OAR 660-006-0025(4)(j) and would not require a Goal 4 exception. However, the review criteria of OAR 660-006-0025(5)(a), (b), and (c) apply:</p> <p>(a) The proposed use will not force a significant change in, or significantly increase the cost of, accepted farming or forest practices on agriculture</p>

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			<p>or forest lands;</p> <p>(b) The proposed use will not significantly increase fire hazard or significantly increase fire suppression costs or significantly increase risks to fire suppression personnel; and</p> <p>(c) A written statement recorded with the deed or written contract with the county or its equivalent is obtained from the land owner which recognizes the rights of adjacent and nearby land owners to conduct forest operations consistent with the Forest Practices Act and Rules for uses authorized in subsections (4)(e),(m),(s),(t) and (w) of this rule.</p> <p>Provide a discussion of how the predominantly forestland parcel proposed to include part of the proposed 230kV transmission feeder line route (north of the City of La Grande) meets the OAR 660-006-0025(5) criteria.</p>
1-34	Exhibit K  Section K.4 And Section K.9.1	345-021-0010(1)(k)(C)	<p>OAR 660-033-0130(37) applies to predominantly farmland parcels and became effective in January 2009 (after the County’s October 2003 adoption of UCZPSO Article 52.00). Because the January 2009 rule replaced the acreage threshold for a Goal 3 exception with specific review criteria, a Goal 3 Exception is unnecessary. Although the ASC provides a good general explanation of how the proposed facility meets many of the criteria, site specific components should be evaluated against the applicable criteria of OAR 660-330-0130(37).</p> <p>Please identify the location of the affected high value farmland soils, the proposed use(s) that may occur on these soils, and an analysis of how the facility meets the criteria of OAR 660-330-0130(37)(a).</p> <p>Distinguish between existing cropland and rangeland non-high value soil areas and analyze how the proposed Facility components satisfy the requirements of OAR 660-330-0130(37)(b) and (c). Provide a more detailed explanation on why Facility components on these soils are necessary.</p>

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1-35	Exhibit K Section K5.3. Attachment K-7	345-021-0010(1)(k)(C)	<p>Union County indicates that there is no regulatory distinction between Big Game Winter Range and Critical Wildlife Habitat. UCZPSO Section 20.09 applies, and requires the same review and management plan requirements for both. Preparation of Big Game Winter Range and Critical Wildlife Habitat management plans will be required.</p> <p>The applicant must provide a Big Game Winter Range management plan and a Critical Wildlife Habitat management plan for the Council’s review. The management plans will be used to determine whether Union County’s Goal 5 protection requirements are met.</p>
1-36	Exhibit K Section K.5.5	345-021-0010(1)(k)(C)	<p>Additional information is required to determine whether the proposed facility meets the Specific Standards Governing Conditional Uses contained in UCZPSO Section 21.07.</p> <p>The proposed locations of the batch plant and rock crushing operations must be specified. Provide additional and specific information about on-site and off-site rock resource quantities necessary for the operation of the temporary (concrete) batch plant and (temporary) rock crushing operations, operation duration, hours of operation, traffic routes, and whether there are any anticipated conflicts with adjacent or nearby land uses. Potential conflicts should be identified and reviewed against the UCZPSO Section 21.07 review requirements.</p>
1-37	Exhibit K Section K.5.7	345-021-0010(1)(k)(C)	<p>Section K..5.7 states that the “Applicant seeks approval from EFSC for a variance from subsection g. While Applicant can commit to maintaining a maximum 12 percent grade on the road providing access to the O&amp;M building (which is likely of highest concern due to occupancy) there could potentially be some areas where turbine access road grades could be up to 14 percent...Applicant will discuss with the local fire marshal as appropriate.”</p> <p>To demonstrate that the proposed facility can meet the requirements of the UCZPSO 5.08 (Development and Fire Siting Standards for A-4 Zone) the applicant must obtain a variance from “appropriate rural fire protection district.” Identify the applicable rural fire protection district(s) and provide</p>

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			documentation that the fire protection district(s) will agree with the requested variance from the County’s road pitch requirements.
1-38	Exhibit K Section K.5.7	345-021-0010(1)(k)(C)	<p>Section 20.08 of the UCZPSO (Riparian Zone Setbacks) regulates land use activities adjacent to Class I streams, rivers and lakes. Jimmy Creek and Clover Creek are inventoried on the County’s Land Use Plan Map as Class I streams. Section 20.08 limits vegetation removal and road and structural construction within riparian zones. Section K.5.7 of the ASC includes only a general description of the practices to minimize impacts to riparian corridors.</p> <p>Identify the location of any facility components that will be located within the Jimmy Creek and Clover Creek riparian zones. Provide specific information concerning how the proposed facility will meet the setback and vegetative cover requirements in UCZPSO Section 20.08.</p>
1-39	Exhibit K Section K.6	345-021-0010(1)(k)(C)	<p>One of Union County’s Goal 5 resource policies (Plan Policy 3) states that “potential geothermal, hydroelectric and irrigation resources will be protected from encroachments which may limit development of those resources <i>at some future time</i>” [<i>emphasis added</i>]. Union County has indicated that to comply with this policy the applicant should identify “how the proposed project will or will not impact existing irrigated agriculture or expansion thereof.”</p> <p>Provide a discussion of the proposed facility’s potential impact on existing and future agriculture irrigation activities in the area.</p>
1-40	Exhibit M Section M.4	345-021-0010(1)(m)(C)	<p>OAR 345-021-0010(1)(m)(C) requires the applicant provide evidence “that the applicant has a reasonable likelihood of obtaining the proposed bond or letter of credit in the amount proposed in paragraph (B), before beginning construction of the facility.”</p> <p>Section M.4 of the ASC states that “Applicant is obtaining a letter from one of Applicant’s banks as evidence to demonstrate that Applicant has a reasonable likelihood of obtaining one or more bonds or letters of credit in an amount</p>

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			<p>equal to or greater than the site restoration costs set forth in Exhibit W. Applicant acknowledges that EFSC will require this evidence prior to issuing the site certificate and will provide this letter during the completeness determination period.”</p> <p>Please provide the referenced letter as evidence that the applicant will be able to meet the requirements of OAR 345-021-0010(1)(m)(C).</p>
1-41	Exhibit O  Section O.2	345-021-0010(1)(o)(A)	<p>The ASC states that during operation, water will be used in the O&amp;M building for normal domestic use, such as drinking and showering. Common uses of water at similar facilities include landscape watering, vehicle washing, chemical mixing (Round up), blade washing and/or equipment washdown. Please confirm if such other uses apply to the Antelope facility, and if so, that the projected volume of water use will not exceed that permitted for use from an exempt well.</p>
1-42	Exhibit P Exhibit Q	345-021-0010(1)(p)	<p>The Oregon Department of Fish and Wildlife (ODFW) and the U.S. Fish and Wildlife Service (USFWS) both provided extensive and detailed comments on the preliminary application for the Antelope Ridge facility (the comments were transmitted to Horizon Wind Energy upon receipt by the Department). Note that many of the comments listed below were based in whole or in part on the comments from ODFW and USFWS. However, the Department did not attempt to include each single comment.</p> <p>Please include in the response to this RAI item a detailed response to the ODFW and USFWS comments (unless the comment was made part of the Exhibit P and Exhibit Q comments below and will be addressed elsewhere in the response to this RAI).</p>
1-43	Exhibit P  Exhibit Q	345-022-0000	<p>OAR 345-022-0000(1) (often referred to as the “Balancing Standard”) discusses the process that the Council must use to issue a site certificate if the proposed facility will not be able to meet one or more of the Council’s standards listed elsewhere in Division 22. Note that “the applicant has the burden to show that the overall public benefits outweigh the damage to the resources, and the</p>

RAI No.	Application Reference	Related Rule (OAR)	Comment and Request for Additional Information
			<p>burden increases proportionately with the degree of damage to the resources.”</p> <p>The Department is concerned that the wildlife issues identified in the ODFW comments may remain unresolved. The applicant must demonstrate, with a preponderance of the evidence, that the proposed facility can meet the Council standards, including mitigation.</p> <p>If the applicant believes that the numerous issues noted by ODFW related to the proposed facility’s impact on wildlife species (and the categorization of habitat within the site boundary) will remain unresolved, it should provide a detailed discussion of how the overall public benefits of the proposed facility outweigh the damage to the resources. Please ensure that the discussion addresses each of the Council’s evaluation criteria listed in OAR 345-022-0000(2)(a) and (b).</p>
1-44	Exhibit P	345-021-0010(1)(p)(C)	Please provide categorization for habitats encompassed by the “southern” transmission alignment within appropriate maps and figures, tables, and acreage disturbance calculations.
1-45	Exhibit P Section P.3	345-021-0010(1)(p)(B)	<p>The application states that “...Category 1 habitat includes those point locations where golden eagles, Swainson’s hawks, or burrowing owls have active nests (See Attachment P-7). Historic golden eagle nests are also included because they have the potential to be used again in the future.” And “...one area where greater sage-grouse lekking behavior was documented is considered Category 1...Applicant has modified the Facility layout to avoid siting all facilities within 0.25 miles of the potential lek site.”</p> <p>Figure P-2 (“Habitat Categorization”) does not include any areas identified as Category 1 habitat by the applicant. Revise Figure P-2 to indicate the Category 1 habitat at each of the locations noted in the text. Revise Table P-4 to include the Category 1 habitat. Change the map scale if necessary to clearly show the proposed buffer areas around raptor nests and the potential sage grouse lek.</p>
1-46	Exhibit P Exhibit Q	345-021-0010(1)(p)(F)	The Department and other commenters have noted that there are additional references in the available literature that should be incorporated into the

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		345-021-0010(1)(q)(F)	<p>analysis of the potential direct and indirect impacts to birds and other species (especially big game, state sensitive species and threatened and endangered species) from the proposed facility.</p> <p>These include, but are not limited to:</p> <ul style="list-style-type: none"> <li>• Elkhorn Valley Wind Project Big Game Displacement Study</li> <li>• Baseline Study for Foote Creek Rim 2000 – sage grouse dropping transects</li> <li>• ODFW annual big game index counts from Ramo Flats route</li> <li>• Zeiler, et. al., 2009</li> <li>• Big Game Monitoring Study, [draft] Final Report, Elkhorn Valley Wind Project (WEST, September 2009)</li> </ul> <p>The Antelope and Elkhorn facilities, although treated as separate legal entities by rule and regulation, are effectively a single facility when looked at from the point of view of ecological impacts. Because of that close proximity, the pre- and post-construction and other monitoring studies conducted for the Elkhorn facility are particularly applicable to the analysis of potential effects from the proposed Antelope facility. Results from the Elkhorn studies and other monitoring programs in the area should be included in the applicant’s discussion of potential wildlife impacts.</p> <p>Revise the discussions throughout Exhibits P and Q to include the additional sources of information. For example, discuss the applicability of regional mortality data to predictions of risk at the proposed facility given the unprecedented placement of turbine strings within mountainous, coniferous forest habitat.</p> <p>If the applicant believes that any of the references cited above are not applicable to the proposed facility, provide a summary of the reference, its conclusions, and the reasons why the applicant does not believe the results should be applied to the analyses conducted for the Antelope Ridge facility.</p>
1-47	Exhibit P	345-021-0010(1)(p)(F)	The application states that Horizon will submit the post-construction big game

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	Section P.6.5	345-021-0010(1)(q)(F)	data for Elkhorn “upon finalizing the report after TAC [technical advisory committee] review.” The Elkhorn post-construction report is directly applicable to the analysis of potential impacts from Antelope and the Department considers it a critical piece of information. Please explain what role the TAC plays in finalizing the document and when Horizon anticipates the final report will be released.
1-48	Exhibit P Exhibit Q	345-021-0010(1)(p)	<p>The redband trout is listed in both Tables P-5 and Q-1 and the application indicates that the redband trout could occur in the project area. However, no characterization of current/historic distribution, habitat, and overall species status is provided in the text of either exhibit. ODFW has also commented that suckers and pikeminnows might also be present (and are not discussed) and that “the standard culvert design provided in the ASC does not meet Oregon’s fish passage criteria (OAR 635-412-0035).”</p> <p>Revise the text to include discussion of the occurrence of various fish species within the analysis area. Review ORS 509.580 through 910 and OAR Chapter 635 (Division 412) to review the requirements regarding Oregon’s fish passage laws. Because the construction of the facility will qualify as a “trigger event” under Oregon law related to fish passage, Horizon should consult with ODFW and provide additional discussion in the text of Exhibits P and Q concerning fish passage and culvert design.</p>
1-49	Exhibit P Section P.5	345-021-0010(1)(p)(D)	Please update the conservation status of the white-tailed jackrabbit and western toad consistent with current ORNHIC rankings.
1-50	Exhibit P Section P.5	345-021-0010(1)(p)(D)	Section P.5 discusses state sensitive species known to occur (and with potential to occur) within the site boundary. However, several species noted in the text are missing from Table P-5 (e.g. bats, gray wolf, peregrine falcon). Review the state sensitive species list found on the ODFW website and revise the text and Table P-5 accordingly to reflect the most current state list. Update the species’ conservation status as appropriate. Section P.7 should also be reviewed and revised to ensure that the discussion in the text is based on the updated species

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			status list.
1-51	Exhibit P	345-021-0010(1)(p)(D)	ODFW has indicated that the 2008 draft Ladd Marsh Wildlife Management Plan cited in the text is not current. Please contact ODFW for a copy of the most current plan and revise the text (if necessary) to reflect current information.
1-52	Exhibit P Section P.5.2.1 And Table P-6	345-021-0010(1)(p)(D)	The number of observations of sensitive species occurring in the analysis area discussed in the text in Section P.5.2.1 do not always match the numbers given in Table P-6. Please review the text and the table and reconcile the number of observations of the various species. Also, note that neither the hard copy nor the electronic copy of the ASC includes a page P-22. Please submit the missing page, or confirm that the apparently missing page is due to a simple page numbering error.
1-53	Exhibit P  Section P.5	345-021-0010(1)(p)(D)	Please provide a more detailed description of the use of habitat in the analysis area by sensitive bird species and a discussion of ODFW’s site-specific issues of concern (as detailed in ODFW’s comments on both the Antelope Notice of Intent and preliminary application).
1-54	Exhibit P  Section P.6	345-021-0010(1)(p)(E)	Exhibit P, especially Section P.6, includes extensive discussion of pre-construction surveys for the Elkhorn Project and relies on those surveys to draw conclusions about the potential impacts of the proposed facility. Provide a map that depicts the site boundary of the proposed Antelope facility, the site boundary of the operating Elkhorn Valley project (including existing turbine locations), and the analysis areas of each so that overlapping analysis areas can be clearly discerned.
1-55	Exhibit P	345-021-0010(1)(p)(G)	The application must present the Applicant’s proposed mitigation measures, which may include setbacks from sensitive areas. Comparing the proposed setbacks to those used under similar circumstances at the Elkhorn Valley Wind Project may provide additional insight into the applicability of Elkhorn monitoring data to predicting waterfowl mortality at the Antelope Ridge

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			<p>Project.</p> <p>Provide additional information on any proposed setback of turbines from Jimmy Creek Reservoir, including the magnitude of these setbacks in relation to those used for Elkhorn Valley turbines near Thief Valley Reservoir. If necessary, revise the analysis of effects to State Sensitive and Threatened and Endangered birds to reflect these setbacks (if any are proposed).</p>
1-56	Exhibit P  Section P.6.5	345-021-0010(1)(p)(E)	Clarify the spatial relationship between the big game survey area for Elkhorn and the analysis area for the Antelope Ridge Project.
1-57	Exhibit P  Section P.7	345-021-0010(1)(p)(F)	The discussion in Section P.7 omits an analysis of effects to some sensitive species. Review Section P.7 and the updated list of state sensitive species (see RAI No. 1-50) and add additional discussion as needed. Please include a concise summary of the nature, extent and duration of the impacts to each of the sensitive species that could occur within the analysis area.
1-58	Exhibit P  Section P.7	345-021-0010(1)(p)(F)	<p>The determination of impacts to habitat are in part contingent on the Applicant’s habitat classification. Revise Section P.7 (and other sections throughout Exhibit P) as necessary to reflect any changes to habitat categories that occur through Horizon’s discussions with ODFW during the application review process. This is especially critical in the event that the potential sage grouse lek site is classified as Category 1 habitat and the possibility that some habitat classified as Category 3 in the preliminary application might be re-designated Category 2 to reflect critical breeding and/or winter habitat for the sage grouse (and/or other species).</p> <p>ODFW has stated that the area within the site boundary zoned as Big Game Winter Range and Big Game Critical Wildlife Habitat should be classified as Category 2 habitat, not Category 3. Please revise the habitat category maps and tables throughout Exhibit P to reflect the Category 2 habitat designation, or provide a discussion based on ODFW’s wildlife mitigation policy on why a</p>

RAI No.	Application Reference	Related Rule (OAR)	Comment and Request for Additional Information
			Category 3 designation would be appropriate.
1-59	Exhibit P  Section P.7	345-021-0010(1)(p)(F)	Based on the experience at the nearby Elkhorn site, a significant portion of the collector system (if not the majority) will be placed aboveground. These lines pose a particular risk to gruiformes and anseriformes. Daily and seasonal movements of these species groups have been documented within the analysis area. Include an analysis of risk related to avian collision with aboveground collection and transmission lines.
1-60	Exhibit P  Section P.6.4	345-021-0010(1)(p)(F)	Please provide additional context to evaluate mortality risk to bats. If possible, provide a comparison of bat passage rates within coniferous forest habitats to open habitats within the Site Boundary. Contrast these rates to bat passage rates recorded during pre-construction surveys at the Elkhorn Project.
1-61	Exhibit P  Section P.8	345-021-0010(1)(p)(G)	Please provide additional detail regarding the use of bird flight diverters (BFDs). Specify whether BFDs will be used on above ground collector lines and/or transmission lines throughout the project area, or only on lines deemed high risk. Indicate the areas deemed to be high risk for bird collisions.
1-62	Exhibit Q	345-021-0010(1)(q)(A)	The greater sage grouse (a Candidate species) is not included within Exhibit Q while other Candidate species are.
1-63	Exhibit Q	345-021-0010(1)(q)(B)	Please provide additional information to support the conclusion that no significant population-level effects will accrue to Lewis’s woodpecker. Background information on the species’ use of project habitats relative to proposed turbines and seasonal movements may provide context for this determination.
1-64	Exhibit Q	345-021-0010(1)(q)(B)	Please include additional detail as to the measures that will be put in place to garner a “no significant adverse impact” determination for protected fish species. In particular, please include in-water construction windows and proposed sediment control measures.

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1-65	Exhibit Q Section Q.4.1	345-021-0010(1)(q)(C)	Please clarify the relation of proposed in-water work windows to the vulnerable life stages of the species present within each drainage.
1-66	Exhibit R	345-021-0010(r)(C)	Provide the ZVI analyses referred to in this section, particularly output plots of the ZVI analyses.
1-67	Exhibit R  Section R.4.1.8	345-024-0015	<p>It appears from the available information that the Antelope Ridge facility will be highly visible from the City of Union, although it is difficult to determine the extent and nature of the visual impact from turbines and/or above ground collector lines. Although the City of Union’s Comprehensive Plan does not include any protected scenic resources, the governing body of the city and numerous citizens in the Grande Ronde valley have expressed serious concern about the visual impacts (both daytime and nighttime) of the proposed facility.</p> <p>OAR 345-024-0015 requires the Council to find that “the applicant can design and construct the facility to reduce cumulative adverse environmental effects in the vicinity by practicable measures...” The “practicable measures” listed include using underground transmission (collector) lines and designing the components of the facility to minimize adverse visual features.</p> <p>The statement in Section R.5 (Page R-19, concerning the visual impacts of facility structures) that the “majority” of the collector lines will be underground is not correct (based on information elsewhere in the ASC). In addition, the applicant proposes to use Bird Flight Diverters on collector and transmission lines (see Section P.8 in Exhibit P), which by their very nature increases the visibility of power lines.</p> <p>Provide information, preferably in the form of photo simulations, of the extent that turbines and/or overhead collector lines will be visible from the city of Union.</p> <p><b>Note:</b> The Department understands the applicant’s reluctance to provide such simulations because such simulations do not take into account such things as atmospheric haze that affect what will be visible from a distance. However, the</p>

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			<p>site boundary of the Antelope facility is as close as one mile from the city, and the view of the facility components (barring days when clouds or fog envelop the surrounding mountain terrain) is unlikely to be affected by haze. The height of the turbines (and possibly the collector lines) means that they will extend well above the existing vegetation (even when viewed from the valley floor), providing an unobstructed view from the city. In addition, the extensive road-building (and above ground collector lines) proposed for the Antelope project will require a significant amount of vegetation removal, which will likely further increase the visibility of facility components.</p>
1-68	<p>Exhibit U  Section U.5.7.3</p>	345-021-0010(u)(D)	<p>It is stated that there will be two “major improvements” involving road widening “as shown in Attachment U-1.” Attachment U-1 is a figure of populations within the analysis area and does not appear to identify any road improvement areas. Attachment U-2 identifies the transporter routes, but does not appear to have any detail on the road improvement locations.</p> <ol style="list-style-type: none"> <li>a. Please provide a figure with a blow up of the road segment as-is and the proposed change. Please identify whether there will be any impacts related to stormwater runoff from the widened road segments, particularly at the OR237 bridge north of Telocaset. Photographs of the areas proposed for modification would be helpful.</li> <li>b. Please provide evidence of approval of the road modifications by ODOT following the April 7, 2009 meeting referenced in the application.</li> </ol>
1-69	<p>Exhibit U Section U.5.7.3</p>	345-021-0010(u)(D)	<p>It is stated that “several rural local roads will be improved to accommodate construction-related traffic turning movements. The proposed improvements will have a beneficial long-term effect by improving the quality of the road for all users.”</p> <ol style="list-style-type: none"> <li>a. Please provide magnified figures of these locations showing the configuration before and after the change. Photographs of the road segments would be helpful.</li> <li>b. Identify any environmental impacts and mitigation proposed.</li> </ol>

RAI No.	Application Reference	Related Rule (OAR)	Comment and Request for Additional Information
			c. Please provide evidence of discussion and acceptance by ODOT or Union County where applicable.
1-70	Exhibit U Section U.5.7.3	345-021-0010(u)(D)	Please identify any roads or bridges on the primary or secondary transporter routes that would need to be reinforced or rebuilt to bear the weight of vehicle loads anticipated during construction. If reinforcement or rebuilding is not needed, please discuss any special measures or restrictions (for example, speed restrictions on bridges) necessary to ensure safety and bridge integrity. Provide evidence of consultation with ODOT and Union County authorities on these questions.
1-71	Exhibit U Section U.5.7.3	345-021-0010(u)(D)	It is stated in the application that “In areas where there are no existing roads to access wind turbine strings or proposed facilities and in some places where improving the existing road could be more detrimental to the environment (such as wetland crossings), new roads will be constructed.”  Please identify these road segments in a detailed figure, particularly those that are intended to avoid an existing sensitive location (e.g. wetlands). Explain what will be done with the existing road segments that are abandoned. Describe measures used to assess whether a new road is needed rather than improvement of an existing road and describe any mitigation that will be used.
1-72	Exhibit U Section U.5.7.3	345-021-0010(u)(D)	It is stated that “Portions of local roads that may be used include: Jimmy Creek Road, Olsen Road, and Ladd Canyon-North Powder Road, and potentially Ramo Flat Road if the preferred routes provide unsuitable.” Please describe the road portions that may be unsuitable and what remaining analysis is being completed to determine their suitability. Have the alternate routes listed already been evaluated for suitability (turning radii, weight restrictions, etc.)?
1-73	Exhibit U	345-021-0010(u)(D)	Please describe plans to address traffic safety, particularly in the cities of Union and North Powder where increased construction traffic will occur. Please provide your “construction traffic management plan” and evidence of consultation with the cities of Union and North Powder.

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1-74	Exhibit V	345-021-0010(1)(v)(B)	<p>It is stated that any concrete waste from concrete washout will be used onsite as fill or transported off-site to the regional landfill for disposal. Describe in much greater detail the concrete washout procedure and the process and procedures that the applicant will use to manage concrete washout waste as onsite fill.</p> <p>Describe the procedures to be used to contain and manage concrete washwater to ensure that there will not be ground infiltration during the evaporation process.</p>
1-75	Exhibit V	345-021-0010(1)(v)(A)	<p>Review of the ASC leads to the conclusion that there will be a considerable amount of woody debris generated during road building and land clearing activities, yet the ASC is virtually silent on the disposition of such a significant waste stream (see also RAI Comment No. 1-18).</p> <p>Describe how the applicant intends to manage this waste stream.</p>
1-76	Exhibit W	345-021-0010(1)(w)(C)	<p>Provide the following information for the site restoration cost estimate:</p> <ol style="list-style-type: none"> <li>a. Describe the maximum weight of metal (net tons) in the turbine tower and nacelle for the proposed 1.5-megawatt (MW) turbines.</li> <li>b. Describe the maximum weight of metal (net tons) in the turbine tower and nacelle for the proposed 3.0-MW turbines.</li> <li>c. Describe the maximum volume of concrete (cubic yards) in each turbine foundation to a depth of three feet below grade (including all concrete above grade) for the proposed 1.5-MW turbines.</li> <li>d. Describe the maximum volume of concrete (cubic yards) in each turbine foundation to a depth of three feet below grade (including all concrete above grade) for the proposed 3.0-MW turbines.</li> <li>e. Describe the maximum volume of concrete (cubic yards) in each transformer pad to a depth of three feet below grade (including all concrete above grade) for each turbine type that would include a pad-mounted transformer.</li> <li>f. Describe the maximum area (square yards) and type of surface</li> </ol>

RAI No.	Application Reference	Related Rule (OAR)	Comment and Request for Additional Information
			<p>preparation for each turbine turnout for the proposed 1.5-MW turbines.</p> <ul style="list-style-type: none"> <li>g. Describe the maximum area (square yards) and type of surface preparation for each turbine turnout for the proposed 3.0-MW turbines.</li> <li>h. Describe the maximum length (miles) of the overhead 230-kV transmission line or lines that would interconnect the facility with regional grid at the existing BPA LaGrande Substation, IPCO Ladd Canyon Substation, and/or IPCO North Power Substation.</li> <li>i. Describe the distance (feet) between the wooden H-frame poles or steel monopole structures that would be installed to serve the 230-kV transmission line.</li> <li>j. Describe the total number of wires and cables that would be installed to serve the 230-kV transmission line.</li> <li>k. Describe the maximum length (miles) of the aboveground segments of the 34.5-kV collector system.</li> <li>l. Describe the distance (feet) between poles that would be installed to serve the 34.5-kV collector system.</li> <li>m. Describe the total number of wires and cables (including fiber optic cables serving the SCADA system) that would be installed to serve the 34.5-kV collector system.</li> <li>n. Describe the maximum number of junction boxes that would be installed to serve the 34.5-kV collector system.</li> <li>o. Describe the maximum length (miles) of new access roads with a drivable surface of 22 feet that would be developed during construction of the proposed facility.</li> <li>p. Describe the maximum length (miles) of new access roads with a drivable surface of 34 feet that would be developed during construction of the proposed facility.</li> </ul>
1-77	Exhibit X	345-021-0010(1)(x)(A)	Please provide the acoustical data used for the analysis presented in Exhibit X.

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1-78	Exhibit X	345-021-0010(1)(x)	<p>It appears that the noise analysis seeks flexibility to choose wind turbine models at a later date. However, different models have different maximum guaranteed sound power levels. Some models within the range specified in this application (1.5 to 3.0 MW) have higher maximum sound levels than those modeled in this application. It is our understanding, for instance, that a Vestas V90 can have a maximum sound power level of 112 dBA guaranteed by the manufacturer.</p> <p>The Department must have the noise specifications of any turbine types being considered so that the Council can be assured that the modeling was conducted on the worst noise case. Ensure that the specifications include <u>all</u> potential sources of noise associated with each turbine unit type under consideration (for example, hydraulic cooling unit fans located at the base certain turbine units) in the acoustical analysis report submitted to ODOE.</p> <p>Please provide a list of the turbine models that are being considered and the maximum sound power levels associated with each (not including the 2 dBA added for modeling). Also, please provide a discussion of turbine layout. The layout in the current figures, Attachment X-1 and X-2 show 175 and 174 turbines, respectively (the text indicated that one turbine was removed from the 100-meter model to avoid exceeding the noise threshold). The description of the facility in Exhibit B indicates that 182 turbines may be sited. If the applicant desires the flexibility to site 182 turbines the noise analysis must be based on that worst-case number of turbines.</p>
1-79	Exhibit X Table X-7	345-021-0010(x)	<p>Please provide demonstration of compliance with the 10dBA incremental noise standard found in OAR 340-035-0035(1)(b)(B) and identify all receptors for which an easement or covenant may be necessary.</p>

The following comments may be considered editorial and the response to this RAI is not required to specifically address the items below. However, if in the course of responding to this, or any future RAI(s), the applicant finds it necessary to revise the related section, please incorporate the corrections noted below.

<b>ASC Reference</b>	<b>Comment</b>
Exhibit B	The application states that the facility will have a nominal generating capacity of up to 300 MW and the average electric generating capacity will be approximately 90 MW. ORS 469.300 defines the average generating capacity of a wind energy facility as the nominal generating capacity divided by a factor of three. The correct average generating capacity of the proposed facility is 100 MW (300/3.00).
Exhibit B Sections B.8 and B.9	Section B.8.6 states that the meteorological towers will be the same height as the hub of the turbines, ranging from 210 feet to 330 feet. The table in Section B.9 indicates a height range of 213 feet to 312 feet for both the met towers and the hub heights. The values in the text and the table should be reconciled.
Exhibit B Sections B.9 and B.11	Section B.11(v) states that for the overhead transmission feeder line, wooden H-frame poles are typically 60 feet high and steel monopoles can be up to 120 feet tall. The table in Section B.9 indicates a height range of 65 feet to 120 feet. The values in the text and the table should be reconciled.
Exhibit L Section L.4.10	The application states that “The primary purpose of the Ladd Marsh State Wildlife Area is the protection of wildlife, and transmission lines have not been shown to adversely impact wildlife.” This statement does not coincide with the many statements throughout the application (especially Exhibit P) discussing the impacts of transmission lines on wildlife, nor does it coincide with the existing literature. Please delete this sentence, or provide the basis of the applicant’s statement that transmission lines do not adversely impact wildlife.
Exhibit K Section K.3	Section K.3 references Attachment K-1 as a map showing the Union County zoning of the facility site. The correct reference is Attachment K-2.
Exhibit K Section K.2	The first bulleted item on the facility component list is “Up to 182 wind turbines of 1.5 to 3.0 MW and with hub heights ranging from 330 feet to 475 feet tall.” Revise this bullet to indicate that these are turbine blade tip heights, not hub heights.